

FARMER'S  ADVOCATE

FOR 1876.

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WILLIAM WELD,

Editor and Proprietor.

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WM. WELD, Editor and Proprietor.

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TO SUBSCRIBERS:

TERMS.—\$1 per annum, postage paid; \$1.25 when in arrears. We cannot change the address of a subscriber unless he gives us his former as well as his present address. Subscribers should always send their subscriptions by registered letter, and give their name and post office address in full. Subscriptions can commence with any month.

TO ADVERTISERS:

Our rates for single insertion are 20c. per line—\$2.40 per inch, space of nonpareil (a line consists on an average of eight words). Manufacturers' and Stock Breeders' cards inserted in "Special List" at \$1 per line per annum. Condensed farmers' advertisements of agricultural implements, seeds, stock or farms for sale, or farms to let, not to exceed four lines, 50c., prepaid.

Letters enclosing remittances, &c., only acknowledged when specially requested. Our correspondence is very heavy, and must be abridged as much as possible.

Monetary Affairs.

There has been a great depression in the general business of the country. We were living too fast; we had profited by the losses and wars of other countries. There is more poverty among the artisans than ever before. Trade and business will shortly reverse; in fact, every prospect indicates improvement, although the cry is "Hard times and no money." The facts are, that money is accumulating in particular centres and must ere long flow more abundantly. At the present time it is a drug on some markets at one per cent.; in New York at three and a half. We are pretty sure to have it in Canada at five or six per cent., and that shortly. To our patrons we would say: If you have money to lend, lend it on long dates; if you want to borrow, borrow on short dates. Land is a safe investment, and will yet rise. Stocks are not as safe, and will fall.

The wealth of the farmers is in a great measure the cause of the scarcity of money. Twenty-nine million dollars belonging to farmers is now in the hands of the banks. The bank managers have been afraid of a panic setting in, as the least alarm would cause farmers to rush for their money; therefore the banks have been more than usually cautious, and have held their cash in reserve ready for any emergency. The danger is now considered past, and money will be asking for borrowers to use it, instead of the reverse.

This, we trust, will cause farmers to improve their farms more, as money will not return them the interest they may anticipate, and no bank or any other kind of investment is as safe and sure as farm property; no improvements are equal to farm improvements; no persons deserve more censure than the miserly land holders who will not improve their lands or allow others to do so.

POVERTY AND WEALTH.

There are more really needy poor people in Canada than ever before. The cities and towns are filled with them. The wealthy farmers should aid

in maintaining them through the present season, as many are emigrants and many flock from the country to the cities to beg. Scores are daily on the streets. No proper almshouses, or workhouses, or houses of industry are established; the liberality of the charitable is over-taxed. No way will touch the hearts of many wealthy persons but direct taxation.

Something should be done to aid the needy. There always will be poor, unfortunate beings, but the present time needs action.

RAILWAYS VERSUS CANADIANS.

We were in Toronto a few days ago, and we saw smoke issuing from a stove pipe in a common freight car. We opened the door and found the car filled with potatoes and onions. These were sent from Detroit. The Americans can take our money out of our own markets, because the railroad company will carry the American produce at a lower rate than they will carry Canadian produce. A car from Detroit costs less by one-third than one sent 100 miles less distance, if loaded in Canada. We have our farms cut up, our fences burned, and bonuses to pay; our horses are frightened and killed, and our families bereft of some loved member, and yet we are compelled to pay nearly a half more for railway accommodation. Farmers, Grangers, and Members of Parliament should endeavor to protect our Canadian interests. What do the Americans do for us? We have bowed down to them too low; we have given them too much. We ask for our rights, but asking will not always do. We must maintain them.

THE CENTENNIAL EXHIBITION.

We are in receipt of an advance circular from Burnett Landrett, of Philadelphia, Clerk of the Bureau of Agriculture, No. 141, showing that Short-horn cattle eligible for admission are animals registered in either Allen's, Alexander's, or the English herd books.

We ask for explanation in regard to this. Is Canada to be taxed \$100,000 for this Exhibition, and to be snuffed out at the onset, or why is the Canadian Herd Book not mentioned? This may have been an oversight, but the rule is evidently inimical to our interests, and such prompt measures should be taken as to allow us fair play. We ask no more.

Alarming Spread of Trichinosis in the Western States.

The report on Trichinosis by Dr. George Sutton, Indiana, in the Transactions of the Indiana State Medical Society, 1875, is certainly an alarming one, when we bear in mind that numbers of human beings have lost their lives from eating pork affected with trichina. While the neighboring country has suffered greatly from this dreaded disease, Canada has, we believe, been entirely free from it; but as prevention in all cases, and, above all others, in diseases so fatal as this one, is better and easier

than cure, it is well that we know the extent of its ravages where it has, for some time, been too well known, and that we should know from whence it proceeds and how to guard against it.

The trichina are engendered in the animal by the use of unclean and unhealthy substances as food—the garbage and offal eaten by pigs from back yards—and getting introduced into the stomach these terrible vermin (if we may so call them). Hogs are allowed to run at will half fed, and, to appease their hunger, they devour any and everything, no matter how filthy. Carcasses of dogs, horses, no matter if putrified, are ravenously eaten. And all this filthy trash is teeming with animal life. The entire flesh of the hog is affected with the disease; "every ounce is capable of producing disease." To prevent the disease in hogs nothing more is needed than to feed them on clean, healthy food, and prevent them having access to any other. The remedy is simple; it is the only remedy.

This is the report:—

"From microscopic examination of pork killed in Southeastern Indiana, we have found from three to sixteen per cent. of the hogs affected with trichina, the number of hogs diseased varying greatly in different localities.

That over five millions of hogs are slaughtered and packed in the Western States, not including those which are put up for family use by the farmers; that if four per cent. of this pork is diseased, which we believe to be a low estimate, we have 221,484 diseased hogs put annually upon the market; or, at an average of 200 pounds to the hog, 44,296,800 pounds of diseased meat, every ounce of which, under favorable circumstances, is capable of producing disease. That from the cases of trichinosis that came under our observation, and the post-mortem examinations, and the effects upon the dog that was fed on the diseased meat we have come to the conclusion that ninety per cent. of disease produced from eating trichinosis pork appears either as gastro-enteritis, or as a diarrhoea or dysentery, and not more than ten per cent. as the fully developed form of trichinosis, in which the muscular system becomes affected. That as diarrhoea, dysentery and enteritis rank high as causes of mortality in the United States, these diseases causing 31,153 deaths in 1870, as shown by the last census reports; and as we have seen that a large amount of trichinosis pork, capable of producing these diseases, is among the principal articles of food in our country, we think it more than probable that trichina have a much greater influence in the etiology of this class of diseases than has been recognized by the profession. That it is highly probable that, when the fact becomes more generally known that so large a percentage of pork is swarming with trichina, capable of producing disease, it may have an effect upon the use of this meat, and consequently affect the sale, to some extent, of one of the principal articles of commerce in the west."

Mr. G. Wiseman, of Ingersoll, informs us that he has tamerack posts that are now sound, and that have stood in the ground for thirty years. Others that have not been in the ground ten years are badly decayed. He wishes to know the right time of the year to cut them for them to last. Perhaps some one of our readers that has had experience with tamerack will reply.

Should Our Grain Crop be More Exclusively Wheat, that its Price may be Reduced.

Let us consider this scheme that is put forward: The "effectually closing the market for barley, corn and rye, and thereby lowering the price of wheat, oats and peas." The one is considered as the inevitable result of the other. It is implied that the effectually closing the market for one variety of grain will force the farmer to increase the area of another variety in equal proportion, and thereby lower its price.

What, we would ask, would be the result of closing the market for barley, corn and rye? Would this change in the rotation of grain crops produce the effect of lowering the price of wheat and other grains? Agriculturists have entertained the opinion that the system of farming and the rotation of farm crops which give the farmer fair remuneration for expenditure of capital and labor, was the best for him to pursue, and, inasmuch as agriculture is the basis of our national prosperity, most beneficial to the country. Every one who knows anything of agriculture, whether he be a man of science, or an experienced, practical farmer, knows that as by a rotation of different crops the farmer is enabled to raise more produce from the land, so also a diversity of grain crops enables him to produce more bushels of grain from a given area of ground, than if there were less or no diversity, and that this diversity is not so exhaustive of the productive power of the soil. As one is a different variety of grain from the other, so the food they each take from the soil is not the same. This difference in the exhaustion of plant food is the greater as the roots of one go deep into the earth to procure food, while the other derives its food more from the surface and the atmosphere. Less diversity in grain crops implies a less number of bushels of grain.

Were the area of the wheat crop increased by as many acres as would be sown with barley, if the market for it were not closed, there would, for a time, be a greater aggregate number of bushels of wheat, though there would be a lower average yield, and that at a lower profit, if any. And were the price of wheat lowered as anticipated by this means, is it to be expected that there would be continued an increased area of wheat culture? Would the farmer go on increasing his culture with any expectation of realizing no profit, but entailing on himself an almost certain loss? The farmers must, as well as any other class, expect remuneration for their days of toil and their money invested. The consequence of such a reduction in the price of wheat would be the decreasing the area of the crop. This has been demonstrated more than once. Not longer ago than last year there were dull markets with low prices, and in consequence of this there was less wheat sown in the succeeding fall and spring than usual. Wheat did not pay, and so more acres were given to the culture of other crops. There is no axiom truer than this: To encourage any branch of industry there must be remunerative prices.

The uncertainty of remuneration from one variety of crop is another argument in favor of diversity in grain crops. Is our fall or spring wheat injured or killed by winter or spring frosts, or by rust or weevil?—still our other cereals may be good crops, and the year's labor not be altogether unprofitable. This is a matter of no light moment. The total profits of the farm from all sources form the compensation for a loss in a particular one, and enable the farmer to bear partial losses, and to sell at lower prices—to *live and let live*. We give one instance showing that on a suitable soil for it, one sort of grain may pay well, when on the same soil a crop of another va-

riety would entail a loss. Last spring Mr. W., near Sarnia, raised 800 bushels of barley from 16 acres of light soil, when on the same lot of ground there would not, in all probability, have been more than 15 bushels per acre.

The amount of capital received by Ontario for the one article is not a sum to be lightly jeopardized. The exports of barley from the Western province, we learn, have risen to an unprecedented volume. The receipts in Oswego this year to close of navigation, were 3,700,000 bushels. The total exports must have been very great when this quantity was sent to one market. The *Montreal Witness* says: "Those who are wont to speak disparagingly of this as a farming country may now ask what condition should we be in if this interest had been as contingent for its prosperity as on human devices as those are which are gone so low—with continued depression in every interest 'save the agricultural.'" Well has it been said that agriculture is the basis of our national prosperity.

Of corn and rye, the other cereals to which the market is to be *effectually closed*, we need say little. They have not been an important part of our agricultural resources. In the United States corn meal as a substitute for wheat flour has served to keep down its prices, and it feeds hogs beyond number for home consumption and export, but it cannot be said to be one of our staple products.

The sum is this: The proposed measure would have the effect of reducing the area of our grain culture, so that instead of more loads of grain in the market, with lower prices, there would be smaller grain markets—there would be less money brought into the country in payment for grain, and the financial condition, not only of the farmers, but of the country at large, paralyzed. We may pronounce this novel method of improving the condition of the country an utter fallacy.

Disease Among the Hogs.

The fall of 1875 and the winter so far have been very fatal to all domestic animals throughout America. There have been great losses among horned stock and horses, and much greater losses among the hogs. It is estimated that 12,000 hogs have died of cholera in one county in Illinois during the past year, and the disease still rages. From all parts of the Western States we have reports of great losses among them, numbers of them in many instances dying suddenly. The lungs seem to be the seat of disease in some, and others are attacked with looseness of the bowels and an affection of the eyes, resulting sometimes in blindness. From a communication in the *Western Farm Journal*, dated at Canton, Missouri, we learn that several of the largest hog raisers in that vicinity lost nearly their whole stock in a few days. One farmer lost seventy, another lost forty-two out of a flock of fifty. It has been thought by some who have been investigating the matter that nearly half the hogs in that part of the country were dead at that date. The disease makes its appearance by a slight cough, which increases rapidly, and the victims die in a few hours, as if from strangulation. The nature of the disease is as yet unknown, and whatever remedies were applied have been of no effect.

THE HOG CHOLERA.

This disease is killing off nearly all the hogs in the vicinity of Pittsburgh, Ohio. The *Ohio Farmer* writing of this disease, says: "No specific for genuine hog cholera has yet been discovered. Numerous remedies have been proposed, some of which succeed in some cases and fail in others. As a preventive let hog owners in localities where disease has appeared disinfect the pens daily with carbolic acid and keep them perfectly clean.

"Feed clean slop made of bran, boiled potatoes and other vegetables, and give water to drink."

In genuine hog cholera the following symptoms are always present: Indisposition to move; extreme pain, manifested by drawing the animal up in a heap; dull eyes, sunken in the head and discharging in the inner corners; hair and bristles rough; dull, heavy cough, and diarrhoea after the disease has advanced. The following has been recommended as a remedy:

Keep the following mixture in an open trough, accessible to the hogs all the time: One bushel charcoal, pulverized; three bushels wood ashes; half bushel slaked lime; one peck of salt; two pounds Spanish brown; five pounds sulphur; four ounces saltpetre; half pound copperas.

Oil of peppermint mixed with slop has also been recommended.

When the herd is first affected use carbolic acid—one ounce in enough swill for twenty-five animals.

Soak corn in strong lime water and feed it; or dissolve lime and copperas in water, and keep the solution in open troughs.

The American Shorthorn Convention.

The annual meeting took place in Toronto on the 2nd of December and two following days. The meeting was well attended by the principal Shorthorn breeders of the United States and Canada. The greatest ability and knowledge of the subject under consideration were displayed in the addresses delivered. The question of in-and-in, or line breeding, was very ably treated. (This was the first Convention of the kind we had attended, and of course your humble servant went there rather green, and as we are expected to give information to those who could not attend, we must be excused if all do not see through our spectacles.)

Our impression was that this Association was what we have heard many farmers term it—a close compact. We have not changed our view on the question, but find in that compact there are two parties. One party advances a principle which we and nearly all other farmers had been believing was erroneous—that is, close breeding. We had, up to the time of attending this meeting, always advocated crosses or change. They contend that from in-and-in breeding the finest show animals have been attained; that finer bone and more flesh, more handsome animals, will be produced, and that such animals will duplicate themselves, or, in other words, reproduce their like with greater certainty than any others.

They instance facts and prices and results of exhibitions to establish these facts. Instances are shown of close breeding for five generations, and the prices that such animals bring would tend to show that for breeding purposes these are the best.

A second party is composed of breeders of Shorthorns that are raised from out breeding.—They contend that in-and-in, or line breeding, tends to weaken the constitution of the animal, causes sterility or barrenness, and that they will not fatten as well. They bring numerous arguments to prove their assertions. There was no vote taken on the question, but it could be clearly seen that the two parties could not agree, as both are convinced of the correctness of their tenets.

There are more breeders whose herds are not in-bred than those that are, therefore the second party might carry the point in vote; but the following astonishing fact must cause all outside of either party to consider: The day after the close of the Convention a sale of Shorthorns took place. As we passed by the cattle that were to be sold, in company with one of the best and wealthiest farm-

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ers we know of, he said casually: "There is a bull I would not take home as a present." We looked at the animal. He was of medium size, rather of the buffalo make, that is, very much heavier on the fore quarter than the hind. This bull was brought into the sale ring, and caused more excitement than any other animal sold, although other animals sold higher. The bidding was spirited, and the competition for his possession was greater than for any other animal sold, the bidders being more numerous. He was knocked down at \$4,500. He is now nine years old, and has been more closely bred than any other bull offered.

We do not believe that half of the real farmers in Canada would give \$30 for him; no breeder there would take him as a present without the pedigree. We do not believe he would take a prize at any township show, yet we believe every real breeder there would give from \$50 to \$200 if they could have a calf from him, from any of their own cows. They believe he has the power of transmitting the type of his ancestry with a certainty, and that no cross-bred or out-bred bull would be one-tenth as valuable, even if his appearance should be prepossessing.

We do not believe this bull would produce as good a calf for the profit of the common farmer, from a common cow, as many other Shorthorn bulls would that have no pedigree. The poorest farmers, and rich ones, too, still ridicule the idea of pedigree more from parsimony than from knowledge, and while they speak against the high prices paid, would gladly step into the inside party if their purses or spirit would allow them. We would by no means advise any one to touch any of these high priced animals, unless they thoroughly understand what they are doing, but we would advise the poorest and the best farmers to strive and improve their stock. Those that really understand breeding well know they must have the best; price is of only secondary consideration to the real breeder.

It was stated that more Shorthorns had changed hands and higher prices had been paid during the past year than ever before. It was considered injudicious to run up prices too high. It was the opinion of the Association that Shorthorn cattle should be assessed at the rate of common cattle. Some considered the present prices too high. The advantage of using good bulls must be taught to farmers; they do not know it. One lot of 16 steers, three years old, had been sold for \$210 each; they averaged 2,100 lbs.

The Secretary showed that 154 Reports of the Association had been sold in Canada, and only two had been sold in the States. We did not make enquiries about this, but it appeared to be a strange statement.

It was stated that the old long horns would take six to seven years to mature; the Shorthorns could be matured in three. Judge Jones, of Ohio, considered the standard of judgment for cattle should be considered as 100 points divided into four classes, consisting of the following: 1st, robustness of constitution, 20; 2nd, cylindrical form, 40; 3rd, hair, skin and flesh, 20; 4th, milking qualities, 20. Some considered that an animal should be judged on its merit, independent of pedigree. Registering pedigrees was considered a grand aid to improvement.

Impoverished Soil—Its Improvement.

As it is with animals so it is with soil. With fair treatment they may, with little trouble, be kept in good condition. Suffer an animal to be worn out by bad treatment, deprive him of needed food and rest, and the difficulty is to return to him that state of vigor that he should never have been deprived of. So is it with the soil of our gardens and fields. They, too, require their regular food and the timely rest that they should receive by rotation, pasture or fallowing, and to restore to

them that fertility of which they had been deprived is a matter of no little cost and labor. The good farmer knows he cannot afford to treat his land in this manner. It does not pay. If the farm be impoverished so must be its occupier. Impoverished soil is not only unremunerative for a short period, but it sometimes occurs that, for year after year, it can but with difficulty be brought to pay the expenses and labor required and make it at all profitable. We have known land that had received such treatment from the occupant, who looked for a good return in heavy crops, and yet he was sadly disappointed. He had put no less than a score of loads to the acre of good farmyard manure, not wasted by exposure. The ground was plowed well and in good season, and, after all, manure and culture, the crop—potatoes and turnips—was so very light as to be almost a total failure. It would not pay expenses—and there was no failure from the turnip seed. It germinated freely, nor were the young plants eaten by the fly; nor any blight or disease affect the potatoes. The whole crop seemed starved and stunted from a deficiency of plant food. The following year that ground was sown with spring wheat, and the crop was as light as the root crop, though uninjured by smut or rust, or by late frosts. It, too, seemed to be a poor yield, from poverty of the soil; and that soil had been well manured. Such failures sometimes occur. The ground may have been well manured, and the culture such as to render the plant-food in the manure and soil available for the germination of the soil and the nutriment of the growing plants, and the crop, after all, may be a partial failure, without any apparent cause. Let us enquire what we are to attribute such failures to. The soil referred to in this instance had been a loamy sand. By taking from it successive scouring crops for some years, without manure or change of crop, it had been entirely exhausted of the loam, in which lay all its original fertility. The power possessed by soils having any fertility of separating the salts that form the food of plants and retaining them for that purpose till absorbed by the roots, was wholly wanting in that impoverished, porous soil. When the manure was dissolved the ammonia, potash and other elements necessary for the nourishing of plants, passed away through and from the porous soil, leaving scarcely a trace behind. Even sandy soil, as long as any vegetable matter remains in it, is possessed, in a greater or less degree, of this retentive property, and so long is it benefited by the manure and no longer.

The application of manure to the soil in that exhausted condition is the merest waste. Had the owner thrown it into the river he would not have committed an act of folly much greater than what he did. When the constituent elements of the manure were dissolved they passed through the utterly exhausted soil as fallen rain through a sand heap. They contributed nothing to the fertilizing of the soil or supplying food to the germinating or growing plant; the impoverished soil had no power to retain them.

ENRICHING THE IMPOVERISHED SOIL.

The improvement of worn out soils is one of the most difficult and expensive undertakings in agriculture. Land that has been deprived year after year of its fertility cannot, in a short time, be restored to its former fertile condition. That condition may have been the result of agriculture, or it may have been the work of Nature, as in the wooded virgin soils of newly settled countries; but the state of fertility, from whatever cause it may have been provided, if once destroyed, can only be restored by skillful farming, pursued for some time.

The great want in impoverished, sandy soil is the want of vegetable matter, a want, it may be, amounting to total absence of this, which possesses as its constituents the first and most necessary food for the support of vegetable matter. The richness of the soil in carbonic acid depends greatly on the supply of vegetable matter. And where this vegetable exists in the soil in sufficient quantities, that soil possesses the needed retentive property.

A liberal application of earth that is rich in vegetable matter is a good remedy for such an impoverished soil, wherever it can be had and applied without too heavy an expense. In farming we must beware that the cost does not outbalance the profit. Muck would be a good topdressing. Two or more crops of buckwheat, plowed under in succession, would be of great service. Any introduction of vegetable matter into such soil must be an improvement.

An essential principle of good farming is to keep the soil in such condition as to utilize all the elements of fertility received, both from the atmosphere and from the application of manure, as well as those within the soil itself, whether natural or acquired. The atmosphere is a reservoir of wealth, not hoarded up without a good purpose, but to be dispensed liberally, refreshing and nourishing every green thing upon the earth. The vapor arising from the earth descends again upon it, bringing supplies of carbonic acid, oxygen and nitrogen, adding to its productiveness and nourishing plants in their growth. By the judicious use of cultivator and hoe, and a suitable rotation of crops, the soil is kept in that state best fitted to receive all the benefits of the atmospheric influence.

Fertile soils possess not only a power of absorbing the elements of fertility, so indispensable for the nutriment of plants, but they also have the power of retaining them. But little of the ammonia, soda, potash and other elements, furnished by the atmosphere and the manure applied, pass away by filtering through the soil in combination with the water, when the soil retains somewhat of its loamy or fertile condition. They are retained by the retentiveness of the soil.

Pasture.

Writers on agriculture, whether they be practically acquainted with their subject or not, are given to greatly change upon the exhaustive effects upon the soil of raising wheat and other grain. The annual removal of so many bushels of grain from every acre is made the basis of a calculation as to how soon every farm in the country will be brought to a condition of barrenness and every farmer to destitution. To a certain extent this is true, and no good or intelligent farmer needs to be told so plain a truth. But few persons take any thought that the remedy proposed for this supposed evil is equally injurious to the soil as the evil itself. Along with the remonstrance comes the advice to raise cattle, or to substitute dairying for wheat growing. Dairying is the favorite alternative. Grass is not exhaustive of the soil, and may be grown indefinitely, we are told, without injury thereto, if not with positive advantage. Now there are a few facts which bear upon the subject which are very pertinent and useful to study. We all admit that a crop of wheat taken from a field and sold to some distant place, necessarily takes away from the soil certain elements of absolute necessity to its fertility. The continued growth of crops must in time remove from the soil all those necessary elements it may contain, the exhaustion of the richest soils being thus only a question of time.

But if we estimate the effect of the removal of a certain amount of grass, or its product in milk, in the same manner that we estimate the effect of the wheat crop, we shall find very little difference.—Nay, we shall find that the average yearly product of a cow in milk actually takes more from the soil, and of the same elements, than the average crop of wheat does.

Of every valuable element of the soil the crop of milk is more exhaustive than the crop of wheat. The dairyman who every day, for half a year, carried to the factory or ships to the city, six cans of milk, exhausts the soil more than the farmer who sells 500 bushels of wheat each season. If, then, the farmer is compelled to return some equivalent to the soil for the wheat removed, that he may keep his farm in good condition, he must return to the meadows an equivalent for the draft he makes from them in the shape of milk. The manure from his stock alone will not be sufficient, unless he feeds them purchased grain, or other food rich in nitrogen, phosphate of lime and potash, or adds these to the soil in the shape of wood-ashes and potash salts, and superphosphate of lime and bone dust.

Dairying, then, can only be carried on at an expense of the soil equal to that of growing grain, and it is a mistake to suppose that we can congratulate ourselves upon the steady increase of this industry as an escape from the exhaustive effects of grain growing. If dairymen should be led to suppose that their fields may be pastured indefinitely without injury to their fertility, they will fall into a mischievous error. The relief from the heavier labor of growing grain will be dearly purchased if the meadows are pastured from year to year without frequent top-dressings of the needed fertilizers, or of manure enriched with purchased food. It may be, and to some extent it undoubtedly is, owing to this unsuspected exhaustion of meadows by pasturing that many farmers find them to fail prematurely, and are obliged to break them up and re-seed these with the hope to restore the herbage which they think has run out.

We do not know to whom credit for the above article on pasture is to be given, but it expresses the opinions held by more writers on the subject. We have heard and read it several times, and must say that the opinion advanced is at variance with the results of our observation. To prevent any misconception, we would refer to the two words, Pasture and Meadow, used as if designating the same thing. The remarks relative to the exhaustion of the soil of meadows, if not wholly correct, is not without some foundation. From it the crop of grass is taken every year, and, if no manure be applied, the yield of grass constantly decreases.

The case with pastures is quite different—so much so, that on good grazing farms the land acquires increased productiveness from being grazed on. It is continually enriched by the droppings of the pastured animals. In this we hold that science does not contradict experience. Much is taken from the soil in milk and meat, but there is a return equal in value to the soil. The well known fertility of the old pastures of England and Ireland is such as to demonstrate that pasture, so far from impoverishing, enriches the land. The writer of this knew land that had been at least fifty years feeding stock, partly fattening cattle, and a more fertile tract of land could not be met with in that very fertile country. The only manure it received during the time was the droppings of the cattle fed on it.

This land, though feeding 80 or 90 sows per hundred imperial acres, was never eaten bare, and, at the setting in of the winter, always was on it a good coat of aftergrass. This winter's covering was of great service to it, and then young grass growing up through it in May, afforded good early pasture for the stock. In order to have such pasture, it is necessary that the land be in good heart when sown with grass seeds; that these be a variety of the best grasses, and that it be not kept bare by overstocking. Not only does this old pasture produce abundantly.—The milk, butter and cheese from the cows fed on it have a peculiar flavor and richness, and the beef and mutton from such pastures is unequalled by any other on the Eastern or Western continent.

John Ireland, of Dover, has purchased Pickering Lad, bred by John Miller. He also has sold Berkshire boar to John Ireland, of Nelson, and two Suffolk hogs to R. B. Ireland, of the same place.

Correspondence.

Seed Report.

THE EMPORIUM OATS.—I received them rather late, and a drouth set in which lasted a few weeks, consequently they did not yield as much as they would have done had the season been favorable. They did not rust as bad as my other varieties, black Main and Friezland oats. They are quite pure, as I hand-picked them, and have been careful in threshing them.

THE EGYPTIAN AND RED FERN WHEAT.—I sowed side by side at the same time.

I would like to ask you one question and get your opinion about a new wheat. It was raised back of Toronto, some place, and is called the Alirado. Some man has sold quite a lot in Clinton township in twenty-five bushel lots, at the small sum of twelve dollars per bushel. I have inquired, and from what I can learn, it is the same as I got from you last spring, called the Egyptian, but now sold under a new name for a sharp speculation something similar to the other rings.

P. S.—If you know anything of this great Alirado white spring wheat, let me know through the farmers' friend, the **ADVOCATE**.

Your obliged,

J. W. MOYER.

We believe the wheat spoken of must be the Egyptian wheat. As this variety of wheat is creating some talk in some localities, it is but right that we should know about it. We sent out seven 4-ounce packages to different parts of the country last spring. We give reports as we receive them. The price, \$12 per bushel, is too much to pay if such reports as the above are returned. We wish a few more would send in their reports concerning it.

The Egyptian wheat has proved a failure with me. It was not worth cutting. The grain is about as small as chess. **WM. WELSH,**
Avonbank.

Boring Machine.

SIR.—I want to get a boring machine for boring fence bunks and caps; also a machine for making fence pickets, the pickets to fit a three-inch auger hole. Boring machine to bore straight and in centre of block every time, without much trouble to operator, and to be driven by horse power. Can you tell me where I will get these machines? Also the price of them?

Yours truly,

JOHN A. CARMICHAEL,
Beachburg, Ont.

[Would some of our subscribers, who know of a machine such as is wanted by Mr. Carmichael, kindly give him the required information?]

Land Plaster.

SIR.—Please inform me through the columns of the **ADVOCATE** if you consider the artificial manure, commonly known as land plaster, injurious to land?

JOSEPH DOWD,

Dec. 6th, 1875.

[We have lately met one or two articles written about gypsum or land plaster, stating that it had impoverished the land. Gypsum is a stimulant, as is all lime, and, as such, it causes those plants to which it is especially beneficial to grow more luxuriantly, and, in consequence of their greater luxuriance of growth, to draw more largely on the plant food in the soil. This can cause no reasonable objection to its use. The more you force the soil to give the more you must return to it in manure, and the larger crop grown by aid of a fertilizer (as gypsum for instance), so much the more you have in your power to return.

Cultivation of Thorn.

SIR.—Have you any practical information for raising the common thorn from haws or thorn apples—what is the process, &c? Any information, recommendation, or otherwise, will be thankfully received.

Respectfully,

JOHN S. HARRIS,
Bartonville.

[Pick up the haws any time in the fall; keep them damp and cool; put them in a damp place where the frost can get at them, either in the ground or in boxes, barrels or in lumps. Earth should be mixed with them if they are not sown in the fall. Sow the seed either early in the spring or in the fall, in a shaded place—a well grown orchard is as good a place as any, as they require shade when young. The plants are liable to be destroyed by the turnip fly, or other similar insects, and must be shaded or protected from the destroyer when young. In a previous number we replied to a similar query. There is more than one method of preserving and sowing the haw, still they aim at the same end. As formerly stated, the usual way in Europe is to preserve them in pits, and this means serves to prepare them for growing more freely when sown in the spring. That method answers equally well here—or the more usual one, that now given, has been very successful.]

Plowing Clay Land in the Fall.

SIR.—I am well satisfied with your paper, and I consider it is well worth the money, and no farmer ought to be without the **ADVOCATE**. In one of your late numbers you spoke about plowing clay land in the fall, but you did not say whether to plow in the spring or to sow without plowing.

ROBT. SQUIRES.

[The clay land plowed in the fall generally becomes so compact before seed time as to need plowing that the seed may be mellow, and that the seed may be sufficiently covered by the harrow if it be sown broadcast. The cultivation is sometimes found to prepare the ground sufficient ly. If the ground has been plowed strong and rough, so that the heavy scores or banks of earth have been well exposed to the influence of the frost, there is the greater likelihood for the land to be less compact, and the loosening by the cultivator to be sufficient. And the soil now forming the surface will form a good mellow seed bed.]

Exhibition of Sheep.

SIR.—As you claim to be the farmers' advocate, I wish you would try and have better pens made for showing sheep. At the present time, Cotswolds, Leicesters, and Lincolns can be shown from the same flock, in fact, some may be entered in one class and shown in another. Something should be done to show the real breed of the sheep.

WM. DARLING,

Brinsley.

[Mr. Darling's remarks deserve the attention of Directors of the Provincial, and other Exhibitions.—Ed.]

The Free Grant Lands.

SIR.—As many of the good people who read your valuable paper are making enquiries of me about the Free Grant Lands and the prospects generally of the Thunder Bay territory, I deem it advisable to furnish such information through the columns of your widely circulated paper, and more particularly as you always take such a deep interest in the prosperity of your patrons as well as the country in which we live.

In reference to the above, I beg to say that I left Collingwood on the 2nd of July last, on board the steamer "Cumberland," and landed at Prince Arthur's Landing, Thunder Bay, on the 5th of July. The route cannot be surpassed for grandeur of scenery and purity of air. In passing Silver Islet, which is twenty-two miles east of the Landing, we soon arrived in sight of Prince Arthur, which has an easily approached and magnificent harbor, which is sheltered by Thunder Cape, 1,400 feet high, and Pie Island, 1,000 feet; and between these two are several other islands of considerable height. All of these islands are of solid stone.

Prince Arthur is the most prosperous and rising place I have ever seen, being only some three years old and containing a population of some 1,500; and, from the many advantages it possesses over inland towns, it must in a very few years grow to a large and important town. It is at the head

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of navigation on Lake Superior, and in the heart of one of the greatest mining regions in the world; also, the Dawson Gravel Road and Canada Pacific Railroad terminating there, the town has a bright future, to say nothing of the great importance of the farming prospects in its immediate vicinity.

I will mention the township of Oliver as the first free grant township, in travelling up the Dawson Road, which runs in a north-west direction. We pass through the township of McIntyre, which is all located as mining lands, and mostly rocky, although the land is tolerably good after we get six miles from the town; and at eleven miles the Dawson Road intersects the townline of Oliver, where it is somewhat stony, but in going south one mile we come to first-class land. The township of Oliver has an area of 40,000 acres, 35,000 of which is first-class land, the soil being all of clay loam, and being splendidly watered with spring creeks, which are swarming with trout. This township was burnt over eleven years ago, consequently the timber is extremely light, being mere underbrush, with the exception of some groves and dry swamps, where there is green timber sufficient for building and fencing purposes—when the roads are made passable for teams to take all the necessaries of life into the township. I consider the most of this land can be cleared for about five dollars per acre, and when cleared it will appear like an old farm, as the stumps are rotten and will burn up. About three-fourths of Oliver is taken up for actual settlement, and a few of the settlers have this year raised potatoes and oats on their locations. The first clearings were made this year. There is one great drawback in settling there at once; there is no leading road to intersect the Dawson Road, so it is impossible for settlers to get their families in at present, but it is to be hoped our Government will open one leading road next spring, as there has been a petition signed by the settlers and sent to the Commissioner of Crown Lands, asking for such road.

The Dawson Road runs across the north side of Oliver, and the C. P. R. is now graded through the south side, and there will be a station in the township next year when the road is opened. Oliver is particularly adapted for stock-raising, as the land is good, cheap, well watered, and abounds in summer feed, such as blue joint grass, and wild tares and peas. The tares are as well developed as our field tares, and the peas also, with the exception of the smallness of the pods and grain. The timber is all soft, with the exception of a considerable amount of birch. The township is in a valley, although it is quite rolling enough to drain well. I did not hear of more than one field of wheat being raised there this year, of which I have a sample, and it is first class, being of the winter variety. I think wheat will do well, as the snow remains on the ground all winter without any thaws. It is admitted by all who have had the experience, that cattle winter far easier there than they do in this section, as the climate is more regular and mild, without sudden changes or rains. I speak advisedly when I say that the climate is far healthier there in summer than it is here, as there is no really hot weather, and the air is thin and pure. People boast of having extra good appetites to eat. The conditions of settlement are as follows, according to the latest arrangements made by the resident agent:—A married man with a family can pre-empt 160 acres, and is allowed to purchase the same amount, to complete the half section, at 50 cents per acre; and all single men or women over 18 years of age can get 160 acres free, but are not allowed to purchase any at any price. The terms of settlement are, to clear on each 160 acres, 15 acres, and build a log house within five years after executing the same. This is a splendid chance to get good lands for nothing, as the soil is good, and being so near a rising town, with good leading road and a railroad also, and Prince Arthur is a first-class market—will always be. There is an abundance of wild fruit in the woods, and any amount of fish and game, and potatoes turn out as high as 300 bushels to the acre. Timothy hay does remarkably well there, and I saw a field of buckwheat well matured when it was harvested this fall, long after the frost had killed the potato tops down here, and the leaves were green on the buckwheat. I personally inspected the township of Oliver, so I speak from experience, and as I was brought up on a farm, and well used to clearing land, I feel that I am competent to judge of these facts. Should any of your readers want any further information at any time, I will be most happy to communicate with them on the Free Grant subject. Mr. Editor, hoping that you will not consider my long and rambling letter too long for publica-

tion in full, with best wishes for the prosperity of your excellent paper, I beg to remain respectfully yours,

L. JONES.

Rape Growing vs. Canada Thistle.

SIR,—I see in your number for this month a statement that Rape growing will destroy the Canada Thistle. It is an easy thing to try the experiment, but I think it will be found that nothing will destroy that "Curse of the Ground" but digging it out carefully or pulling them up by the roots continually whenever they appear. We are very much troubled with them in this country, and I would strongly urge on the farmers of Canada to try and keep them down at the commencement, as they are annually a source of great expense to the British agriculturist in cutting them out of the grain crops. The best means on a large scale that I have tried to effectually check their growth is to plough up the ground 11 to 12 inches deep. By so doing we bring to the surface a complete network of roots, from just below the usual plough depth. The deep ploughing is usually done by steam; the depth of ploughing with a pair of horses being not much more than six inches in this country.

JOSEPH WALKER,

The Poplars, Knaresboro, York.

Nov. 27th, 1875.

The article referred to in the above communication was selected from an agricultural journal. We inserted it merely that the method recommended might have a trial from some of our Canadian farmers. You may have seen that we did not give it on our authority. We have had some experience in exterminating them, and have found the continued ploughing, or ploughing so as to prevent their profiting by the atmospheric influence, so necessary to vegetable life and vigor, to be effectual in their extermination. If a rape crop would prevent or weaken their growth, the simplicity and cheapness of the remedy would be a great argument in favor of its use.

Agricultural.

Farming in the Provinces.

It is a long time since I have written anything for you, but it is not because I do not take an interest in the *Farmer*, for the more I read it the more I esteem it, and should feel quite lost without its weekly visits. As for writing for scientific farmers I must be excused, as there are many much more capable to instruct and explain the manner in which our farm crops should be grown and cared for, it would be a waste of time and patience for me to take up your valuable space.

I will just say that I visited, in September last, some parts of Northern Vermont, and the counties of Stanstead, Compton and Wolf in this Province; and I must say that the crops in general are good, fully up to an average. Not many of our neat cattle have gone to your New England markets this fall, but our sheep and lambs have gone to your markets and our neat cattle have been and are being worked up for European markets by the Canadian Meat and Produce Company, a branch of said Company now being in operation at Sherbrooke.

This Company is now slaughtering and canning, already cooked, from 75 to 100 head of cattle per day. It is truly an establishment worthy of investigation, to see the cattle coming in alive at one end of their spacious building and going out at the other cooked, and fit for kings, queens, presidents, nobles and all other people to feast upon.

The people in this part of our Province have never before known what it was to have a ready market for all their surplus stock, and our desires now for reciprocity with your country are growing less and less, and it will soon cost more to pay the Government officials on each side of the line that separates the two countries from each other, than all the duties they can collect; and the duties thus collected tend very much to lessen the trade with each other. I think that the farmers in these townships are now realizing quite as much from the sale of their stock as the farmers are in Northern New Hampshire and Vermont. Next year our Canadian Meat and Produce Company are calculating to work up all our surplus sheep and lambs, so that you will not be troubled about their glutting your market.—H. F., Compton Co., to New England Farmer.

Draining Stiff Clay—Steam Plowing.

Mr. Mechi writes the following note to the English papers, illustrating his confident belief in the draining of heavy soils, but showing that steam plowing leaves the land in a condition rendering it less necessary than would otherwise be the case:—

There has been (and is now to a considerable extent) a belief that under-drainage is not wanted and would be of no use in the rank loams (loams, I suppose) of certain plastic clay districts of Essex, where surface furrows and deep cross water furrows are supposed to do all that is required by carrying away from the surface the surplus rain-water (there are no springs in these clays). I have vigorously protested against this mistaken and unprofitable opinion during more than thirty years, but to a great extent all in vain. "Water won't go through our stiff soils," is the usual excuse. But here and there in places certain large farmers have repented and amended and changed their opinions, but so quiet is it kept that one never hears a word about it. When I have mentioned some of these cases, I am told, "Mr. Mechi you must be mistaken, for Mr. So-and-so does not believe in draining such soils." The fact is, certain folks don't like to admit that they were wrong and Mr. Mechi right, so the matter is kept snug, and their brother farmers are deprived of the great benefits which they might derive (from draining such soils) in a wet season. I therefore now beg of them, at our usual public meetings, to publish the fact, and thus do much agricultural good. On my 60 acres of steam plowed land no water is to be seen (despite the drenching torrents) running down the furrows or water-furrows, although so little do my folks believe in the steam plow after drainage that they persist in drawing water-furrows, which will not, I believe, be required. In fact, the steam plow (not the cultivator) so dries the stiff land that it approaches a substitute for draining. No horse or man's footmark or wheel mark, but all lightly laid, friable and well aired and dried—perhaps too lightly laid as a preparation for wheat, which folks say "likes a solid bottom."

I will not mention names, but I know of one farm of 900 acres where I believe the drainage, in a wet season, would make a difference of £1,000 at least in the "balance sheet." Nov. 9.—More drenching rains, but still no appearance of water on the sloping surfaces of the steam-plowed fields. In fact many of the drains have not been called upon to act on this stiff unctious clay. The late Mr. James Smith, of Deanston, so celebrated in Scotland as a drainer and a subsoil cultivator, told me that he once attended a meeting of the Witham Agricultural and Laborer's Friend Society, and strenuously urged the draining of these clays, but in vain; there was a want of belief, and he was coolly invited to come and try it at his own expense if he so pleased, but he indignantly declined the offer. This must have been more than ten years ago. Nov. 10.—Again torrents of rain, and at last the drains discharge (the first time this season) from the steam-plowed land, but no surface water is visible, even in the furrows or water-furrows.

Is Drainage Needed?

What are the effects of drainage? Thorough drainage deepens the soil. Of what use is it to plough deep and manure heavily, while the soil is full of water? The roots of plants will not go down into stagnant water; the elements of plant food are not all on the surface, many of them have been washed down by the rains, some of them are found in the decomposing rocks themselves. Take away the water and the roots will find them.

Drainage lengthens the seasons. In our climate this is an important point to be gained. If by drainage one or two weeks could be gained, it would be quite a relief in our backward springs, when there is so much to be done in a short space of time.

Drainage increases the effect of the application of manure; the soil being dryer is more easily worked fine, the manure is also more evenly distributed. The water also passing through the soil, carries fertilizing matter down to the roots of the plants. Where there is stagnant water, manure must decompose slowly if at all, but let the water pass off, the air is admitted, and decomposition takes place.

What observing man is there who does not know that his crops are improved in quality by drainage? Sweet English grass and clover take the place of sedge and rushes.

Desirable Grasses.

We extract the following from an essay read recently before Bailey Grange, Kentucky:

The varieties which have won our admiration, and, in our judgment, given proof of most utility, as well as adaptation to our soil, may be classed under the following five varieties. I would state in the outset, and before proceeding to a discussion of these five kinds, that it would have afforded me much pleasure to have had the means at hand by which to give at least a short history and the origin of the sorts I wish to present for your consideration. In the absence, however, of such means, I will only direct your attention to what my own experience and observation persuade me in regard to this portion of the task I have undertaken. First, the variety known as bluegrass, which we regard as one of the very best of grasses. There are three prominent characteristics of this grass that especially commend it to our favor.

First—Its capacity to yield an abundant pasture. This characteristic of the variety named is apparent to all whose attention has been directed to this matter, as it will yield rich grazing the year round, and may be almost classed with the evergreen. All this conspires to give it a very high place in our favor for winter grazing. It is a familiar fact that in what is proverbially known as the Blue Grass Region, in our own beloved State, this grass has attained a very high state of cultivation, especially for winter pasturage; while in an adjoining and sister State (Indiana), there are a number of counties in which this grass is fostered with a view to both summer and winter grazing.

Second—Its fattening qualities are conceded by all to be equal, if not superior, to those of any other class, and for cattle it has no equal among all the grasses, giving rise to the most savory of meats. Especially for milk cows does its excellence manifest itself, in the rich flow of sweet and oily cream, from which the choicest butter is made. I once heard a brother Patron remark that he had a large woodland pasture set in bluegrass, which he usually used for summer grazing; but, being advised by a friend to cut the pasture in two and keep one half of it for winter pasturage, he was prevailed on to act out this suggestion, and he remarked that he turned about thirty head of cattle on it during the winter, without having been fed any except only wheat, there was snow or sleet on the ground, so that they could not get to the grass. "And," said he, "they kept in good beef order throughout the winter." I mention the foregoing circumstance, as it is an attestation of the superior fattening qualities of this most excellent variety of the grasses. Much more might be said in this direction, but I will pass on to the next prominent feature of this variety.

Third—Its capacity to hold the soil from washing away is perhaps more than double that of any other grass. Embracing with its network of ten thousand threadly rootlets, it thus clasps almost every atom of the soil, and, when it has thus taken possession of the soil, it admits of no rival, forming a heavy, rich, green sward on the surface, upon which the gushing rains may descend and pass off, almost as crystal-like as when they first fall. Thus it may be seen that our soil is safest from the ravages of the watery elements when in the keeping of this most beautiful variety of the grasses.

The second variety we wish to present to your notice is that known as clover, of which there are several species, all of which we will class under the general term—clover. This variety has two prominent features of merit, which commend it to our hearty approval.

First—Its abundant and luxuriant growth and yield of food for our domestic animals, both as hay and for grazing purposes, for which latter it seems to be peculiarly adapted, while it is also an excellent and nutritious food in almost every stage. It has a very laxative tendency, which, perhaps, makes it the better adapted to swine, whose very constitution seems to be of a more astringent type than the others.

Second—The other prominent feature of merit alluded to, is that it is the best fertilizer of the soil of all the grasses that have ever come under our observation, as it will recuperate the exhausted energies of the soil in a shorter space of time and with more thoroughness than any other grass, which, of course, especially commends it to our favor, and makes it an indispensable necessity in the husbandman's rotation of crops. As there are many and conflicting opinions as to the proper time of sowing this variety, some claiming as early as February, while others as late as April, we can

only say that our experience teaches us that the first of March has been attended with more success than at any other time.

The third variety claiming our attention is that known as timothy. This grass has also two characteristics of merit which commend it to our favor.

First—Its hay-making qualities. This is the use to which it is most generally applied, and for this purpose it is best adapted. It is a thirsty grass, and, hence, peculiarly adapted to low and wet lands, consequently, in some districts of country where the lands are flat and swampy, this variety has received considerable attention, and in such localities has become a principal staple of commerce. This grass is an astringent, and hence, we think, for the health of our domestic animals would be much improved by the mixture of clover with it, which is of the opposite tendency; it is, however, alone, considered an excellent food for our domestic animals, especially for horses and mules.

Second—The second characteristic of this variety is its adaptation for spring and summer grazing. As it is an early grass, it will furnish good grazing in the early part of the season, and so long as the season is favorable. But, as we have said, it is a thirsty grass, consequently it cannot stand drouth; while it is a luxuriant grower when the seasons are propitious, and as we generally have more rain in the early part of spring and latter part of the fall months, hence this variety makes good grazing both early and late in the season. As to the proper time of sowing this variety, we would say that our experience persuades us that from the middle to the last of February is the best time, as we have never known it to fail when sown in the time specified, in this locality.

The fourth variety we have to present to your notice is that denominated orchard grass. We wish to say in the outset of our remarks upon this variety that our experience as well as observation is rather limited with this grass, and hence we will have to draw somewhat of our remarks from the experience of others. This variety is cultivated both for hay and grazing purposes, and is a luxuriant grower; consequently, for making hay it gives a good yield per acreage, but as it is a very coarse grass, it is thought not to be relished by the domestic animals in the form of hay with the same fondness as the varieties we have just had under review. For grazing purposes this grass is commended for two characteristics:

First—Its early appearance; in this respect being ahead of all the varieties in the spring of the year, and thus furnishing pasturage sooner than that of any other.

Second—It will grow and do better in the shade than any other grass, which feature, perhaps, gave rise to its appropriate name, orchard grass.

The fifth and last variety we wish to present to your notice is that known as Hungarian grass. This grass is of so recent introduction in this locality, and consequently to our notice, that we have but little knowledge of its merits; we can say, however, that it has won our admiration for one prominent characteristic, which is its pre-eminence in yield of hay per acreage; while it is said to be an excellent food for stock, and that they are very fond of it. It is not a perennial, and, consequently, like oats, has to be sown every year; and as the proper time for sowing this variety is in the summer months, we may calculate with some fair degree of certainty of the success or failure of the other varieties for hay purposes; we can, if need be, avail ourselves of this very prolific grass for purposes of food, and thus have our barns stored with an abundance of hay by the time the winter months shall have set in.

Farm Fragments.

BY ALEXANDER HYDE.

"Gather up the fragments that nothing be lost" is a good maxim for all men, but is especially applicable to the farmer. The income from the farm is not from a large stream, "quick and violent," as Johnson calls it, but from a multitude of little rills, all of which need attention, and if at the same time there is a multitude of little leaks, the farmer's pond may never fill up. It may seem a very small matter to gather up farm fragments, and these fragments may be insignificant, considered individually, but as the Scottish proverb has it, "Many a mickle makes a muckle."

"Little drops of water, little grains of sand,
Make the mighty ocean and the solid land."

A mill is a small fraction of a dollar, and singly is so insignificant that it is not represented in coin or currency, but mills multiplied make a fortune. Said a broker, who understood the value of fragments, "If I had a sixteenth of one per cent. of all the money that passes through my hands I should have a pile."

WANT OF ECONOMY IN WESTERN FARMING.

Fragments are more valued by the Yankee farmer than by the Hoosier, and well they may be, for everything at the East is on a comparatively small scale. The wife of a thrifty New England farmer calculates to buy all the tinware with the rags she saves. A Westerner, with his hundred acres of corn and hundred head of hogs ridicules rag-saving, but he may be assured that it is by saving these odds and ends that the East is growing rich and is enabled to build railroads to the West. A neighbor, who the past summer has visited the Western world for the first time, came in a few days since to tell us of the wonders he had seen. "I have seen," said he, "corn fields of a thousand acres, and wheat fields so large that the sun seemed to rise and set in the same field, and still the farmers did not seem to have so many comforts of life around them as we have at the East." "And what is the reason?" Why, they waste enough every year to make a Yankee farmer comfortable. They take their threshing machines out by the sides of stacks of wheat, and it was shocking to see how much grain was wasted. Then their hogs harvest their corn, or if it is stacked it is done in so slovenly a manner that corn and stalks must mould. With small barn accommodations their crops, cattle, and tools cannot be housed, and everything is so slipshod that the net income from their large and fertile farms is not equal to what we get from our hundred-acre homesteads." Possibly his picture was a little colored, for he acknowledged that the prairie was tiresome to him from its monotony, and that he never realized how glorious the hills looked till he got back among them. Still, there was too much truth in his criticism upon the slovenly manner in which the average Western farmer conducts his operations.

ECONOMY FOR FARMERS.

In these times of stagnant business, depressed prices, and scarcity of money—not in the banks, but in circulation—it behooves every farmer, both East and West, to husband all his resources and stop all leakages. Economy is the order of the day, and it is a thing hitherto little practiced by the rural population of this country, in comparison with the cultivators of the soil in the Old World. Even the New England farmer has much to learn in this respect from his more frugal German and French brethren. While pleading for the saving of all farm fragments, we must not be understood as advocating parsimony. "There is that withholdeth more that he getteth, and it tendeth to poverty." We have full faith in what the old Roman farmer, Columella, calls "The faculty of spending." This faculty is not inconsistent with true economy, which looks sharp that nothing is lost. We must confess some sympathy with the frugal housewife of the olden time, who was accustomed to have all her family take butter from one plate, and was much disgruntled at some fastidious—as she called them—visitors, who persisted in putting a piece of butter on the side of their individual plates. "Well," she said, as she gathered up the pieces, "if they must have a chunk of butter on their own plates, it shan't be wasted. They shall eat what they have left."

A PRACTICAL LESSON ON FRAGMENTS.

So much for the general doctrine of saving the fragments. To make the doctrine practical, we must be more particular and specify some of the fragments, and in doing this we shall confine ourselves to those which demand attention at this season of the year. The first on the list is the leaves. These lie scattered about every farm house, and should be utilized. A single leaf is a very small fragment, but a myriad of leaves make a big pile and are worth saving, for the double purpose of bedding and manure. They may not make so good bedding as rye straw, but when straw brings \$20 per ton, as it does in the vicinity of cities and large villages, no farmer can afford to use it as fodder or bedding. Turn the straw into money, and substitute leaves or sawdust or dry loam for bedding the cattle and horses. So far as manure is concerned, we have never found any bedding equal to leaves. The value of vegetable substances as fertilizers depends greatly on the inorganic matter they contain, and leaves abound in potash, soda, lime, and other salts, which the roots of the trees have brought up from the subsoil, and which are greatly needed on the surface soil. It is by

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means of leaves that the Great Husbandman mainly top-dresses and enriches the earth, and it is wonderful to notice how rapidly a worn out soil planted with forest trees is restored to a virgin fertility. Of course there is a great difference in the manurial value of leaves from different varieties of trees. Thus the dry leaves of the birch and oak furnish only five per cent. of inorganic matter, while the beech gives seven and the elm eleven. All leaves are rich in saline matter, and whoever has tried the manure made from them in raising potatoes and root crops of all kinds, must be satisfied that it pays well to gather them. They should be housed when dry and before they become mouldy, as in this condition they make a healthy as well as comfortable bedding, having a tonic influence on the appetite of animals.

LEAVES OF VEGETABLES.

Another fragment which is apt to be lost at this season of the year is the tops of turnips and other roots and the loose leaves of cabbage-heads. If left to perish on the ground where they have grown they may not be utterly lost, but the organic constituents vanish into thin air. The tops of roots and the leaves of cabbages have not been sufficiently appreciated as food. By carefully conducted experiments at the Albert Institution in Ireland, it was found that forty pounds of milk produced from rye grass alone, gave three pounds and five ounces of butter; produced from mangold leaves and common grazing, the same amount of milk gave three pounds fourteen ounces of butter, and from mangold leaves alone the yield of butter was four pounds. By Boussingault's analysis of the roots and leaves of mangolds, we learn that weight for weight the leaves furnish nearly three times as much muscle-forming matter. This accounts for the large size, bony frames and muscular strength of the animals that formerly roamed through our forests and browsed for a living. Gather up, therefore, the turnip tops and cabbage teaves, and by piling them up with alternate layers of straw they can be preserved for feeding till quite late in the Winter.

Many fragments of wood, the shed limbs of trees and broken boards and rails are apt to lie around the farm. They are unsightly when lying around loose, and will well pay the labor of collecting for firewood and ashes. No people were ever blessed with such a profusion of fuel as the Americans, and no nation was ever so lavish in its use and so wasteful of its fragments. We are rebuked in our prodigality in this direction when we see Irish and German women carrying bundles of sticks wherewith to boil their tea-kettle and keep themselves warm as they return home after a day of toil. It is by their frugality in this and other respects that these women manage to bring up large families and to deposit surplus earnings in the savings banks. An Irish woman once said to us, "It makes me ache to go through the woods around here and see so many branches of trees and nice chips lying around and rotting. They make me covetous and tempt me to steal." If farmers do not want their fragments for themselves they should give their poor neighbors a chance for gleaming them.

FERTILIZING MATERIALS.

There are fragments of fertilizing materials around on every farm that should be gathered at this season of the year and made to subserv the improvement of the soil. Muck is lying useless in the swamps that should be in the barnyard or the pig-pen, leaf-mould abounds in the forest that is rich with fertility, and should be in the compost-heap; the ditches should be cleaned out and the cleanings, full of vegetable and saline matter, be piled up for decomposition. The henery and the cess-pool also need cleaning and to be restrewn with some absorbent.

FRAGMENTS OF TIME.

Lastly, the fragments of time, that increase as the length of the evening increases, should be gathered up. Material improvement is good—mental improvement is better. These long evenings should not be wasted in mental inactivity. Books, newspapers, and social intercourse can make Winter evenings as profitable to the farmer as the Summer days. A full purse is a poor compensation for an empty head and a collapsed heart. "Time is the warp of life; oh, weave it well."—*N. Y. Times.*

Providing Grass Seed.

Every farmer uses more or less seeds of the different grasses and forage plants. Most of these seeds are purchased from dealers or growers, few farmers being so situated as to grow all the grass

seeds needed for stocking down pastures and meadows in the spring. The season is coming on when these seeds must be sown, if ever. It is time to look around and see where these can be procured to the best advantage, or at the cheapest rate. Both these requirements are, or must be, kept in view; it will not do to buy seeds with either object in view alone. Seeds bought at the best advantage are always cheap. They may cost a little more money at the outset, yet may be the cheapest. As an instance, the experience of a man in Western New York may be adduced. Wishing to sow a little Alsike clover seed, he consulted the catalogues and advertisements of all the regular and transient dealers. Prices ranged from seventy-five cents to one dollar and twenty-five cents per pound—the difference, fifty cents per pound, was considerable—so he concluded to send to the parties offering the seed at the lowest price. The seed grew well, but the next year several stools of the white or ox-eye daisy blossomed out finely. They were dug out, of course, but new ones have appeared every year since, from seed which have hitherto remained dormant in the ground. That seed was not cheap at any price. The same person wished to sow some more last season. He was at the trouble and expense of taking a journey of sixty miles in order to personally examine, at a large seed store, the samples of Alsike seed. The seed purchased was previously examined with a magnifying glass, and no ox-eye could be detected. This Alsike seed cost more than advertised prices, but the purchaser will probably find it cheap.

It is wise to sow the best seed and to sow plenty of it. It is wise also to buy only of seedsmen who have an established reputation for accuracy, carefulness and responsibility. The reputation of such is worth more than the profits on a whole season's sales, and of course their goods can be relied upon. They also have a direct interest in selling only the best seed, since usually the result of such sales are "a standing local advertisement" in every section where sown.

It is necessary to sow plenty of seed. Ten cents saved in seed results usually in a dollar lost in the harvest. No one has ever reported that he had sowed too much seed. All errors have invariably been made the other way, so far as known. If the "penny wise but pound foolish" course—that of sowing as few pounds of seed is followed—the hay crop will be quickly gathered, and in winter soon be gone. Just as much seed must be sown as will stock every square inch of the ground with at least one growing plant. This will take more seed than just the number of square inches of surface in the field. Four or more times this amount should be provided, for much is inevitably lost. The seed should be scattered lavishly enough to secure a good stand, if it takes a good half bushel of seed to each acre to be seeded down.

Green Manuring.

Green manuring is a term under which is comprehended the application of plants and vegetables in a fresh state, as manure, but it is especially applicable to the system of plowing in certain crops, cultivated expressly for this purpose. This is a practice of very ancient date, but it fell into disuse on account of the facility with which other manures can be procured. It is a practice, however, from which much benefit may be derived, especially on soils that have been scourged by repeated cropping, without adequate manuring. But, although it has always been found to be an excellent method of temporarily enriching land, it is not sufficient, of itself, to keep up the permanent fertility of the soil.

The reason this is the case is that plants, especially such as penetrate the soil to the same depths, draw up those inorganic ingredients which had either sunk or naturally existed at a certain depth in the soil, and place them near the surface and within the reach of other crops when the plants are plowed in. But by the constant practice of green manuring, the inorganic food contained in the subsoil becomes gradually diminished, and ultimately the supply of such food becomes exhausted, both in the surface and subsoils.

Although green manuring may be occasionally of great service in drawing up inorganic food from the subsoil for the benefit of succeeding crops, yet other manures must, from time to time, be applied; otherwise the soil will become barren. When this system is followed, the plants, such as clover, buckwheat, etc., should be plowed in before coming into full flower, because the flowers give off

nitrogen; consequently when the operation of plowing is delayed until the plants are in full bloom, a considerable portion of this important constituent is lost. The depth of furrow should not exceed four inches, so that the air may have access to the plants, to promote their decomposition, but at the same time they must be properly covered to prevent any of their constituent parts from being lost.

The most important mode in which soils are enriched by the addition of vegetable matter, and which, from its effect on the soil, exceeds all others, is the laying down the land to grass, etc. It is well known that soils which have become impoverished by a continual course of cropping, conducted in an improper way, have their fertility restored by being laid down to pasture, and even those soils which are under a proper system of management, and have a liberal supply of manure allowed them, and a liberal course of cropping followed, are still much benefited by being laid down for two or three years in pasture.

The general opinion is that the good results of laying down land to grass for pasture are produced by the droppings of the animals enriching the soil, but the real cause is, probably, the large amount of organic matter added to the soil annually by the death of the roots and stems of the grass, and the decay of the roots when the field is plowed up for tillage.

Experiments have shown the large amount of vegetable matter contained in the roots of grasses, and that different varieties of grass, etc., vary considerably as to the amount of matter derived from them. It has been found that in old pasture or meadow, broken up, the living roots left are equal to four times the weight of that year's hay crop. If a ton and a half of hay have been mown, then about six tons of vegetable matter remain in the soil in the form of roots. If a field of clover is plowed up at the end of the second year, the quantity of vegetable matter left in the form of roots is equal to one-half of the whole hay that the clover has yielded.

It is a general rule that whatever causes an increased produce above ground, will cause a corresponding increase below the surface, in the shape of roots. Thus, nitrate of soda, which produces a large quantity of hay, also causes a great increase of roots, which, when plowed in, have a beneficial effect on the succeeding crop. The burying of vegetable matter in the soil is one of the ameliorating operations of nature, from which man has copied the practice of green manuring.—*E. M., in Western Rural*

Queen Victoria as a Farmer.

There are three separate farms within the precincts of Windsor Forest—the Norfolk, the Flemish and the Prince Consort's Shaw Farm. The last mentioned is the Queen's favorite, though a large amount of capital has been expended upon the other two, and most of the stock which have won prizes at the recent agricultural shows are kept on them. The Shaw Farm consists of about 1,100 acres, more than nine-tenths of which are in pasture, nearly all in a ring fence. This is said to be as fine a specimen of a grazing farm as one could wish to see. Extensive operations are in progress for conducting all the sewerage of Windsor out to a farm a mile and a half distant. The farm buildings are convenient and well-arranged. The foot-and-mouth disease, which is quite as disastrous among royal cattle as among any others, has been so prevalent on this farm that no stock from there has been exhibited. The royal dairy is a gem. A large sum of money is represented in the majolica and mosaic of the walls, which are studded with medallions of the Queen, the Prince Consort and their children; the double roof and triple windows, the inner window being of stained glass; the milk pans in white and gold, and the curious inlaid floor. The butter made here is sent daily to the Isle of Wight and to Scotland three times a week, when the Court is there, and fruit and vegetables are sent at the same time. Among the bulls kept on the farm is King Coffee, an Ashantee bull, brought from Cremassie, and valued only as a curiosity. The poultry house near by contains some gold and silver pheasants, a few Andalusian fowls, and some Scotch greys. In the centre is a little cottage where the Queen used to take her 5 o'clock tea. The laborers on the farm are paid 14s. a week, but house rent, fuel and other advantages make their wages equivalent to a pound a week, and some of them have as much as £20 laid by.—*From our Exchanges.*

Stock and Dairy.

Steaming Food For Cattle.

Next to the use of commercial fertilizers, perhaps, there is no question that is of greater interest to the majority of the farmers of New England, or the country generally, than that of the preparation of food for stock. Food is the one great item of expense in the keeping of all our domestic animals, and if, by any means, this expense can be reduced without diminishing the growth, condition or products of the animal, a clear saving may be obtained, provided the cost of the means used is not greater than the value of the food saved.

Cooking has been recommended as an economical method of preparing food for swine. Ever since we were familiar with agricultural books and papers, many tables and experiments have been published, showing the great saving obtained by the practice, and yet we have never been convinced that it would be profitable to cook the food for our own hogs.

We have, like others, had our opinions and prejudices, and, perhaps, hold them still, but we do not like to induce others to pin their faith upon our opinions without sufficient investigation on their own part. Steaming fodder for cattle is a practice which seems to be rather on the increase, at the present time, among that class of farmers who have made the greater portion of their money at other than agricultural occupations, and have taken up farming partly as a means of enjoying their wealth, and partly for experiment's sake.

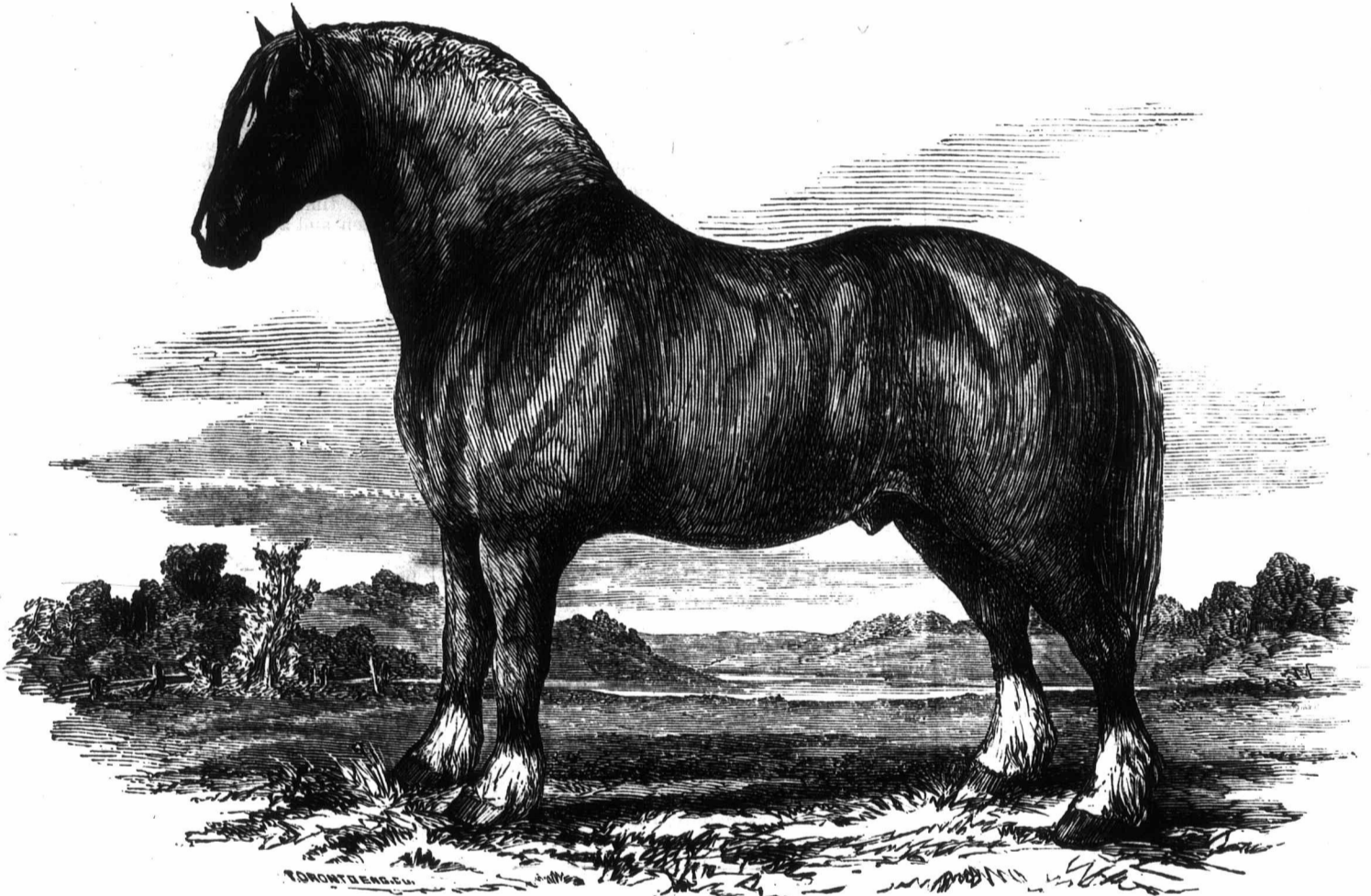
Such men aim to draw around them all the modern improvements, and sometimes they are entitled to be classed as practical farmers, for it is certainly practical to use good tools instead of poor ones, and to keep good breeds of animals instead of the diminutive, ill-bred and ill-fed scrubs too often found on the farms of men who consider themselves practical farmers.

But the "fancy" farmers, as they are often called, do not, as far as we have observed, generally intend to fool away money in the management of their rural affairs. If they keep Jerseys, or Ayrshires, or Shorthorns, it is because they expect to obtain more profit. If they cook the food for their swine, and steam the hay for their cattle, it is not

to the best in the country or in the world, if we may judge by the prices set upon them. The fodder, made up of chopped corn stalks and hay, and several varieties of grain, is all mixed together and cooked in two huge iron cylinders until the whole mass is nearly as soft and homogeneous as a pudding. At the time of our visit the daily ration was made up in the following proportions:—Cut fodder, 525 pounds; cut hay, 175 pounds; corn meal, ground in the barn by the same steam that drives the hay cutter and cooks the food, 96 pounds; cotton seed meal, 105 pounds, and wheat bran, 114 pounds. This quantity gave an allowance of two bushels per day to each animal, costing, with the addition of one daily feed of 5 pounds of dry hay, 21 4-6 cents per head, which, at that time was considered very low.

One of the cows gave, in one month, 1,200 pounds of milk, and in one year, being in milk eleven months, 9,200 pounds; and one of the calves fed on this kind of food, in part, weighed, dressed, at thirteen months, 547 pounds, which indicates that such food makes both flesh and milk in abundance.—*Exchange.*

NOTE.—Oil Cake may be substituted for cotton seed.



CLYDESDALE HORSE—PRINCE OF THE WEST.

The answer to this question of raw or cooked food must depend very much upon the conveniences for cooking, the number of animals kept, and the cost of the labor of those attending them. With cheap labor, cheap fuel, and suitable apparatus, all duly apportioned, we have little doubt that cooking and grinding corn for feeding hogs would be a profitable operation, but if the mill were many miles away, the roads muddy or otherwise unfavorable for travel, fuel scarce and dear, and the time of the attendants valuable, while the raw corn was worth little more than coal or stove wood by the bushel, we should have no hesitation whatever in deciding that raw corn was cheaper food for swine than cooked meal.

So upon the question of steaming fodder for cattle, very much also depends upon circumstances. Within the past two years we have received numerous letters from our readers, asking our opinion about the practice of steaming the hay and other fodder given to cows in winter. But as our investigations in feeding stock had not been in that direction, we have not felt competent to express even an opinion upon a subject which, while being so thoroughly investigated, can count such able contestants on either side.

wholly for the name of it, nor for the impression it will make on their less fortunate neighbors, but it is usually because they have firm faith in the economy of the practice.

That we might be better able to judge understandingly of the merits or demerits of the practice of steaming hay and other fodder for cattle, we have, within the past few months, taken pains to visit several farms where steaming was practiced, and have also questioned pretty closely many gentlemen known to be strong advocates of this system of preparing food for stock.

The most extensive steaming works we have seen are those of Mr. Augustus Whitman, of Fitchburg, Mass. Everything about the farm buildings here is finished in the most substantial, liberal, and, we might perhaps say, elegant style. The barns are ample, new, well painted and covered by slate roofing. The inside finish is designed to be perfect in every particular, and each department is kept as neat and tidy as a first-class work shop, and much more wholesome than thousands of dwelling houses that may be found, either in city or country.

The stock is nearly all of the shorthorn breed, and in the herd are animals none, if any, inferior

Prince of the West.

The above cut, executed by one of our artists, is taken from a drawing from life. This animal is one of the finest of the Clydesdale class of horses we have in Canada. He has taken the first Provincial and upwards of thirty prizes, and has gained the special prizes of £40, £50 and £60 at the Paisley and Glasgow. He was imported by Mr. W. Thompson, of Pickering; was sold at the great cattle and horse sale held in Toronto, on the 3rd and 4th of December, and purchased by Mr. W. Long, of Lansing, Ontario, for \$2,450. Such animals as the above are of great value to our country, as the great excitement that has been spread over the country in regard to blood horses has caused the farmers to raise a class of horses that are too light. If the number of our horses was decreased one-fourth, and the weight of the general stock of horses increased one-fourth, we believe it would be much to the advantage of our country. Farmers, let us hear from you on this subject. Who will take part with us on this question?

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The Naturalist.

THE ELK.—III.

Since the elk has ceased to be found in his native majesty and hunted as a wild animal, "elk-hunting" has lost all its interest with the sportsman, and when we say that the chase of no other animal is, after all, from first to last, so full of interest as that of the elk, the sportsman has some cause for regret. The hunting to death of the elk is by no means an easy task, as might be supposed from the bulk of the animal, for he knows how to foil pursuers perhaps as well as or

better than most other wild animals. The accompanying cut represents one of the noble animals that formerly occupied the farms on which you reside. He is seen struggling against his destroyers. The wolves, in hot pursuit, have chased him to the frozen river. Their not being quite sufficiently strong to bear him, has broken. He raises his front feet again, endeavoring to extricate himself. The treacherous ice gives way beneath his weight, and still he struggles. The wolves are watching the result. Certain death awaits him. Should the exhausted animal reach the shore, the hungry wolves are awaiting to devour him. In viewing the picture, we notice that one of his antlers has been broken in a previous struggle. There may be yet a few of these animals remaining in some parts of our vast domain. The last one heard of, was three years ago.

Three were killed in the State of Michigan, and the head of one was brought to this city. They are a timid animal, very difficult to be approached by man, unless he has a small dog, from which it is not apt to run. Should the dog bark, it will watch him with great interest. At such times he may be taken the advantage of, and shot, as the barking dog absorbs his attention. We have one of the fine old elk horns in our verandah, which we prize for its antiquity. It was found near our farm about thirty years ago. It was then in a partially decayed state. It remains in about the same state of preservation as when found. The elk is generally captured in winter by hunters mounted on snow shoes, which enable them to skim over the surface of the snow, while the elk breaks through

at every stride. The tongue and nose of the elk are much relished by epicures, especially the latter, which is said to resemble marrow. The hair is of a coarse nature, and brown towards the end. For heavy work, such as tent-covers, &c., the skin is invaluable. Such a scene as our engraving exhibits, no doubt suggested to the mind of one of our eminent poets the following beautiful lines:

"He stands at bay,
And puts his last weak refuge in despair.
The big, round tears run down his dappled face:
He groans in anguish; whilst the growling pack,
Blood-happy, hang at his fair, jutting chest,
And mark his beautiful, chequer'd sides with gore."

Do you use dogs and stones to hurry up the cows from pasture at milking time, thus overheating their blood and bruising their udders?

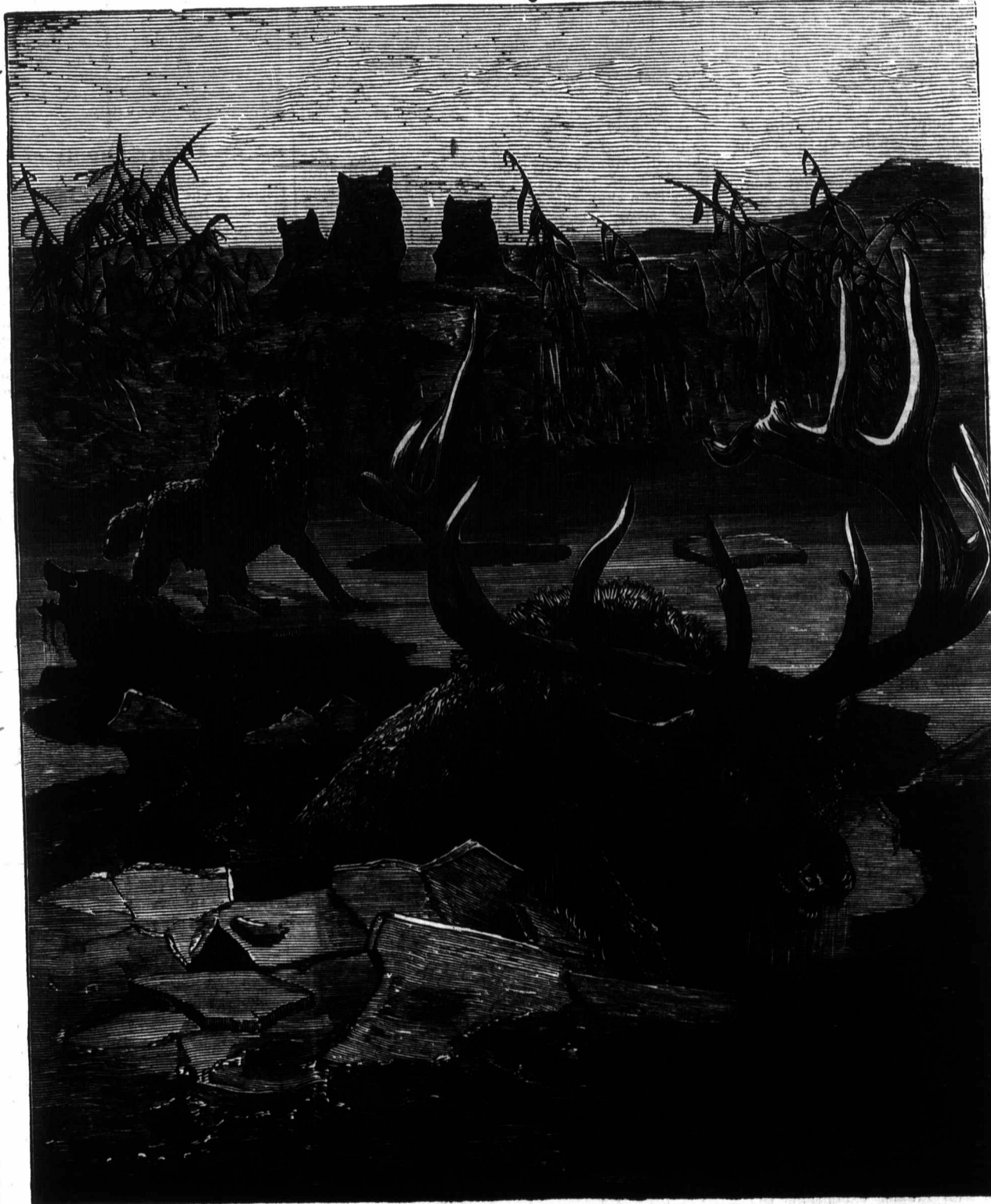
Do you cleanse the udders of cows before milking by washing their teats with their own milk, and practice further economy by allowing the droppings to go into the milk pail?

Do you enjoin upon your milkers to wash their hands thoroughly before sitting down to milk, or do you think that uncleanness in this respect is not important for milk that is to be treated for butter making?

When a cow makes a mistake while being milked, do you allow your milkers to kick her with heavy boots, or to pound her over the back and side with a heavy stool, accompanied by sundry profane remarks addressed to the cow to teach her manners?

Is the air about your milk barn or milk house reeking with the foul emanations of the pig sty, the manure heap, or other pestiferous odors?

Good, fresh, clean water, and in abundance, is one of the most important requisites for milch cows, and it should be in convenient places, where stock will not be required to travel long distances to slake their thirst. If springs and live streams cannot be had in pastures, a good well, with windmill and pump, makes an efficient substitute, and the waste water may, if necessary, be conducted back into the well, so as to make up a constant supply of good fresh water. —Ex.



Questions for Dairymen.

Every dairyman should have a printed list of questions posted in some suitable place on his premises, where his family and those in his employ, as well as his visitors, will have opportunity to read frequently. We give some of them, but the list can be extended:—

Do your cows feed in swamps and on boggy lands?

Have you good, sweet running water convenient for stock, and is it abundant and permanent in hot, dry weather?

Have you shade trees in your pasture, or do you think that cows make better milk while lying down to rest in discomfort in the hot, broiling sun?

FOOT AND MOUTH DISEASE.—The English papers notice the spread of the foot and mouth disease among the dogs in the neighborhood of Thirsk, Yorkshire. The disease now seems to be spreading among the shepherds' dogs. One farmer states that his dog caught the epidemic through being worked among a flock of sheep which had the disease. Lord Hampton gives a recipe for the treatment of the disease:—Mix one ounce of chlorate of potash in a quart of warm water; add one tablespoonful of camphorated spirits. Give this dose three successive mornings. This is most successful if given the moment the disease shows itself, and, moreover a wonderful preventative.

DURING the year the treasurer of Marshall Co., Ind., has paid out \$570.66 for sheep killed by dogs.

What I Know of Long Wools.

What I know of long woolled sheep, and short wools, coarse wools, or fine wools, is that neither will thrive and be profitable except they are provided with proper food to develop their qualities.

Care is the first essential quality in a flock-master. He should see his sheep every day in the year. During the pasturing season he should salt and count his flock twice per week, and see that none have the scours. If there are any so affected, they should be removed from the flock and fed on dry hay and oatmeal for a couple of days. During heavy rains sheep should be provided with shelter, either sheds in the pasture that the sheep can use at their own pleasure, or, when sheds are not provided, the sheep should be brought to the stock barn and housed until after the storm. When grass begins to fail they should be fed either sowed corn, pumpkins, roots or grain.

It is poor economy to allow sheep to half starve and lose flesh in the fall. From October 1st until January is the trying time. If well cared for during that period, ordinary care will keep them doing well the rest of the year.

When the hay is harvested the clover hay should be cut in the blow, well cured, so as not to must, and put in the barn or where it can be got at any time, and turn in the sheep.

When the sheep are brought in for wintering, feed them the clover hay until they are wanted to eat hay; then clover hay can be fed to them once per day. They should also have a daily feed of oats, at the rate of one quart to every ten sheep for fine wools and double that for coarse wools. A box that will hold a peck or more should be fastened in the shed low enough for a sheep to eat from easily, and fine salt kept continually in it, never letting the salt get used up. It will need replenishing every few days.

When the winter has well set in and the sheep have acquired good appetites, add to your oats one bushel of peas to three bushels of oats for breeding ewes; for fattening sheep corn is better. Corn should never be fed to breeding ewes; it has an overheating tendency and produces a congestion of the bowels in the lambs; thousands die every spring from that cause alone, that might have been raised if the ewes had been fed peas instead of corn.

Provide water in the yard that the sheep can have access to at any time of the day. Do not compel them to quench their thirst by eating snow; it is cruel, niggardly and poor economy.

Be kind to your sheep; use no loud and boisterous language nor allow others to do so. Never frighten them. Treat them kindly and they will show an appreciation of it and will pay you in wool and mutton more than an hundred fold.

Study the habits of your sheep. Learn from them what they want and provide for their wants intelligently, and do not rest content until every lamb can be raised and every sheep produce for you the most and best staple of wool of which it is capable. Then when you have attained that perfection, jot down your experience and give it forth to the world to guide others in their attempts; and, though they may reach a still more exalted position, you will be conscious of having performed a duty and be remembered as a benefactor of mankind.—*Miles H. DeLong, in Rural New Yorker.*

Progress in Breeding Shorthorns.

We have often heard the question asked, whether the Shorthorns of the present day are really any better than they were half a century ago, or when they came from the herds of Bates and Booth and Colling. We suppose the general average of the breed ought to be taken into consideration in considering the question. It is hardly fair to fix upon remarkable individuals, exceptions to the general rule, and to form an opinion from them.

At a recent sale of Shorthorns in England, a small party of Shorthorn fanciers got together to protect themselves from the rain, when the merits of their favorites very naturally occurred to them. Mr. Finlay Dunn, with that practical turn of mind for which he is pre-eminently distinguished, raised an enquiry which, however, only one or two in the room were competent to venture an opinion on, viz., whether the far-famed animals, which were bred at Kirklevington, Warlaby and Killerby, by Mr. Thomas Bates and Messrs. Richard and John Booth, were intrinsically better than the *creme de la creme* of present herds?

The question was answered in the negative, the general opinion being that however beautiful the symmetry and form were the outcomes of those days, they are to be fairly matched, if not absolutely excelled, in some of the best specimens of the breeding of the present day. We are inclined to consider this conclusion correct, although undoubtedly at variance with the common impression, which is, that there was at one time a sort of golden age for Shorthorns, whereas now we have only to do with the silver or copper age. The truth is, however, that the famous beasts of which we have such glowing descriptions in the writings of Carr and Dixon, were made what they were by great care, judgment and skill having been bestowed on their breeding and management. The same herds which produced them had failures, blotches and defects, the animals we read about being only their primest fruit. It is true that the late Richard Booth had at one time developed his Warlaby herd to such a high pitch of perfection that almost every heifer calf was tolerably sure to make a good show-yard animal, and every bull calf to be coveted by at least a dozen breeders. But these distinguished Warlaby cows and bulls did not fall from the skies. Nothing appears more clear than that the Booths, in the early part of their career, bestowed an amount of pains in the careful selection and skillful breeding of their stock almost unparalleled, and to that the high state of perfection to which they eventually brought the Studeley, Killerby and Warlaby herds was attributable entirely, and the admirable foresight and superior judgment with which they were undertaken.

And at Kirklevington it was just the same. Thomas Bates' stock are at the present day only the tip-top of fashion because he, their great originator, was so very scrupulous in his selections and matchings. We can readily excuse unbounded faith in Duchesses derived from a system so exclusive as he pursued, the result of an insight so extremely critical and fastidious. He seems to have acted on two grand principles throughout: First, a close alliance to very exclusive strains of pedigree; secondly, the discardment of every weed and faulty product, however well bred, without favor or affection. And if herds now-a-days do seem to compare at all unfavorably with those of a past generation, herein probably lies the true cause. Very few owners of high bred stock would now venture to insert the incisive knife so often, or make it do its work so effectually as Thomas Bates did. The prodigious prices which fashionably bred cattle command forbid it; while prices in this respect are certainly a great evil, as they afford irresistible premiums for the preservation of every defective product of the families which enjoy the highest reputation.

But it may be asked: Is it possible to match, at the present day, those paragons of beauty, symmetry and good quality which delighted the eyes of our fathers in the first years of the Royal, when John Booth's Necklace and Thomas Bates' best Duchess were placed in competition, and the famous Bracelet of the former was making her stirring show-yard career? or, consequently, when Richard Booth brought out his famous Queens, one of whom, viz., Queen of the May, is said, in the fascination of her beauty, to have so completely ravished two American gentlemen that they offered 1,500 guineas for her at a time when such a price for a cow or heifer was utterly unknown. Only those are competent to reply to such a question who frequently saw those far-famed animals, and have a perfect recollection of them, consequently the question is unanswered; but at the same time there appears no reason why the perfections of these beautiful specimens of the past may not be equalled by the same care, skill and good judgment which were exercised in his productions, being again applied. The tendency of development throughout all animated nature appears to be upward instead of downward; animal life is progressive, not declining, and modern breeders have far greater advantages than their predecessors in being able to commence their labors at a more advanced point, by being able to propagate from this grand foundation sorts bequeathed to them.

There are as good fish in the sea as ever came to net yet; and further, they have in the show-yard at the present day certain animals which would compare well even with those famous beauties which Carr has well nigh immortalized. Nor is this mere surmise or theory, for in the Rev. R. B. Kennard's Queen Mary we may undoubtedly find a rare specimen of the breed, whose merits it is hard to conceive could have been surpassed by any Queen or Blossom ever brought out from Warlaby.

This beautiful heifer is, indeed, well-nigh faultless, and as near perfection as the most critical eye can form an ideal. Straight, broad, level in form, with a handsome head and exquisite general contour, she is as fascinating and grand in appearance as her good handling and healthy condition prove her to be in rare quality. If the herdsman who has her in charge may be credited, her excellent plight and affluence in flesh are not at all attributable to high feeding. Hardihood and vigor of constitution are certainly among her characteristics, and, as is often the case with the best high bred stock—she exhibits an extraordinary tendency to lay on flesh and grow fat on common food. No one has a right to declare that the art of Shorthorn breeding is at all declining while such a splendid animal as Queen Mary can be brought to the fore. There is in this respect, as in all other matters of history, a tendency to magnify the past at the expense of the present, which facts and evidences do not justify.—*Mass. Ploughman.*

Future Supply of Hogs.

The Cincinnati *Price Current* finds that the statistics of the hog product show a decrease of six per cent. from 1873 to 1874, and thirteen and a half per cent. from 1874 to 1875. This, it says, undoubtedly points to a falling off in the number of hogs for the approaching winter packing; but such a result does not necessarily follow such presentations, and in our opinion it is possible that the close of the coming winter will find not only the number, but the weight, fully up to last season, especially if high prices should prevail for hogs, sustained by a justifiable demand for the product, or by competitive rivalry of packers.

The price of corn in Chicago is 26 cents per bushel lower than a year ago—and sellers, option the year is over 20 cents below the cash price at the close of last year. It costs as much to transport corn to market when saleable only at a low price as when at a high price, and the inducements to convert it into other products is enhanced as the price goes down in the scale. The crop of corn is known to be enormous throughout all the hog producing sections; the most striking illustration of this being the State of Kansas, which last year produced 16,000,000 bushels, and this year is reported to have 55,000,000 bushels surplus. This corn will find its way to market in the form of pork—possibly not early, comparatively, and the later it comes the more there will be of it.

The number of pigs which have been carefully nursed for feeding upon this year's enormous production of corn, since the swine census of January and April, does not appear in any available statistics, nor to the naked eye. Nor is it to be taken for granted that because there is a good demand for stock hogs by feeders, and high prices being paid, the number is short—rather, that the food supply is excessive, and that the hog is considered the best medium for utilizing it. And the higher the price paid for these stock hogs, the later and heavier may they be expected in market to enter into making of a longer crop than can possibly be figured out by statistics.

The summer curing process is to a considerable degree revolutionizing the business of packing pork. No longer does the winter's business measure the extent of the yearly crop of the product. It matters not whether the pigs now in the country shall appear in the count on the first of next March, or later if they come into market in competition with the product of those earlier slaughtered.

Diarrhoea in Young Pigs.

An eminent writer on this subject, M. D. Mulford, M. D., in the *American Swine and Poultry Journal*, says:—Many of our swine-breeders in the West sustain considerable loss annually by their pigs dying from the effects of what is commonly called scours, caused by the bad quality of the sow's milk. The disease is more apt to make its appearance when the sow has been fed upon dry corn or musty food. It generally attacks them within one or two days after their birth, and seldom after eight or ten days. I have never failed to cure this disease by giving the sow as much sulphur of the third decimal trituration as will stand on a nickle five-cent piece, once a day. It may be given in a little sweet milk or upon a small piece of bread, and should be given one hour before feeding. The medicine can be procured of any homoeopathic physician. I have cured many cases with common sulphur, but prefer the above.

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Sheep Raising.

We give below an extract from the *Iowa Live Stock Gazette* on this important subject. The increased attention paid to sheep raising by American agriculturists should stimulate us in Canada to more attention to it as a source of national wealth than we have given to it heretofore. Our soil and climate are better suited for feeding mutton and producing the most valuable wool than any other country on the continent. It is not necessary to tell our readers of the great profits derived from a sheep farm. Mutton is no longer sold at prices ruinously low. It is now in good demand at remunerative prices. Wool also has been selling very well. Not only are the pastures of Canada well suited for feeding sheep, but we can keep them through the winter months in good condition, the soil yielding the best root crops and an abundant supply of the straw of the peas, for which the country bears a high name in England as well as America.

While we have reason to impress upon the farmers of the country the hope of a suitable market for their product of wool and mutton, we would at the same time lead them to the consideration of the fact that they must pay such attention to the rearing of the sheep as will enable them to compete most successfully with the world, and this they can do without any great degree of skill being required, or any very heavily increased expenditure in the formation of their flocks. We have before intimated that upon the character of the breed will depend the main success of the raiser, and the localities, whether suitable for the manufacturer or the shambles. But we must also take care to provide for the proper nourishment of the animals, by procuring the proper grasses and roots with which they are to be fed, without these helps it being useless to expect that full realization of profit which should be the basis of all our calculations. Wherever orchard grass, clover, and blue grass can be grown, and if properly cultivated (when is it that they cannot be?), the more robust, large and healthy will be the sheep, and the greater their prolificness, under proper care. In addition to the grasses, the provision of roots is not less desirable; in fact, in England the great success of sheep husbandry is due mainly to the use of the turnip, and the application of science in breeding from the most improved types suitable for their particular purposes; there, however, their great object is for meat, and the larger portion of the raw material required for their manufactories is received from Australia and other of their distant colonies. At home they have not the room, as we have, to raise all their supplies, hence the enormous quantities used are necessarily brought from a distance, while the reverse is the case with us, as we have immense tracts of waste lands which, it can be said, are fit for nothing else than the rearing of sheep.

One of the advantages of raising sheep on the cultivated farm is the killing of briars and weeds, which they more effectually accomplish than by any other means; another, the value of their manure when they are properly herded; and still another, the cheapness of transportation of the fleeces to a distant market, in comparison with grain and other heavy products, from many sections of the country.

An English farmer, reputed of great experience in the management of sheep and pastures, in a paper upon the subject gives the following advice: The housing of sheep at night will rob the soil of all the dung and urine voided during the night, which will be a good deal, for when I was a boy there were thousands of acres in every county in England which were well manured for wheat by folding the ewes during the night over the fallows in the months of August and September. There are two other considerations. All pastures intended for lying permanently in grass are benefited by being grazed by other stock as well as sheep; while, at the same time, sheep will do very much better if other animals graze with them, or alternately; but, as probably you prefer to keep the flock in one pasture, you should move them into another field for a week or two at a time, or say every other month, and put cows and horses, or colts and calves, on the said seven acres the while the sheep are away, and you will be struck with astonishment at the better thriving of the sheep in consequence of this change, for no animals

do well long when they have no grass but that which is stimulated only by their own droppings. As the blue grass is established, and as white clover always comes on well-grazed land, and such grasses as are natural to the soil will also keep filling up all the spaces not covered till there is one continuous thick mass of herbage, there will be no necessity for sowing any grass seed. But if you would like to sow any, you had better wait till next year, because the aftermath of last autumn will be somewhat in the way; and next spring (1876) some compost of mold and rotted manure might be spread on the surface, and some orchard grass, clover seed, and other varieties suitable to the soil could be bush-harrowed and rolled in as soon as the ground is in condition to have it done.

It does not injure the best grasses on any permanent pasture to graze close; for those varieties which will not bear to be eaten down may as well die out and make room for those that will thicken into a perfect mat like the sward so often met with in England, where there are as many as seventy distinct varieties growing on any square yard in a field. By paying more attention to our grass fields we can make them pay interest on a valuation of \$100 or \$200 per acre. Fill up every inch of surface with some perennial plant equal to blue grass, bent, or meadow fox-tail for grazing purposes.

How Long to Milk Cows.

Some cows settle this question for their owners, and such, unless they are fine, large animals, and calf raising is the chief use of the cow, should be fattened and killed at four or five years old, or sold. As a general rule, it is a poor cow that does not need to be dried off before calving. As to how little milk pays for the trouble of milking, that depends upon the number of cows and the amount required for family use or for sale. It will pay to milk every cow that will average two quarts a day; if less than that quantity is obtained, I would advise to sell off the cow.

The practice of half feeding dry cows is a poor system. All cows that are worth keeping should be well kept; and any animal with young should be as well fed as when giving milk, though the food need not be so rich or oleaginous as when the milk is set for cream or used for butter-making. The rapid taking on of flesh at this period is an indication of sound health.

If you expect to have a fine calf, stop milking at all events six weeks before the cow will come in again. Some cows will give milk the year round if you allow them, and it is hard to dry them before they make bag anew, but this should always be done. It will be found profitable to feed cows well, and curry them twice a week thoroughly.

A New York Prize Dairy Farm.

An account is given by the *Utica Herald* of the farm formerly owned by A. L. Fish, on which he secured a yield of 846 pounds of cheese per cow in one year, and from which trade in cheese with England is said to have begun. It is now owned by a son of the former proprietor. It now contains 160 acres of open land, and 30 acres of timber. Especial pains have been taken to destroy all weeds. The *Herald* says:

We were interested also to learn Mr. Fish's system of cultivating his grass lands. He does not agree with those dairy writers who advocate permanent pastures. There may be certain favored localities where a permanent pasture will sustain itself; but he believes this is not the rule. He believes in the cultivation of grass lands, and when the soil becomes packed and fixed he would break it up, pulverize it as much as possible and make a good bed for re-seeding. And when he does this, and applies the manure and turns under the old sod, rich in manurial qualities, he does not believe in exhausting this richness by rotation of cropping before putting down to pasture again. He will take off one crop of corn or grain, in order that the soil may have a chance to lighten up and the old sod a chance to rot. But when this enriching reaches its best estate, and before it is exhausted, he puts in his grass seed again, and it finds the soil in the best condition for sending down grass roots to reach a deep foundation. Mr. Fish regards grass as a crop of itself and cultivates it as a crop. In this respect his practice is worthy of the imitation of many of our dairy farmers. He does not look upon grass as a cloak to cover exhausted soil. The result is that his fields look rather like fresh meadows than like the common pastures of the country.

As Mr. Fish does not believe in exhausting the goodness of the soil before seeding, so he does not believe in scalping it after the turf is fixed. He does not practice close cropping either with grain or with teth. Instead of overstocking his fields, he believes it more profitable to get the returns from fewer well-bred cattle and leave a covering on the ground for the protection of the grass roots and the enriching of the soil. There is one way to measure the profit of this practice with cultivation of grass lands and temperate feeding from them, that is, by experience. When the senior Mr. Fish took the land from his father, all the stock kept upon the farm was twenty-five head, counting in the working animals, and the yield of grain and winter feed only filled parts of two small barns. Now the farm furnishes summer and winter keep for seventy animals, and while it has been improving to this extent it has yielded from farm profits actual cash amounting to three times its value. This result has been attained by the system of cultivation and by the careful preservation of such manurial material as has been produced upon the farm. No commercial fertilizers have been purchased, no money except in plaster and labor has been given to the soil. The secret has been in a system of culture which has made the land better and more productive, and at the same time profitable in a business point of view. This is one of the secrets of success in farming, and if it had been more widely understood and applied we should not now have so much complaint that the farm is unprofitable, and we should not have so many strong young men languishing in overcrowded professions. The farm has not had a fair chance with the other business enterprises. It has not been tried often enough for all there is in it. But there is promise now, as better counsels are prevailing, that a more enlightened system of agriculture will become general.

The spirit of enterprise is everywhere apparent upon the Fish farmstead. The proprietor, Mr. Irving Fish, has now the complete charge and direction of affairs, and is bringing the strength and acumen of his manhood to the success of the farm. The dairy is in a promising condition. The start was gained from a fine lot of grade cows selected for their quality as milkers by the elder Fish. The present proprietor has introduced an element of improvement in the purchase of a thorough-bred Ayrshire bull. The cows are as fine a lot as we have seen of late. The buildings are being improved and extended. Mr. Fish has now nearly completed a capacious barn, which, with the space of connected buildings, will give him stanchion room 120 feet long. The upper stories of the barns are also connected, and the whole arrangement is admirable for convenience in the storing of forage and distributing it to the cattle. This barn will not cost its proprietor more than \$300 for purchased material, and, with little assistance, he has done the building with his own hand. It is an achievement to be proud of, and it will add much to the pleasure and profit of the farm.

American Cattle in London.

Much interest was created in the live cattle market yesterday by the presence of saleable fat beasts from New York. Considering they had journeyed about 3,000 miles by sea, and that on their reception at the Port of London they were very rudely treated, they were in marvelously good condition. The cattle arrived in the docks on Monday, all sound with the exception of one, which had suffered severe butting and bruising. The Inspector declined to allow any of them to pass until he had examined the one that showed symptoms of injury. This he did not do at once. He waited until the following day, the result being that the uninjured thirty-seven (thirty-eight being landed) were kept until Wednesday in a place not sufficient to accommodate half the number. When it was veterinarily decided that the animal supposed to be affected with chronic disease was all right, and it was sent up to the shambles to have the small offal condemned; the meat, however, being passed, and the others permitted to go, at a loss to their owners of at least a couple of pounds per head. Still they handled admirably, and the prices realized showed that they must have been extremely good ere they started on their long and "parlous" journey, as they made £26 to £36 per head, a good price even in this day of dear meat. The fact to be noted is this, that animals can be brought long distances by sea without suffering much deterioration in well-appointed vessels. The question to be considered is whether the freightage may not absorb the freight.—*Advertiser, London, Eng.*

Hogs.

THE BERKSHIRE, ESSEX, CHESTER WHITES, AND SUFFOLKS.

The following article from the pen of Alexander Hyde will well repay farmers for the time given to the consideration of the important subject on which it treats. The favorite breed of hogs in Canada (in this vicinity, at least) is the Berkshire. A farmer who has tried the several breeds that are popular above all others, tells us that he has finally preferred to breed the Berkshires to any other variety. He had made a trial of the Suffolks as well as others, and he has found that for early maturity, and economy in feeding, there are none equal to it. It is, he says, the one that pays best, and is the very best for the farmer. He has been sixteen years engaged in feeding hogs as a part of his farm husbandry. Mr. Hyde writes as follows:—

The pig is one of the best abused animals we know. He is generally represented as a creature of dull perception, dirty habits, obtuse taste, and gross appetite. This representation does the pig great injustice. True, he is not specially docile, does sometimes wallow in the mire, and is remarkably voracious; but it is also true that little effort has been made to civilize the hog, so that his character has not been well developed. He is, however, not naturally unclean, and as for his voracity, it is the result of the perfection of his digestive organs. There is no cleaner, prettier, and more frolicsome animal than a young pig, and if when grown big and obese he sometimes chooses a mud-hole for his bed, he does this to cool himself and to ward off the attacks of flies, mosquitoes, and other insects. The hog knows as well as other folks what good living is, and if left free to follow his own instincts always chooses a clean bed of leaves or grass, and is very tidy in his general habits. Give a pig a house with three apartments in it, a bed-room, a dining-room, and a water closet, and our word for it he will appropriate these apartments to their respective uses, as exclusively, if not as exquisitely, as some biped housekeepers.

A pig is very much the animal that his master pleases to make him. If he is brought up in a six by eight sty, with no comforts or conveniences around him, compelled to eat, sleep, and wallow in mud and filth, he is a dirty animal of necessity, and if he is not attacked with cholera or consumption, he thanks to his owner. He certainly cannot thrive on such treatment. Many seem to suppose that a hog does not know what comfort is, but the fact is no animal appreciates it more. Eating and sleeping are the two great ends of the pig's existence, and it is only when good food and a comfortable sleeping place are furnished him that he enjoys life, and fills a big pork barrel at life's end.

No animal shows the advantage of thorough-bred culture more than the pig. We have often heard it remarked that hogs vary as the swill pails vary. Such has not been our observation. Blood tells in the hog just as plainly as in the horse. The wild boar which Cyrus hunted on the plains of Persia, and whose head formed the favorite dish of our rude Saxon ancestors, was a long-nosed, long-haired, long-legged, long-eared, gaunt-bellied, curved-backed animal, almost as fleet as a horse and fierce as a tiger. His long nose was developed on the "root hog or die" principle, his long, upright ears were the result of constant tension on the watch for enemies, in the pursuit or avoidance of whom his long legs served a useful purpose. He was too pugnacious to put on fat, and his food seemed to develop tusks and bristles rather than lard and bacon.

From this porcupinish wild hog, by judicious crossing and gentle culture, the various herds of our modern swine have been derived. It has taken centuries to eradicate the coarse nature of the old stock, and, in fact, it is not completely root and out yet. We have some varieties of swine that are as uneasy in their pens as gray hounds would be, can get over a fence almost as easily, and are about as little inclined to cover their ribs with fat. The last half century has wrought a great change in all our domestic animals, and in none is the improvement more marked than in the improved breeds of swine. England has led the advance in "porkiculture," and the various improved breeds bear the names of the counties in which the advance has been most manifest, such as Yorkshire, Berkshire, Essex and Suffolk.

For the first start in the line of improvement, England was doubtless indebted to China. Pork has always been the favorite meat of the Celestials. Indeed the ox is considered in China as almost a sacred animal, and beef is a proscribed article of food, it being considered sacrilegious to eat the meat of the animal that does the work. Hence the

Chinese have paid great attention to the rearing and fattening of their swine, which are small-headed, short-necked, thin-skinned, with round, compact bodies placed on small, short legs, hair thin and soft, flesh delicate, disposition quiet, maturing early, and requiring comparatively little food to make much pork. These Chinese hogs were early brought to England, and although too delicate for a cold, damp climate, proved of great benefit in crossing, improving the coarse forms and restless disposition of the English breeds, and increasing the tendency to early maturity, and the easy laying on of fat. The wild hog was a long while maturing, produced only one litter of pigs yearly, and often lived to be thirty years old. The domesticated swine of England were seldom slaughtered till they were two years old; but since the improvements from the Chinese cross, pigs have been found to be good eating any time after they are four weeks old, and at eight months are better fitted for the shambles than they were at eighteen. This early maturity causes great gain to the feeder, and is of no less advantage to the consumer, for young pork is far more delicate than old. For home consumption we never want porkers that are over a year old. Those that have been twice wintered or summered may answer for the market, but not for the family.

But not to make our monograph on pigs too long, and to come more directly to the inquiry of our correspondent, who "wants the best porker who walks on four legs," we will say that there are four breeds which are now contending for the honor of being the best porkers in this country, the Berkshires, the Essex, the Chester Whites, and the Suffolks. Doctors disagree as to which is the best. It is with men's pigs as it is with their wives, each prefers his own. We have tried them all except the Essex, and decidedly give the preference to the Suffolks. We commenced with the Berkshires as long ago as 1840, when the Berkshire fever was at its height, and we must say we liked them. They were of fine forms, matured early, fattened easily, made splendid pork, especially for hams, but we were always disappointed in the weight of the dressed hogs. Their ribs stuck out so nearly horizontally from the back bone that they looked larger and fatter than they proved to be when dressed. The great objection to them, however, was their color. A black hog may be just as good as a white one, as a black man may be just as good as a white man, but there is a prejudice against black in man and beast that cannot easily be overcome. We raised pigs for sale mainly, and only incidentally for home consumption, and whoever does this must consult the demands of the market. The fever for Berkshires, one of the oldest and most thorough-bred breeds of England, has been intermittent in this country, and though now it seems to be on the rise again, we made up our minds that no black breed would be permanently popular, and with much reluctance gave up the Berkshires, and, of course, never tried the Essex.

We next tried the Chester Whites, a large, hearty, well proportioned, but not very fine animal, originating in Chester County, Penn., a great improvement on the common swine of the country, which has proved to be very popular, though it is hardly entitled to the merit of being thoroughbred. We bought a pair from a very honest and thorough breeder, but they were very unlike, and the progeny differed from each other about as the progeny of common swine differ. This, so far as we can learn, has been the experience of most breeders of Chester Whites. Paschall Morris, of Philadelphia, an extensive breeder of Chester Whites, says of them:—"They differ from each other quite as much as any known breed differs from another. We have often seen them, and the offspring of good animals—with long noses which would root up an acre of ground in a short time, slab-sided, long-legged, uneasy restless feeders, resembling somewhat the so-called race-horse breed at the South, that will keep up with a horse all day on ordinary travel, and that will go over a fence rather than take much trouble to go through it. They show more development of head than ham, and as many bristles as hair, &c."

Of course we did not continue to breed such an uncertain race of swine as the Chester Whites proved to be, and fell back on the Suffolks, obtaining a pair in the first place of the Prince Albert variety. Of this breed, Youatt says:—"On the whole there are no better breeds in the kingdom than the improved Suffolks." Rham says:—"Suffolk pigs are, perhaps, on the whole, the most popular breed in the kingdom. The carcasses command a considerable extra price over the common hogs of the country, partly on account of the

greater weight in proportion to the bone, and partly from the pork being of better quality and flavor."

The Suffolks are small in comparison with some of the mammoth Chester Whites, but we are satisfied from years of trial that they make more and better meat from the same amount of feed. Hon. John Wentworth, of Chicago, is probably the most extensive breeder of Suffolks in this country, as he had a herd of 300 on his "Summit Farm." This is his testimony. He has been in Congress, and ought to know whereof he affirms:—

"After trying carefully all the other breeds, we give the preference to the Suffolks, and we think all others will who try them as long and as impartially as we have. They make the most pork with the least food and with the least bone. They are the quietest hogs. Give them enough to eat and they will never leave the premises. They lie down and remain so until they want more food. They make the least offal of any hogs, and they root about the least, even when short of food. For crossing upon other hogs, they have decidedly the preference. Their cross upon the largest white sows make the best of Chester Whites. Their cross upon the largest black or speckled sows, make the best of Berkshires, Polands, Poland Chinas, and other dark colored breeds.

Breeding of Short-Horns.

Every year facilities are increasing for purchase and disposal of pure bred stock. Within the last few years sales have been established at convenient centres all over the country, and, with the exception of a few of the older breeders, who still sell at home, a large proportion of the young bulls now appear in these sale rings. Some people say they dislike buying at such sales, affirming, which is quite reasonable (?) that in the purchase of a bull the appearance of the sire and dam in a great measure regulates their choice. Still, reference can always be had to the pedigrees, and great care ought to be bestowed in the examination of these before purchasing. It does not follow, I hold, that because a bull has a long pedigree he is of necessity well bred. Pedigrees are to be met with including ten or twelve herd books or unnumbered bulls, and perhaps not one among the whole race of sires named could have appeared with credit in a show ring. It must always be borne in mind that like produces like to a certainty. Such likeness can be traced in the sires and dams for generations. Many disappointments are met with when after purchasing a grand show-yard bull, his stock comes of every type but the one expected. There are two things thoroughly inseparable in successful breeding—viz., good shape and good pedigree, and whatever the fashionable pedigree enthusiast may say, no other system can or will benefit the nation at large or the short-horns as a breed. I may have something to say on fashionable strains and their money value at another time, but it is enough for my present purpose to put pedigree and shape on equal footing; and say breed from well bred bulls with good shapes, whose progenitors have had the same qualifications inherent in their blood through judicious in and in breeding to a certain extent. Then, and then only can one know what to expect in a bull's stock. It must also be borne in mind that there is such a thing as two equally well bred animals not "nicking,"—well bred animals of two distinct strains, producing stock not at all like either parents; hence the truth of the saying of the late T. Bates, as to the difficulty of Short-horn breeding:—"I will find," said he, "three men able to be Prime Minister of England before I will find one man qualified to breed Short-horns." The importance of having really well-bred bulls, even in a herd of cross-bred cows, is every year becoming more evident. I heard an intelligent exhibitor of fat stock at the Southern shows remark:—"If one knows the beasts going to Smithfield, for instance, in the cross-bred classes from Aberdeen and Moray, he can tell almost to a certainty where the prizes in these classes will go." There is no doubt but the cross from Angus or Aberdeen cow has to do with this, but I go further, and assert that the use of such Short-horn bulls as many of the Aberdeenshire farmers put to their cows has been the main cause of the excellence of their cross-bred stocks. Fifty, sixty, and in some cases one hundred guineas have been given for bulls solely for breeding purposes. At some of the sales of young bulls prizes are offered for best calves to be sold, which no doubt encourages the breeders to use the best bulls as sires, so that their stock may compare favorably in the sale ring. If one takes a run through the different herds in England and Scotland, he cannot help being struck

with the small to be met with national paper "gentlemen" men" that can with the wealth as above the a Short-horn br if breeding th those who hav ed by the thou men," as I hav their common B. Agriculture

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CONDUCTED A TAINING

[Address d the American Toronto.]

If I suppo ject of this the best met cuniary inter ough bred c pose, I shou to the obser air, that the as it is, in business pu originating delegates to ferest we fe of the oppo to the pub value of th mals. I th only to th sembled to to their pat anxious to speak of th science, I I erved by a principles the subject gists, or th other wor upon know means to k branches of more strict less by sur be no occa to wit: T gress in im any other

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with the small number of really good young bulls to be met with. The number of youngsters advertised for sale just now in the different local and national papers is very great, and yet how few "gentlemen" will appear amongst them—"gentlemen" that can stand out from that common rank with the wealth and style that at once marks them as above the average. It is the common cry that Short-horn breeding does not pay—and I question if breeding the commoner sort does pay—but let those who have gone in for good sorts be encouraged by the thought that good youngsters—"gentlemen," as I have called them—will every year leave their commoner brethren further in the rear.—N. B. *Agriculturist.*

Shorthorn Breeding.

CONDUCTED AS A SCIENCE, WITH A VIEW TO MAINTAINING THE HIGHEST EXCELLENCE IN USEFUL QUALITIES.

[Address delivered by Judge T. C. Jones before the American Shorthorn Breeders' Convention, at Toronto.]

If I supposed, Mr. President, that the only object of this meeting was to consult in regard to the best method of promoting the immediate pecuniary interests of breeders and dealers in thorough bred cattle, or that this was our chief purpose, I should not trouble the delegates to listen to the observations I have prepared. But I trust, sir, that the matter of pecuniary profit, important as it is, in the prosecution of this, as of other business pursuits, has not been as influential in originating this organization or in attracting the delegates to its annual meetings, as the great interest we feel in this fascinating pursuit, on account of the opportunity it affords of rendering a service to the public, by adding to the food-producing value of this important species of domestic animals. I therefore proceed to address myself, not only to the understanding of the delegates assembled to represent this great interest, but also to their patriotism as public spirited citizens, ever anxious to promote the general welfare. When I speak of the art of breeding being conducted as a science, I mean that our practice should be governed by a proper understanding of those general principles that have been tested as applicable to the subject, by the deductions of animal physiologists, or the experience of practical breeders; in other words, that our proceedings should be based upon knowledge. For science, in a broad sense, means to know, and if in cattle breeding and other branches of rural industry, farmers were to attend more strictly to what is known, and be governed less by surmise, whim and prejudice, there would be no occasion for the observation we so often hear, to wit: That in agriculture there is less real progress in improved and scientific methods than in any other department of industrial art.

It has been said by a very respectable authority that we have no such thing as science in breeding—that our stock has been brought to its present condition of excellence by the exercise of the taste, or mere fancy of individual breeders; and that this important field has been entirely neglected by the animal physiologist and the student of kindred sciences. Indeed, it must be admitted that notwithstanding the great mental activity of the last half century, very little has been accomplished for the profession of agriculture, if we except what we owe the mechanic for the invention of labor-saving machinery, and implements for cultivating and harvesting our crops, and preparing them for the market; to which may be added the improvements which the observation and experience of practical men have developed in the breeding of domestic animals. In methods of culture, knowledge of the character of soils—how to maintain and increase their fertility—it is surprising how little has been done, and especially how little the mere scientist has done to aid us. In reference to the great industrial art this association was organized to promote—the breeding and care of domestic animals—it is unaccountable that learning and science have done no more. While in regard to the composition of the earth's crust, the origin, history and modification of species, races and varieties of animals, we have had a great deal of careful and laborious investigation by men of eminent scientific attainments, these labors seem to have been, for the most part, expended much more in the interest of abstract science than of practical utility. Rocks and earths have been

explored to determine the order and age of the different formations, rather than the uses and value of the material composing them. And, in like manner, it must be confessed that the study of the history and habits of animals has been prosecuted with diligent industry, in some quarters, with no other purpose, as we infer from the results, than to determine questions, practically unimportant, in regard to the number of species originally created, if any—or whether, like Topsy in Uncle Tom's Cabin, they did not all "just grow!" It is possible that some writers are too sanguine in their anticipations of results yet to be accomplished by science in this department. It may be, and I think is true, in regard to some questions involved in our art as observed by a foreign writer, that "Where we strive to throw light, the light does but reveal to us the spectres of our own ignorance, and all that we carry away from the vain attempt is a renewed consciousness of our own weakness and indigence." While, therefore, it must be admitted that mere speculative scientists have heretofore accomplished very little in aid of this branch of agricultural industry, it is nevertheless true that considerable progress has been made in establishing systematic methods founded on the careful observation of facts and intelligently conducted experiments. And it must certainly be conceded that by reason of the rapid increase of scientific knowledge and its wide diffusion, the mass of intelligent people are much more competent to collect and arrange facts in reliable form, than at any former period in the world's history. There is, in our investigations, less guessing, less mere fancy and whim, less prejudice, and a more general determination to get down to the "hard pan" of actual fact, than ever before. And, Mr. President, if we who claim to be breeders of model and specimen cattle, designed for the improvement of what have been called "the rank and file" of farmers' stock, resolved to be governed by this commendable spirit of impartiality and thorough truthfulness in our proceedings, and bring to our work minds trained to habits of study and systematic investigation, we shall escape losses and disappointments, which follow attempts to accomplish impossible improvements and practices which experience has shown to be erroneous. It is most unfortunate that our business is not conducted upon a more intelligent understanding of the facts established by the observations of experienced breeders, and the principles deducible from these facts. As it is, we are at sea upon almost every question that may be suggested, and there is scarcely anything that can be said to be settled. Hence it is that the beginner is left to his own whim or fancy; and the products of his crude practice seem to be as highly appreciated as the fruits of the labor of the skillful breeder who has devoted a life to the profession! My purpose on this occasion is to direct attention to a few principles that ought to be regarded as elementary in our art, and in reference to which there ought to be no diversity of opinion, in the hope that our discussion may result in a more correct understanding of these principles and their application in actual practice.

The great principle that the characteristics of parents are inherited by the offspring, that "like begets like," the discovery of which, or at least its application in breeding domestic animals, has been attributed to Bakewell, has doubtless been understood by civilized people in all ages. In the light of modern investigation, this principle may be defined as follows:—In nature each species brings forth after its kind, in obedience to the great decree—"Let the earth bring forth the living creatures after its kind, cattle and creeping things, and beast of the earth after his kind." Within the species, we have races or breeds that are more or less constant in transmitting their peculiarities, depending on the antiquity of the variety, uniformity of food, climate and other conditions. But in addition to these illustrations of this principle, we have what is more immediately applicable to our subject, to wit:—The inheritance of qualities by the offspring from its parents. Here, though the qualities of the sire and dam are generally observed in the produce, it is not universally so. Sometimes we have a reproduction of the grandsire or grand dam, or of more remote ancestors. But as the rule that "like begets like" controls, not only in the transmission of the characteristics of the species and the race, but also of the individual ancestors, and especially of the immediate parents, the importance of selecting breeding animals, which, besides being of the approved race, shall be descended from animals possessing the excellence we seek to produce, cannot be over estimated. The progeny inherits the outward form, size, color and

quality, good or bad, of its ancestry; and, also, though, perhaps, with less certainty, artificial habits and conditions. The produce of unthrifty and "runted" animals will not be as good "growers" as those from parentage that have been kept in thriving condition. And so, cattle that are over-indulged in "luxury and ease," will be less likely to produce a hardy and vigorous progeny, than those that have had proper air and exercise, without such over-indulgence. A cow with the first calf, being milked irregularly, and dried off in four or five months, becomes a poor milker, and the habit will be likely to influence, to some extent, the milking quality of her daughters; and if continued for several generations, will become an established characteristic. All intelligent efforts for the improvement of domestic animals have been founded on two principles, to wit:—1st. The selection of the best animals to breed from; and 2nd, proper feeding and care for the development of the highest excellence. These principles were acted upon in a rude way at the very beginning of the history of races and breeds; and important and indispensable as they must have been, in the improvement of mixed and inferior sorts, and the building up of the improved breeds, their observance is equally essential to the preservation of the valuable characteristics of our most perfectly developed races.

To be Continued in our Next.

Losses on Stock from Injudicious Wintering.

I have repeatedly urged farmers who make little or no provision for properly wintering their stock, in the way of food and shelter, to change their shiftless, ruinous management, and adopt a course that would be at once profitable and creditable, and a source of pleasure, instead of the dreadful annoyance to which they are annually subjected, resulting simply from palpable mismanagement. I am happy to say that I have here and there prevailed, and induced some having no shelter to build stables, and those who were in the habit of compelling their stock to shift for themselves in winter, "root hog or die," often occasioning a loss in condition so great that all profit derived from the stock surviving, such neglect would scarcely make good the loss. Strange to say, in many localities, and over large areas in this country, this mismanagement has been the rule, generation after generation, and thousands of extensive stock keepers are still practicing this ruinous policy, and have been for twenty years or more. The extent of the loss growing out of a want of shelter and of a full supply of proper food, in winter, I have never been able to ascertain so definitely as of late. The loss of weight on animals, hives and sheep, according to statements made by the owners of stock themselves, range from five to forty per cent. In Maryland it is from five to fifteen per cent.; in southwestern Virginia, from ten to forty per cent. The depreciation of the animals is most marked in southwestern Virginia, North Carolina, South Carolina and the rolling portions of Georgia, where, in numerous instances, it is reported to have reached fifty per cent. I spent a portion of one winter, some years since, in southwestern Virginia, and am confident that I saw both cattle and sheep in market that did not weigh half what they did when I saw the same animals some four months previous. I did not find one per cent. of the farmers stabling their cattle, and not ten per cent. of them fed them so that the animals did not suffer seriously with hunger; and I saw numerous places where cattle, horses and sheep all suffered for water for several weeks at a time. A small percentage of the stock keepers are every year improving their management, building shelter and stables, and making better provision for feeding than formerly, but I am sorry to say that a very large proportion of them still allow their animals to suffer for food and shelter, and, as a consequence, they do not make a tithe of the profit on their stock that they would with proper management. Stock men, look to your interest, and do not defer it; now is the time to provide provender and shelter for the coming winter, the rigors of which cannot be endured without loss by animals without shelter and food. Do not forget to make liberal provision for admitting the sun into your stables, also pure air, at a comfortable temperature, and speedily remove everything that will detract from the hygienic condition of the stables, folds and stys. Do not build without the advice of an experienced architect.—J. W., in *Live Stock Journal.*

Garden, Orchard and Forest.

Old and New Apple Orchards.

The inquiry is made: "Shall I continue my old apple orchard, of which some of the limbs are dying, or cut the trees down and plant a new one? And shall I plant on the same ground?" In answer,—keep the old orchard as long as you can get anything from it. Do not plant on the same land; but while you keep the old trees in good condition as long as practicable, have a young orchard coming on in another place.

If you cut down your old trees and plant a young orchard, you will be without fruit for several years. Old orchards well managed will grow and bear good fruit for some twenty years longer than if entirely neglected. At the west, apple trees at forty years have seen their best days, and cannot be relied on very much longer. At the east, they are usually good till sixty years, and under favorable influences will often last till seventy or eighty. We have seen a tree known to be about one hundred years old, but this was an unusual exception. The oldest thrifty and bearing trees we have known stood on the borders of gardens, where at least half the roots were in a cultivated and constantly enriched soil. Those standing neglected in grass and weeds, at the same age, were declining, the limbs dying, and some had gone to decay.

For an old orchard standing in grass, we would not recommend unconditionally ploughing up the sod. A portion of the roots is necessarily cut or torn more or less by the plough; and while such a root pruning (performed of course while the trees are dormant,) may do no harm at all to a young and thrifty orchard, it might tend to check the growth of old trees, unless the mellowing of the surface might counterbalance the effect. It is safest, therefore, to top-dress the ground where old or decaying trees stand, with manure in autumn or winter, and to keep the grass grazed short in summer with sheep, these animals also destroying the codling moth in the fallen fruit. Cut out all the dead limbs at the same time, and reduce the amount of the top by thinning out evenly the small shoots or branches. By thus reducing the number of shoots, those that remain will make as vigorous growth, and bear as good fruit as younger trees. We have known some which had already lost a part of their branches by old age, restored to vigor and to a moderate degree of productiveness, by stimulating the roots and thinning the top. It is important, however, to continue annually the care they receive, or they will soon fall back again.

All this care is not great, and is well repaid by the crops which the old trees will continue to afford while the young trees are coming forward into bearing.

When it is not practicable to obtain large supplies of manure for top-dressing, it may be best to break up the grass sod under the trees by a shallow ploughing, early in spring before the buds swell; and by keeping the surface clean and mellow through the summer, a small application of manure broadcast will afford important assistance. A dressing of ashes, leached or unleached, if not more than fifty bushels per acre, will be useful to most soils. If the soil in which the trees stand is deep, and the roots extend downward several feet, the ploughing may be done without fear of injury. If, on the contrary, the sod happens to be quite shallow, and nearly all the roots are near the surface, greater caution must be used with old trees, although with younger orchards the small amount of mutilation which the roots thus receive is overbalanced by the benefit of the cultivation.

In all these cases judgment must be exercised, and the treatment be adapted to the circumstances of the case. The disastrous results which have followed the ploughing of orchards, have usually come from ploughing while the trees were growing, the effect of which is like attempting to transplant at midsummer.

Needless injury is often done to the roots of trees by the absence of proper implements. As we have already stated, the plow should never be used after the buds begin to swell in spring; but to keep the surface clean and mellow, the work should be done with the assistance of such implements as never tear roots. Immediately following the plow, late in spring or early in summer, Shares' harrow is the very best thing that can be employed. The teeth ride over the roots and all other obstructions, like the runners of a sled, at the same time that they mellow and turn up the soil to the depth of three or four inches. Later in the season, a shallower, finer and smoother mellowing is given

by the use of the smoothing harrow,—which, unlike the common harrow, never tears the roots, but rides over them. It also smooths and prepares the surface of the orchard for the convenient gathering of the fruit, and for the reception of windfalls. Just before the fruit begins to fall, if the surface can be finally made smooth with a roller, it will be in as perfect condition for the gatherer as it can be made.

There is a practice which we have never tried, but which appears to possess some advantages and no drawbacks, namely, sowing oats in the orchard soon after midsummer, or so late that it will only give a crop of leaves before frost. The object is to afford a soft bed for falling apples, and to contribute in some degree to enriching the orchard, the small coat of vegetable matter being plowed under early in spring. There may be some other annual crop which would be better than oats, and the subject is worthy of attention. If the owners of orchards, old or young, by giving more attention to their cultivation, could increase their crops and augment their value and market price, the labor and care would doubtless be amply repaid.—*Country Gentleman.*

Alfalfa or Lucerne Grass.

Orchard grass and perennial Italian rye grass, one acre of each, sowed the first week in April last, drew my attention yesterday, as I made a casual tour of observation over the experimental grounds of the Illinois Industrial University. The grasses were all sowed immediately after spring wheat, and have remained undisturbed since the grain was removed, some time in August. The stand of Alfalfa is pretty fair, but the growth has not exceeded ten or twelve inches in height, and the stems and foliage are scarcely larger than those of white clover. So far the frosts have done little more than to scald some of the exposed leaves, and it is to be hoped that the grain stubble and weeds now present on the ground will afford protection during winter, so that the extent and value of the second summer's growth may be determined.

The stand of orchard grass is good, and the amount of herbage, as compared with timothy, sown at the same time and on similar soil, is five or six times as great. Evidently, then, for fall and winter grazing, orchard grass sown in the spring will afford from three to four times as much pasturage as blue grass or timothy sown on the same soil, and under the same circumstances. But the extraordinary growth made by the perennial rye grass, its considerable resemblance to the un-pastured blue grass on rich lands at this time of the year, its deep, rich color, and its vigor and freshness, was what principally drew my attention and led to making these notes. The amount of herbage, as compared with the adjoining acre of orchard grass, was as much greater than the orchard grass as the orchard grass was greater than the timothy. As herbage and as hay, perennial rye grass is not as much sought for by stock as timothy or blue grass, nor is it as nutritious; but sown in the spring it will yield for fall pasturage ten or twelve times as much as either. Where it was sown the soil is deep and rich and moist, and the season has been favorable for grass growth—particularly that of rye grass. If it should prove hardy and stand our winters, and if it should be found to resist drouth as well, certainly no grass I have ever seen, sown in spring, will furnish anything like the amount of fall and winter pasturage.

Let me be understood. I do not undertake to say that spring sown rye grass will make as good fall and winter pasturage as an old summer-saved blue grass or timothy pasture, but what I mean is, that when spring sown, on a soil and with a season which suits, rye grass will produce from five to ten times as much herbage as any other grass sown at the same time.

The great want of the country now is fall and winter pasturage—some other grass besides blue grass that will come on and make good crops the first year (which blue grass will not do for three or four years), grow in cold weather and be frost proof the season through.—*B. F. J., in Country Gentleman.*

POTATOES PLANTED DEEP.—We tried the experiment this year, on several alternate rows of potatoes about thirty rods long, of planting a part about two or three inches deep, and another part five inches deep. The latter invariably produce about 20 to 25 per cent. more potatoes, the treatment in every other respect being the same. They were cultivated flat, which always give more than when ridged.—*Country Gentleman.*

Fruit Trees.

So many persons now set out fruit trees that it seems as if it is hardly worth while to say a word in encouragement of the practice; but a large number of those set out are not because people have thought much about planting or care very much for them, but chiefly because they have been bothered by some peddler to such an extent that they had to give an order so as to get rid of the fellow. So little do people who give orders care for the trees under such circumstances that there is often trouble with regard to paying freight on them, and in order to protect themselves, the companies often insist on freight being paid in advance by the sender of the trees; and in this way the legitimate nursery business is embarrassed by reason of these pestiferous peddlers.

Supposing the trees are received and paid for, there is still much indifference about setting them out and subsequent care, and, in consequence, many die, or, if they live, struggle along and come to little account.

It is strange that people should have no better reason to give for purchasing such trees than that they could not get rid of the peddler without; though they know that they must pay high prices for poor trees, which may never turn out to be as represented after all, unless the peddler of trees is a purer being than the peddler of other articles. Still it is well that some trees are planted, and even trees bought under such circumstances as these may as well be cared for, for they will, or at least may, be of some use in the end.

Many set out fruit trees because they are taught to believe that great profits will result from the sale of the fruit in time. We do not urge planting on this ground, because money is really seldom made by these spasmodic attempts, but by those who understand fruit culture thoroughly, and make it a chief and leading business. Fruit trees, by the average owner of land, should be planted for family reasons, that is to say: in order to have a supply of fruit always at hand on one's own place. It may be that one will discover that profit can be made of the fruit as well. There will then be the chance to take advantage of these circumstances, and to set out especially for the purpose.

Many persons ask what land is best for certain fruit trees? what manures are best to use? There is no doubt but that some soil is better for trees, and some manures more effective than others, but this is rather in a professional sense, where special excellence is desired, and need not worry the average man. There is no soil nor any manure that is ready to one's hand but is quite good enough for ordinary persons.

The trouble with most people, and the reason that trees so often fail is that the roots are allowed to get dry. Dry roots is a worse condition of things than poor roots; and then the earth should be hammered in very tightly about the roots, and the trees severely pruned. Not one tree in ten thousand need die if these simple things are really attended to.

The after culture of trees is very simple. Keep out insects from the stems of the trees near the ground; do not disturb the surface roots by digging or plowing near them, and spread on the surface above the roots now and then something to eat.—*Thomas Mehan, in Weekly Press.*

Prof. Wilson on Bone as a Fertilizer.

Within the last fifty years science and art have been prolific in increasing our knowledge of agriculture. From the former we are being taught the relation soils and climate bear to their respective crops; by the latter large areas of land are cultivated, and fertility increased by changing the physical properties of the soil, in rendering it more suitable for a diversity of culture.

Each plant requires for its full and complete development not only a proper preparation of the soil for the seed, but the presence of the mineral or earthy matter, which enters into its structure in sufficient quantity, otherwise the agriculturist has no reward for his labor, time and capital.

It would be interesting, no doubt, to many of you to discuss at length the relation the animal kingdom bears to the vegetable; but this would carry us beyond the ordinary limits of space and intentions of this paper; but suffice it to say that each is dependent on the other for its existence. From every spear of grass, from every grain of corn, the animal derives the mineral portion of its structure; the excess necessary for continuance of life is again voided and returns to the soil, or,

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Experience has taught you all, no matter how obscure these laws of reproduction may be to many of you, that by the continuous cropping of your soils without the application of the excrement of animals in some form, they become rapidly exhausted and cease to yield, yet the land may apparently have the same appearance as when in its most fertile condition.

It is now that science comes to our aid, and, by a careful examination of the ash of the plant, you are taught what particular constituent of that soil has entered into its structure; then, by making the same inquiry into the condition of the soil, if you find one or more either deficient or absent you can account for the failure of a bountiful harvest.

These remarks are particularly applicable to the agriculturist of this country. Vast tracts of land but sparsely inhabited, in comparison with European countries, are kept in the highest cultivation; large crops are harvested far beyond home consumption; they are transported to our seaports, and sent in ships to foreign countries to feed the millions of the old world. Each crop removes a certain per centage of fertility from the soil, and if this fertility, as it were, was not replenished, our land would be a barren waste. Every bushel of wheat, of corn, of oats, each ton of hay the farmer sells contains a certain amount of the mineral wealth of his land; he is actually selling his land in another form—its fertility. The country containing people or cattle consuming this grain and hay are not only sustaining life but replenishing the fertility of their soils.

The mineral constituents or plant food proper is generally distributed over the surface of the earth, although in limited quantities. Two important ones—the phosphates and potash—are rapidly exhausted. These must necessarily be returned after each crop is grown, or the land soon becomes barren; less so, however, in grass producing districts, from the fact that grass roots penetrate to a great depth, absorbing their food ten or fifteen feet below the surface, and by the fine capillary tubes or sap cells is brought to the surface, held in solution in the sap, there to develop the weed. Hence, very poor lands are, in a great measure regenerated if allowed to remain in grass during many seasons. On the other hand, cereals and roots grow and mature rapidly, and must have their food on or near the surface, properly prepared, and in sufficient quantities for their complete development. This character of food being immovable, has to be returned to the soil by the agriculturist, while the movable carbonic acid, nitrogen and ammonia compounds are being returned through the medium of the atmosphere, according to the immutable laws of reproduction, for the continuance of life in both the animal and vegetable kingdom.

Phosphoric acid is an important constituent of all plants. England imports annually from 250,000 to 300,000 tons of raw material, at the cost of millions of dollars, besides taking care to save and return to the soil all the excrements, human and animal, produced not only from the food she cultivates, but, added to it, the large quantities of grain imported from the United States and other countries. Not one atom of material, valuable as a manure, is allowed to go to waste there. A contrast to husbandry here.

Bones are the most available source of phosphoric acid. Every farmer has it within his power to save this valuable fertilizer, provided he exercises a little care, and has the importance of doing so impressed upon his mind. As it is thousands of tons go to waste in this country, while our lands are becoming rapidly exhausted. Manufacturers of fertilizers have to resort to insoluble minerals and fossils for their source of supply, and to convert them into an assimilable condition as plant food, through the agency of chemicals and expensive machinery.

It would be well at this point to notice the difference in the physical properties of substances having the same chemical composition. For instance, the mineral apatite, the Charleston phosphate rock, and bones have the same combination of phosphoric acid and lime; the first two are insoluble in the soil; even if ground to an impalpable powder, and applied to the land, would remain inert for two years, while the bone placed under the same condition would be immediately available as plant food. Why this state of cohesion no one has been able to solve, yet you have more familiar illustrations of the difference in physical structure

before you every day. Take, for instance, chalk and marble, they have the same chemical composition; the one is hard and compact, the other soft and disintegrated by the slightest touch.

Farmers, individually and collectively, should give the strictest attention to the use of bone manure—an important source of wealth to them—for the improvement and continuance of the fertility of the land. To this end the strictest care should be given to having them properly and finely ground under their immediate supervision, as a guarantee of obtaining them free from adulteration. In the indiscriminate collection of bones, especially those obtained directly from slaughter houses and butchers in our large cities, quantities of fat still adhere to them. This should be previously removed, the fat having no agricultural value, and, unless extracted, the bones are deteriorated, being so completely impregnated that, no matter how finely ground, they will resist the disintegrating action of the moisture and saline compounds found in the soil, for a number of years.

Bones contain, on an average, 45 per cent. of phosphoric acid, and one per cent. of ammonia.

The importance of utilizing every pound of bones, both in communities and the great slaughtering districts of the west, must fully impress the mind of every agriculturist, by taking into consideration the large amount of phosphoric acid that is yearly removed from the soil in harvesting matured crops.—Michigan Farmer.

The Canker Worm.

In those sections that are liable to the depredations of the canker worm now is the time to begin to tar the trees, to protect them. It was formerly supposed that the moths of the canker worm came out of the ground only in the spring, but it is now well known that many rise in the late fall and early winter. In a mild, open winter you can find them in every month from October to March, but usually it is chiefly from the middle or 20th of October to about the first of December, and then again from about the first to the middle of March. If the frost holds off well and the weather is warm, they will not appear until the end of October, but if there are early hard frosts, as there have been this fall, it is best to be on the lookout for them soon after the middle of this month. They begin to make their appearance soon after the first hard frosts, and if these come early the canker worm will come early; if late, then the pests will delay the later. Probably by far the larger number rise in the spring from the middle of March till the first of April, but the time will vary considerably according to the weather. If the early part of March is mild and open, and the ground bare, they will begin to appear soon after the first of that month, but when the ground is frozen and covered with snow, they begin to rise later and come up fast and thick after the middle of the month, and continue for about three weeks.

The female of the canker worm is wingless, and when she comes up from the earth instinct leads her to go for the nearest tree and try to ascend. The male is winged. The object, therefore, is to prevent the female from ascending the tree. After she has got up it is very difficult to capture her, and we must take her on the ascent or we lose the chance of a capture.

Tar is perfectly effective if it is applied in season and repeated often enough to keep the surface sticky, but it hardens rather rapidly, and when this takes place the insect can easily walk over it. The only safety is to repeat the application often enough to make or keep the surface sticky or adhesive, and the failures to prevent the ravages of this terrible pest arise from a neglect to apply the tar early enough or to repeat the application often enough to keep the surface fresh. Printer's ink, if a good quality, has the advantage of tar in not drying up or hardening so readily, so that it is not necessary to apply it so often. It requires rather less labor, therefore, to protect an orchard with printer's ink than with tar. It acts on the same principle precisely, that is it is sticky and the insects cannot walk over it. Either of the substances will furnish a perfect protection if it is properly followed up.

If printer's ink is used it must be of the best quality. An orchard may be protected with it at an expense, including ink and labor, of about twelve cents a tree on an average. The use of tar will cost about the same, because it will require more constant looking after. We hope no one who owns a tree will allow it to be overrun and destroyed by the canker worm.—Mass. Plowman.

The Apiary.

Foul Brood.

An old subscriber who desires to know what foul brood is, and what is the remedy, will find the information required in the following article received on the subject from A. C. Attwood, Van-neck. From the importance of the subject we give it at length:

When any failure occurs among bees, it is usually customary to blame either the poor miller gnats or a hard winter. Of course these are both troubles the bee-keeper has to contend against, but if bees are kept strong, the former is powerless, and, by providing a proper winter repository, the latter difficulty is removed; but both together, and a dozen more troubles equal to them, are as nothing compared to the deadly foe of which I am now about to speak. I mean "foul brood." It may well be called a wholesale destroyer, for a stock once infested with it is doomed unless it is speedily operated on, and even then I have not much confidence in any means that has ever yet been tried. Not only is that individual stock doomed, but also the entire apiary—no matter how many thousands of stocks it may contain—unless the trouble is noticed in time and some radical means taken to prevent its progress.

The first intimations that the observant bee-keeper has that he has foul brood in his apiary are on examining the brood combs, the brood, instead of being all shouldered up firm, one beside another, as it would be in a healthy state, looks blotched. Perhaps only one-third of the cells, scattered all over the hive, are either hatched out or have healthy brood in. The capping over the others, instead of being convex, is all sunken or concave, and upon examination, the cells themselves are found to contain dead and putrifying larva, either still soft through decomposing, or already shrunken to a dry, black and fetid mass. To the experienced bee-keeper, who is acquainted with foul brood, the offensive, pestilential smell issuing from the hive proclaims the diseased condition of the colony.

If never noticed, but allowed to take its course, the effect is sure to be fatal. No stock can ever become healthy again of its own accord, for the fearful mortality among the brood, which increases daily until only a very few bees hatch, which, as a natural consequence, depopulates the hive. They get weaker every day, and lose their ambition, till only a handful are left, which fall a prey to millers first and then robbers, which turn in and carry off all the honey to their own hives, which in turn are sure to get the disease as soon as they feed their ill-gotten gains to their own larva, and so, from one stock to another, till the entire apiary is destroyed, and also any neighboring apiary which may have shared the spoils with them.

Dzreszon, the great German apiarian, in this way lost a fine apiary of seventy stocks before the disease could be arrested, and I am personally acquainted with a prominent bee-keeper who lost his entire apiary of sixty stocks, for what did not die he destroyed and bought afresh, and he is now quite clear of it. \$1,000 did not cover his loss from this fearful destroyer. A natural question will be asked—What is foul brood, and wherein does the virus of the disease lie? It lies chiefly in the honey, next the combs, then in the hive and its surroundings, and also in the stomachs of the honey bees. It is a pungis growth of insect that has been discovered by a very powerful microscopic investigation, one with a magnifying power of 600 diameters, possessing also a micrometer which will measure to the ten-thousandth part of a millimeter. With that it has been discovered that one entire inch of comb of fifty cells will contain fifty billions of fungi! It is this enormous capacity of increase which renders foul brood so dangerous, the same as is the case with the cholera, typhus, and small-pox fungi, &c.

As to a cure, I would advise, with M. Quimby and several others, the moment the disease is noticed, to make a bonfire of the whole thing, bees combs, hive, honey, and stand. If I had a hive this moment worth fifty dollars that was foul broody, that is most assuredly the cure I should give it. I believe a cure can be effected; still, the trouble and risk is greater than any possible gain. Many have experimented, and some profess to have effected cures, which I do not doubt, and if any person wishes to try his hand I will give their experience as briefly as possible:—First, extract the honey from the combs, then cut out and destroy all the brood and combs effectually, boil the

hives and comb frames in a large cauldron for half an hour, they must be completely submerged in the boiling water, or else allow an exhaust steam pipe to exhaust in the hive for a whole day. This is almost sure to kill all the fungi in the hive. Then bring the honey to a boiling heat for a short time, and skim. Leave the bees in an empty box for 15 hours, then return them to their own clean hive and let them build fresh comb. The boiled honey can be fed them with safety, or rather with comparative safety, and though I know astock can be cured by this method, still there is a risk, as is proved by at least one-half of the hives, by some means or other, becoming foul broody again, so that if one stock or more is found diseased, the Quimby method is the quickest and safest plan, viz., utter annihilation.

The Story.

Queen Tita's Wager.

CHAPTER III. (Continued.)

Suddenly there was a shot fired close to Charlie—he knew it must have been the doctor. In about a minute afterward he saw some pale yellow object worming its way slowly through the ferns; and here, at length, he made sure he was going to get his yellow fox. But just as the animal came within fair distance it turned over; made a struggle or two, and lay still. Charlie rushed along to the spot; it was, indeed, a yellow fox, shot in the head, and now as dead as a door nail.

What was he to do? Let Dr. Krumm take home this prize to Franziska, after he had such a chance in the forenoon? Never! Charlie fired a barrel in the air, and then calmly awaited the coming up of the beaters, and the drawing together of the sportsmen.

Dr. Krumm, being at the next station, was the first to arrive. He found Charlie standing by the side of the slain fox.

"Ha!" he said, his spectacles apparently gleaming with delight, "you have shot him! You have killed him! That is very good—that is excellent! Now you will present the skin to Miss Franziska, if you do not wish to take it to England."

"Oh, no!" said Charlie, with a lordly indifference. "I don't care about it. Franziska may have it."

Charlie pulled me aside, and said, with a solemn wink, "Can you keep a secret?"

"My wife and I can keep a secret. I am not allowed to have any for myself."

"Listen," said the unabashed young man. "Krumm shot that fox. Mind you don't say a word. I must have the skin to present to Franziska."

I stared at him; I had never known him guilty of a dishonest action. But when you do get a decent young English fellow condescending to do anything shabby, be sure it is a girl who is the cause. I said nothing, of course; and in the evening a trap came for us, and we drove back to Huferschingen.

Tita clapped her hands with delight; for Charlie was a favorite of hers, and now he was returning like a hero, with a sprig of fir in his cap to show that he had killed a buck.

"And here, Miss Franziska," he said, quite gayly, "here is a yellow fox for you. I was told that you wanted the skin of one."

Franziska fairly blushed for pleasure; not that the skin of a fox was very valuable to her, but that the complement was so open and marked. She came forward, in German fashion, and rather shyly shook hands with him, in token of her thanks.

When Tita was getting ready for dinner I told her about the yellow fox. A married man must have no secrets.

"He is not capable of such a thing," she says, with a grand air.

"But he did it," I point out. "What is more, he glories in it. What did he say when I remonstrated with him on the way home? 'Why,' says he, 'I will put an end to Krumm! I will abolish Krumm! I will extinguish Krumm!' Now, madam, who is responsible for this? Who has been praising Franziska night and day as the sweetest, gentlest, cleverest girl in the world, until this young man determines to have a flirtation with her and astonish you?"

"A flirtation!" says Tita, faintly. "Oh, no! Oh! I never meant that."

"Ask him just now, and he will tell you that women deserve no better. They have no hearts. They are treacherous. They have beautiful eyes, but no consciences. And so he means to take them as they are, and have his measure of amusement."

"Oh! I am sure he never said anything so abominably wicked," cries Tita, laying down the rose that Franziska had given her for her hair. "I know he could not say such things. But if he is so wicked—if he has said them—it is not too late to interfere. I will see about it."

She drew herself up as if Jupiter had suddenly armed her with his thunder-bolts. If Charlie had seen her at this moment he would have quailed. He might, by chance, have told the truth, and confessed that all the wicked things he had been saying about women's affection were only a sort of rhetoric; and that he had no sort of intention to flirt with poor Franziska, nor yet to extinguish and annihilate Dr. Krumm.

The heart-broken boy was in very good spirits at dinner. He was inclined to wink. Tita, on the contrary, maintained an impressive dignity of demeanor; and when Franziska's name happened to be mentioned, she spoke of the young girl as her very particular friend, as though she would dare Charlie to attempt a flirtation with one who held that honor. But the young man was either blind or reckless, or acting a part for mere mischief. He pointed the finger of scorn at Dr. Krumm. He asked Tita if he should bring her a yellow fox next day. He declared he wished he could spend the remainder of his life in a Black Forest inn, with a napkin over his arm, serving schoppens. He said he would brave the wrath of the Furst by shooting a caper-caizle on the very first opportunity, to bring the shining feathers home to Franziska.

When Tita and I went up stairs at night, the small and gentle creature was grievously perplexed.

"I cannot make it out," she said. "He is quite changed. What is the matter with him?"

"You behold, madam, in that young man the moral effects of vulpicide. A demon has entered into him. You remember, in 'Der Frieschutz,' how—"

"Did you say vulpicide?" she asks, with a sweet smile. "I understand that Charlie's crime was that he did not kill the fox."

I allow her the momentary triumph. Who would grudge to a woman a little verbal victory of that sort? And, indeed, Tita's satisfaction did not last long. Her perplexity became visible on her face once more.

"We are to be here three weeks," she said, almost to herself, "and he talks of flirting with poor Franziska. Oh! I never meant that."

"But what did you mean?" I ask, with some innocent wonder.

Tita hangs down her head, and there is an end to that conversation; but one of us, at least, has some recollection of a Christmas wager.

CHAPTER IV.

CONFESSIO AMANTIS.

Charlie was not in such good spirits next morning. He was standing outside the inn, in the sweet, resinous-scented air, watching Franziska coming and going, with her bright face touched by the early sunlight, and her frank and honest eyes lighted up by a kindly look when she passed us. His conscience began to smite him for claiming that fox.

We spent the day in fishing a stream some few miles distant from Huferschingen; and Franziska accompanied us. What need to tell of our success with the trout and the grayling, or of the beautiful weather, or of the attentive and humble manner in which the unfortunate youth addressed Franziska from time to time?

In the evening we drove back to Huferschingen. It was a still and beautiful evening, with the silence of the twilight falling over the lonely valleys and the miles upon miles of darkening pines. Charlie has not much of a voice, but he made an effort to sing with Tita,

"The winds whistle cold and the stars glimmer red,
The sheep are in fold and the cat e in shed,"

and the fine old glee sounded fairly well as we drove through the gathering gloom of the forest. But Tita sang, in her low, sweet fashion, that Swedish bridal song that begins,

"Oh welcome her so fair, with bright and flowing hair,
May Fate through life befriend her—love and smiles attend her;"

and though she sang quietly, just as if she were singing to herself, we all listened with a great attention, and with great gratitude, too. When we got to Huferschingen the stars were out over the dark stretches of the forest, and the windows of the quaint old inn were burning brightly.

"And have you enjoyed the amusement of the day?" says Miss Fahler, rather shyly, to a certain young man who is emptying his creel of fish. He drops the basket to turn round and look at her face, and say, earnestly,

"I have never spent so delightful a day, but it wasn't the fishing."

Things were becoming serious.

And next morning Charlie got hold of Tita, and said to her in rather a shamed way,

"What am I to do about that fox? It was only a joke, you know; but if Miss Fahler gets to hear of it, she'll think it was rather shabby."

It was always Miss Fahler now; a couple of days before it was Franziska.

"For my part," says Tita, "I can't understand why you did it. What honor is there in shooting a fox?"

"But I wanted to give the skin to her."

It was "her" by this time.

"Well, I think the best thing you can do is to go and tell her all about it; and also to go and apologize to Dr. Krumm."

Charlie started.

"I will go and tell her, certainly; but as for apologizing to Krumm, that is absurd!"

"As you please," says Tita.

By-and-by Franziska—or, rather, Miss Fahler—came out of the small garden and round by the front of the house.

"Oh! Miss Fahler," says Charlie, suddenly, and with that she stops and blushes slightly. "I've got something to say to you. I am going to make a confession. Don't be frightened; it's only about a fox. The fox that was brought home the day before yesterday; Dr. Krumm shot that."

"Indeed," says Franziska, quite innocently, "I thought you shot it."

"Well, I let them imagine so. It was only a joke."

"But it is of no matter; there are many yellow foxes. Dr. Krumm can shoot them at another time. He is always here, perhaps you will shoot one before you go."

With that Franziska passed into the house, carrying her fruit with her. Charlie was left to revolve her words in his mind. Dr. Krumm could shoot foxes when he chose; he was always here. He, Charlie, on the contrary, had to go away in little more than a fortnight. There was no Franziska in England—no pleasant driving through great pine woods in the gathering twilight—no shooting of yellow foxes, to be brought home in triumph and presented to a beautiful and grateful young woman. Charlie walked along the white road and overtook Tita, who had just sat down on a little camp-stool, and got out the materials for taking a water-color sketch of the Huferschingen valley. He sat down at her feet on the warm grass.

"I suppose I shan't interrupt your painting by talking to you?" he says.

"Oh! dear, no," is the reply; and then he begins, in a somewhat hesitating way, to ask indirect questions, and drop hints, and fish for answers, just as if the small creature, who was busy with her sepals and olive-greens, did not see through all this transparent cunning.

At last she said to him, frankly,

"You want me to tell you whether Franziska would make a good wife for you. She would make a good wife for any man. But then you seem to think that I should intermeddle, and negotiate, and become a go-between. How can I do that? My husband is always accusing me of trying to make up matches; and you know that isn't true."

"I know it isn't true," says the hypocrite. "But you might only this once. I believe all you say about this girl—I can see it for myself; and when shall I ever have such a chance again?"

"But, dear me!" says Tita, putting down the white palette for a moment, "how can I believe you are in earnest? You have only known her three days."

"And that is quite enough," says Charley, boldly, "to let you find out all you want to know about a girl, if she is of the right sort. If she isn't, you won't find out in three years. Now, look at Franziska. Look at the fine, intelligent face and the honest eyes; you can have no doubt about her; and then I have all the guarantee of your long acquaintance with her."

"Oh," says Tita, "that is all very well. Franziska is an excellent girl, as I have told you often—frank, kind, well educated and unselfish. But you can not have fallen in love with her in three days?"

"Why not?" says this blunt-spoken young man.

"Because it is ridiculous. If I meddled in the affair I should probably find you had given up the fancy in other three days; or, if you did marry her and took her to England, you would get to hate me because I alone should know that you had married the niece of an innkeeper."

"Well, I like that," says he, with a flush in his face. "Do you think I should care two straws whether my friends knew I had married the niece of an innkeeper? I should show them Franziska. Wouldn't that be enough? An innkeeper's niece! I wish the world had more of 'em, if they are like Franziska."

"And besides," says Tita, "have you any notion as to how Franziska herself would probably take this mad proposal?"

"No," says the young man, humbly, "I wanted you to try and find out what she thought about me; and if, in time, something were said about this proposal, you might put in a word or two, you know, just to—give her an idea, you know, that you don't think it quite so mad, don't you know?"

"Give me your hand, Charlie," says Tita, with a sudden burst of kindness. "I'll do what I can for you; for I know she's a good girl, and she will make a good wife to the man who marries her."

You will observe that this promise was given by a lady who never, in any circumstances whatsoever, seeks to make up matches, who never speculates on possible combinations when she invites young people to her house in Surrey, and who is profoundly indignant, indeed, when such a charge is preferred against her. Had she not, on that former Christmas morning, repudiated with scorn the suggestion that Charley might marry before another year had passed? Had she not, in her wild confidence, staked on a wager that assumption of authority in her household, and out of it, without which life would be a burden to her? Yet no sooner was the name of Franziska mentioned, and no sooner had she been reminded that Charley was going with us to Huferschingen—than the nimble little brain set to work. Oftentimes it has occurred to one dispassionate spectator of her ways that this same Tita resembled the small object which, thrown into a dish of some liquid chemical substance, suddenly produces a mass of crystals. The constituents of those beautiful combinations, you see, were there; but they wanted some little shock to hasten on the slow process of crystallization. Now, in our social circle we have continually observed groups of young people floating about in an amorphous and chaotic fashion—good for nothing but dawdling through dances, and flirting, and carelessly separating again; but when I dropped Tita among them, then you would see how rapidly this jelly-fish sort of existence was abolished—how the groups got broken up—and how the sharp, business-like relations of marriage were precipitated and made permanent. But would she own it? Never! She once went and married her dearest friend to a Prussian officer, and now she declares he was selfish because he won't bring her to stay with us more than three months out of the twelve. There are some of us get quite enough of this Prussian occupation of our territory.

"Well," says Tita to this long English lad, who is lying sprawling on the grass, "I can safely tell you this, that Franziska likes you very well."

He suddenly jumps up, and there is a great blush on his face.

"Has she said so?" he asks, eagerly.

"Oh, yes! in a way. She thinks you good-natured. She likes the English, generally. She asked me if that ring you wear was an engaged ring."

These disconnected sentences were dropped with a tantalizing slowness into Charlie's eager ears.

"I must go and tell her directly that it is not," said he; and he might probably have gone off at once had not Tita restrained him.

"You must be a great deal more cautious than that if you wish to carry off Franziska some day or other. If you were to ask her to marry you now, she would flatly refuse you, and very properly; for how could the girl believe you were in earnest? But, if you like, Charlie, I will say something to her that will give her a hint; and, if she cares for you at all, before you go away, she won't forget you. I wish I was as sure of you as I am of her."

"Oh, I can answer for myself," says the young man, with becoming bashfulness.

Tita was very happy and pleased all that day. There was an air of mystery and importance about her. I knew what it meant. I had seen it before.

Alas! poor Charlie.

A question as to who should be considered the breeder of an animal, the person who coupled the animals, or the person who owned the cow at the time of calving. A vote was taken on this question. It was in favor of calling the owner of the animal at the time of birth, the breeder. The debate was strong on this question, and was only carried by three votes. It is thought by some that at the next convention that decision will be reversed.

Uncle Tom's Department.



A. D. 1876.

A HAPPY NEW YEAR!

The good old time of Xmas has just passed, and another year has been ushered in. I think of all my kind nieces and nephews, and hope they all spent a merry Xmas, trusting that old Santa Claus gave them valuable Xmas boxes. We wish them all a Happy New Year; also thank them for their numerous puzzles, etc., and hope they will continue their contributions.

Puzzles.

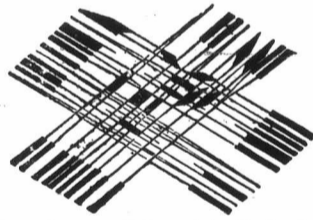
1.—CHARADE.

My first is to cleanse as, no doubt, you'll see;
My second, transposed, a spirit will be;
My third is a weight, and a heavy one, too;
My whole was a general, well known to you.

2.—CHARADE.

My first in winter, but not in spring;
My second in warble, but not in sing;
My third in Leicester, but not in York;
My fourth in knife, but not in fork;
My fifth in mustard, but not in meat;
My sixth in table, but not in seat;
My seventh in coffee, but not in tea;
My last in pond, but not in sea;
My whole will name, as you will see,
A celebrated victory. A. ERNEST.

3.



Read the above. We wish it to be read and known by every subscriber. If you cannot make it out, see answer in next month's number.

4.—HIDDEN RIVERS.

- 1. I am going to meet Isabel Bennett.
- 2. He is so fond of sugar, honey and other sweets.
- 3. Hush, Ann, only you need to go.
- 4. When I went to London, I led grandpa about.
- 5. He will soon be well, with exercise and amusement.
- 6. Where shall you go this summer? Seyton is going to Italy.
- 7. I want rent for six months now.
- 8. She is called Dirty Nellie.
- 9. Is it ham, especially cooked for me?
- 10. John Gray is in love with Elise Vernon.
- 11. It is mine; James Duval gave it to me.
- 12. It will enable mamma to go out to-day.

M. G.

5.—ILLUSTRATED REBUS.



6.—SQUARE WORDS.

- 1. Fourpence; to wake up; a weight; a place where a celebrated race is run; bones in the jaw.
- 2. Happy; a sweetheart; to elude; a close chair; an English river.
- 3. To efface; to drive back; a mouth; to take by force; a female name. C. W. NAMDAC.

7.—ANAGRAMS ON BRITISH POETS.

1. Some mats, John. 2. A., keep him as well, sir. 3. Fronts here boy. 4. O my, E., let us all go, carried. 5. Call me; both maps. 6. Torn, yes, Ann, fled. ALICE B.

8.

- 1—Three fishers at a ferry met,
Each with his blooming bride;
And in a skiff that held but two,
Desired to cross the tide.
- 2—Each husband was a doating dear,
And jealous to extreme;
And hence the ticklish question rose,
How they should cross the stream.
- 3—The skiff might cross as oft' as wished,
Each bride the boat could steer;
But might with no strange man be left,
Unless her own was near.
- 4—The night was dark, the ferry wide,
The wives a wanton three;
Then how did they the river cross,
And keep from scandal free?

Pilkington Consonby, Ont. CAROLINE HOWSE.

Answers to December Puzzles.

114.— o 117—E L B E
o o L O A D
o o B A L E
o o E D E N

113—Sir, between friends, I understand your overbearing disposition. A man even with the world is above contempt, whilst the ambitious are beneath ridicule.

115—Something. 116—He, her, hero, heroine. 118—Paper. 119—Plough. 120—Cow-herd. 121—Fur below. 122—Sunday.



MERRY-MAKING.

The above engraving represents the outlines of the chromo we give this year to persons that will take the trouble to show this paper to their neighbors and send us one new subscriber. There is much more in the chromo than you see in this engraving. The subject is good. It is handsomely executed. It will make a handsome ornament, and will be pleasing to all. Send \$1 and the name of the subscriber, and secure the chromo.

A FORMALITY COMPLIED WITH.—In Augusta, Me., no provision had been made last winter for feeding and lodging tramps. A vagabond went into a police station and wanted to sleep there. "We only lodge prisoners," said the Sergeant behind the desk.

"You only lodge prisoners," repeated the vagabond, meditatively.

"That's all," was the reply; you've got to steal something, or assault somebody, or something of that kind." "I've got to assault somebody, or something of that kind," again repeated the vagabond, thoughtfully. Then he reached across the desk with his long arm, and knocked the Sergeant off his stool, saying, as the officer got up, with his hand to his eye, "Give me as good a bed as you kin, Sergeant, cause I don't feel very well to-night."

HUMOROUS.

A SLIGHT MISTAKE.

The custom of naming villages after certain persons living in the neighborhood, has some disadvantages, as the following incident will show:—

A farmer in Western Pennsylvania had lived to a mature age and had never been on a journey by railroad. A new road having at last been made through part of his land, he was persuaded to pay a visit to Philadelphia, and, having been assured that he would not have to change, he placed himself comfortably in the corner of his seat and soon went to sleep.

After a long nap he was awoke by the train slackening speed, and presently the brakeman put his head into the car and cried out, in a commanding tone,

"Madison! Madison!"

The farmer started up and hurried out of the car as quick as possible.

In a moment the train proceeded on its way, and the man, looking around him, found that he was the only passenger that had alighted. He took a turn or two up and down the platform, and presently the ticket agent made his appearance. To him he said, "How far is it to Philadelphia, sir?"

"Well, that train that has just left will reach there in six hours. Did you want to go to Philadelphia?"

"Yes, to be sure. Here's my ticket. Don't it pass me to Philadelphia?"

"Yes, your ticket is all right; but why did you leave the train?"

"The man called out 'Madison' plainly enough; and that's my name, so I reckoned he meant me."

"O, Madison is the name of this station."

The farmer reached Philadelphia in safety by the next train, and, on his return home, told his friends of his mishap. One of them, especially, was very much amused, and laughed heartily, to whom the farmer retorted:

"I guess if he'd called out 'Tom Johnson,' you'd have got out mighty quick, too."

The following anecdote is related of Mr. Sheaf, a grocer in Portsmouth, N. H.:

It appears that a man had purchased some wool of him, which had been weighed and paid for, and Mr. Sheaf had gone to the desk to get change for a note. Happening to turn his head while there, he saw in a glass which swung so as to reflect the shop, a stout arm reach up and take from the shelf a heavy white oak cheese. Instead of appearing suddenly and rebuking him for the theft, as another would, and thereby losing his custom for ever, the crafty old gentleman gave the thief his change as if nothing had happened, and then, under the pretence of lifting the bag to lay it on his horse for him, took hold of it and exclaimed:

"Why, bless me, I must have reckoned the weight wrong."

"Oh, no," said the other, "you may be sure you have not, for I counted with you."

"Well, well, we won't dispute about the matter, it is easily tried," said Mr. S., putting the bag into the scales again. "There," said he, "I told you so—I knew I was right—I made a mistake of nearly twenty pounds; however, if you don't want the whole you needn't have it—I'll take part of it out."

"No, no!" said the other, staying the hands of Mr. S. on their way to the strings of the bag, "I guess I'll take the whole;" and he did, paying for his honesty by receiving the skim-milk cheese at the rate of forty-four cents a pound, the price of the wool.

"Taffy pulls" are all the rage. This is the way they are said to be conducted: The ladies and gentlemen take their positions the same as in an opera reel; each couple then seize the taffy in their teeth, and whichever couple can stretch it the furthest without breaking will be the first to require the services of a minister. One young girl got hold of a piece of India rubber, and when she had got it to its utmost tention she slipped her grip. The young man was the first to require the services of an apothecary.

A man who had been arrested as a vagrant, protested he had a regular trade and calling, to wit: smoking glass for total eclipses of the sun; and, as these occur only a few times in a century, he was not to blame for being out of employment a good deal.

Minnie May's Department.

Worry.

Things are pretty well balanced in this world, so far as comfort goes, and I begin to believe that, high or low, all have their tribulations. Fishes are hooked, worms are trodden on, birds are fired at. Worry is everywhere. Poor men's wives worry because the bread won't rise, or the stove don't draw, or the clothes-line breaks, or the milk burns, or the pane of glass is mended with putty, or they can't afford to hire help. Rich men's wives worry because the preserve dish is not the latest pattern, or because somebody finds out how a party dress is trimmed before the party happens, or because some grandee's wife overlooks them, or because their help sauced 'em, breaks up tea-sets, spoils dinners, gets drunk, and cuts up sheets into underclothes. Causes vary, but worry averages about the same. The scale of miles is different on different maps, and places remain just as far apart, and so do humanity and content.

Social Life Deceptions.

DEAR MINNIE MAY,—This world is full of deception. I see it every day and it makes my heart ache many and many a time. I wish the time would come when every one would do as he would be done by! Then there would be no need to doubt our neighbors or friends, but we should have full confidence in them, and feel respect and love for all. Let us, dear friends, try this plan, and who knows how much good may come of it?"

I have known some ladies who, when they met you, would press you with all apparent earnestness,—“Do, dear, come home with me to spend the day. We shall have such a good visit!” And as soon as you had passed on would say,—“I am glad she refused to come, for I really did not want her to-day. I must finish making over my old dress, and she thinks I give out all my sewing.” Now, how much better to have let her friend go home uninvited, than to act out two lies. Or she better have told the truth. Let us try to act in a straightforward manner, never asking any one we do not want to have come. This is only one little instance of deceit out of a whole multitude I might mention, did time and space permit

J. B. C.

Recipes.

STEWED KIDNEYS.

Soak the kidneys in water; dry them in a bowl and cut fine; dredge them well with flour, and put them in a saucepan with a piece of butter; when it is browned in the butter put in salt, pepper, and a little boiling water; cover the pan closely, and stew till tender; add some wine and catsup. Serve hot.

FANNIE WALKER.

HARD BISCUITS.

Warm two ounces of butter in as much skimmed milk as will make a pound of flour into a very stiff paste; beat it with a rolling-pin and work it very smooth; roll it thin, and cut it into round biscuits; prick them full of holes with a fork. About six minutes will bake them.

ELIZABETH HORTON.

MINCE PIES.

5 quarts meat, 10 quarts apples, 5 quarts boiled cider, 2 quarts sugar, 1 quart molasses, 1 pint vinegar, 1 cup suet or butter, 1 tablespoonful of allspice, 1 do. cloves, 6 do. cinnamon, 3 do. pepper, 2 do. salt, 1 do. ginger, 2 lbs. raisins. Then shut your eyes and throw in as many more as you like. This will make five gallons. Cook all together. Stir, to keep from burning.

GINGER SNAPS.

1 cup molasses, 3/4 of a cup of brown sugar, 1 cup butter, 1 teaspoonful soda, 1 teaspoonful ginger. Roll them, and bake in a quick oven; dissolve the soda in a tablespoonful of hot water.

FRENCH POLISH.

1 oz. of white wax, 1 oz. of gum copal, 1 oz. of gum arabic, 4 oz. gum impantine, 2 oz. linseed oil.

TO CORN BEEF.

Put into a boiler enough water to cover your meat when in barrel, and bring it to a boil. Then dip each piece of meat in it, letting it remain about a minute; after dipping meat, add to water 6 lbs. of salt and 2 ounces of saltpetre for each 100 lbs. of meat, and bring it to a boil; skim it and let it cool, then pour on meat in barrel.

Latest Fashions.

The newest veils are quite long, and have square corners below, while the top is rounded, hemmed and a string run through the hem to tie the veil round the bonnet. They are made of black Chantilly net, like fine tulle without dots, and are finished with an inch-wide hem that has a row of fine tiny gold beads at the top of the hem for bonnets that have gilt trimmings, while jet beads are used on veils for other bonnets. They measure three-quarters of a yard in length when finished. They are tied round the bonnet, fastened behind the neck to make them smooth across the face, and the right-hand corner is then thrown back over the shoulder.

The small caps that young ladies, and particularly brides wear, this season, are generally composed of very narrow old lace, which is arranged round and round on a net foundation, and then a large rosette, resembling one on a baby's bonnet, is added on the left side. This rosette is made of pink or blue pinked-out silk, and looks like an enormous cockade. This style of cap requires the wearer's hair to be cut short in front, and frizzled or curled, so as to look light and feathery. For those who adopt smooth hair over the forehead, the caps with round crowns and fan-shaped curtains are more in character; the ribbons used for trimming these is fringed out, so that, there being no sudden lines when the bow comes to an end, the effect is very light and feathery-looking.

Let the ladies erect a monument to the inventor of the polonaise! After being cast into the shadow for a year or more by its French neighbors, the basque and overskirt, the polonaise has reappeared, more beautiful and more useful than ever before, with its new names of "Princesse" and "Marguerite." Let the economical take a good, wide, old-fashioned skirt, place upon it a paper pattern of either of these two shapes, and thereby secure an excellent and useful garment to wear with a black skirt or whatever color it may match. Many a good skirt of silk or Cashmere consigned to the family piece-pag, may thus be resuscitated in the polonaise. Particularly does this advice apply to the little people's costumes. Otherwise there is no change in children's fashions, except in material. For outside wraps, little girls from 8 to 15, wear the fashionable French sacque, princesse dress, kilt skirts and long pelisses. Great simplicity is observed in making these graceful wraps. The dark cloth colors used are no longer overloaded with masses of embroidery and other trimming. It is considered more stylish to have the edges simply bound, hemmed or corded. The favorite fabrics for costumes are Cashmere, Spitzbergin cloth, and any variety of camel's hair, with silk or wool sleeves and skirts. Another style is the long, half-fitting sacque, with broad back and square side pockets, resembling boy's coats. It is either single or double-breasted, and is trimmed with wide Titan braid or fur. The princesse dress is worn by mother's as well as their young daughters. The front has the waist and skirt in one, may be either single or double-breasted, and is buttoned its entire length. The upper part of the back is a long-waisted Marguerite basque, with a sash across the end of it, under which the kilt skirt is added.

An Improvement on Jute.

Perhaps many of our readers do not know how useful the hair is that falls from the head when combing, and would be surprised to find how soon they could accumulate an ounce by carefully saving it. In doing so they should shake the dust from it, and have a little box placed on their toilette table, and will find it just as easy to put it in that as to throw it away. When they have two or three ounces gathered take to the hair-dresser and have it made into a nice switch, curls, prim puffs or braids for 50 or 75 cts. an ounce. When done they will dispense with that horrible jute which not only looks untidy but is injurious to the head.

Soap on the Face.

There is rarely, if ever, any need of using soap on the face, except for very dirty people, or where there is much oil secreted by the skin. Pure soft water is generally quite sufficient. As a rule, avoid the very free use of soap on the skin, except the mildest kinds. Face powders injure the skin just as dirt does, by obstructing pores. If there is any poison in the face powder, as there often is, it only adds poison to dirt, and makes the matter so much the worse.

How to Spend our Winter Evenings.

The pleasure of winter evenings is mostly connected with friendly gatherings, and the delightful interchange of interest and sympathy. Though it is very desirable that something useful and worth having should be got out of the winter evenings it must not be forgotten that enjoyment may be gained as well. "All work and no play makes Jack a dull boy." I take great pleasure in relating to you how we spent evenings last winter:—About a dozen or more of us would manage to meet on a particular night once a week, at each other's houses, when we made a rule of wearing our ordinary dresses, and the refreshments provided were limited to sandwiches and cake, with a glass of wine or something.

We would break up our meeting at a stated hour. We would have all sorts of amusements to suit the various tastes, such as music, dancing, games, discussions, recitations, charades, reading and spelling. We constantly varied the programme of the evening—one night we would relate the most peculiar incident that happened in our own individual experience. On two or three occasions we chose a particular author, and each one gave an opinion of him and his works and illustrations. Another night we held a discussion upon the ADVOCATE, which was read by many of our number. Altogether, we had some very interesting and beneficial evenings, and we are eagerly looking forward to a repetition of them. Now, I hope some of your young readers will inaugurate the new year by uniting in circles and spending the long winter evenings in this amusing and instructive manner.

J. W. MILLS, Bosanquet.

Importance of Reading.

In connection with the above correspondent's good suggestions on "spending the winter evenings," a few words on the importance of reading will be to the point:—No matter how obscure the position in life of an individual, if he can read, he may at will put himself in the best society the world has ever seen. He may converse with the greatest heroes of the past; with all the writers in prose and poetry. He may learn how to live, how to avoid the errors of his predecessors, and to secure blessings, present and future, to himself. He may reside in a desert, far away from the habitations of man; in solitude, where no human eye looks upon him with affection or interest, where no human voice cheers him with its animating tones, if he has books to read he can never be alone. He may choose his company, and the subject of conversation, and thus become contented and happy, intelligent, wise and good. Young people should heed these truths, but not forget to guard yourself against fruitless reading.

Nine tenths of the reading done is, probably, to pass time, or procure a pleasant excitement for unoccupied hours. Few who read do it with any definite purpose of increasing their stock of knowledge or ideas, and few, therefore accomplish any useful purpose by reading. On the contrary, it becomes to them a kind of dissipation, the reaction from the interest of which leaves them more dull and unsatisfied than before. Few stories but possess some motive worth tracing, some character with points of interest, if we read it carefully and with the intention of finding out what there is in it deserving of praise or blame. But the army of story readers stop for nothing till they get to the end of the volume, and know nothing in regard to what they have read, except that all the troubles came to a happy termination, and the hero and heroine were married at last. Descriptions of natural scenery, details of individual character, the careful working out of results from the incidents and individualities grouped together—all these are "skipped," overlooked, never thought of; in fact, the book itself is forgotten, or, at least, no clear idea of its features is retained after forty-eight hours have passed.

Such reading as this is worse than useless—it wastes valuable time, and furnishes the brain with nothing in return. If a book is not worth reading with care, if it adds nothing to our store of knowledge, if it supplies no food for thought or discussion, it is not worth reading at all. Indeed, this is a very good test to apply to a book, and one which, if it could be properly applied by the class of readers who would be most benefited by it, would reduce their stock of literature to a very low ebb.

Patrons of Husbandry.

Officers of Dominion Grange for 1876.

At the last meeting of Dominion Grange the following officers were elected for the ensuing year:— Master, S. W. Hill, Ridgeville, Ont.; Overseer, H. Leet, Danville, Que.; Lecturer, S. White, Charing Cross, Ont.; Steward, D. Nixon, Grimsby, Ont.; Asst. Steward, H. S. Losse, Norwichville, Ont.; Chaplin, W. Cole, Sarnia, Ont.; Treasurer, J. H. Bull, Downsview, Ont.; Secretary, W. Pemberton Page, Fonthill, Ont.; Gate-Keeper, J. Duncan, Richmond Hill, Ont.; Ceres, Mrs. Dyas, Toronto, Ont.; Pomona, Miss Whitelaw, Meaford, Ont.; Flora, Mrs. Phillips, Schomberg, Ont.; Lady Asst. Steward, Mrs. Losse, Norwichville, Ont.; Executive Committee, J. Manning, Schomberg, Ont., B. Payne, Delaware, Ont., W. S. Campbell, Brantford, Ont., A. Gifford, Meaford, Ont., Jas. Daly, Newburg, Ont.

New Granges.

- 258. Union—George Wood, Master, Sebringville, P. Q.; Peter Smith, Secretary, Sebringville.
259. Artemesia—Jacob Leets, Master, Vandeleur; John Weber, Secretary, Vandeleur.
260. Gordon—John Kerr, Master, Campbellton; A. McIntyre, Secretary, Campbellton.
261. Islington—W. Montgomery, Master, Islington; A. F. Thompson, Secretary, Islington.
262. Collingwood—Martin Tellerby, Master, Thornbury; Chas. Hunt, Secretary, Thornbury.
263. Low Banks—Wm. Ayers, Master, Low Banks; John Root, Secretary, Low Banks.
264. Mayflower—Dugald Ferguson, Master, Port Stanley; Robert Jelly, Secretary, Port Stanley.
265. Mount Hope—David Dear, Master, Collingwood; Alex Malcolm, Secretary, Collingwood.
266. Maple Grove—John Sharon, Master, Wardsville; David Gibb, Secretary, Wardsville.
267. Agincourt—Adam Ball, Master, Agincourt; George Elliott, Secretary, Agincourt.
268. Charlotteville—J. W. Shearer, Master, Walsh; Ira Mabce, Secretary, Walsh.
269. Unionville—H. P. Crosby, Master, Unionville; Wm. Robinson, Secretary, Unionville.
270. Magar—Wm. Morgan, Master, Whitevale; D. S. Turner, Secretary, Whitevale.
271. Mount Sion—Hugh Mobra, Master, Kinsale; J. E. Jones, Secretary, Balsam.
272. Milford—C. McCartney, Master, Milford; J. Ackerman, Secretary, Milford.
273. Wallacestown—John Galbraith, Master, Iona Station; J. R. Gore, Secretary, Wallacestown.
274. Argyle—J. P. McIntyre, Master, Tiverton; J. McNaughton, Secretary, Tiverton.
275. Jarvis—Henry Ivey, Master, Jarvis; S. Willcocks Secretary, Jarvis.
276. Hay Bay—Nelson Woodcock, Master, Hay Bay; Albert Parks, Secretary, Napanee.
277. Gasport—M. C. Bagart, Master, Gasport; T. W. Bagart, Secretary, Gasport.
278. Eldorado—Hiram Andrews, Master, Harksburg; W. Hartman, Secretary, Harksburg.
279. Mona—John Rusk, Master, Mona Mills; Henry Carson, Secretary, Mona Mills.
280. Springfield—George Vickers, Master, Griersville; E. E. Knott, Secretary, Griersville.
281. Willowdale—W. Gauiding, Master, Newton Brook; J. R. Lindsey, Secretary, Newton Brook.
282. Kelvin—Wm. Freeman, Master, Scotland; A. Freeman, Secretary, Kelvin.
283. Silver Hill—
284. Craigleith—Andrew Fleming, Master, Craigleith; John Lenhall, Secretary, Craigleith.
285. Kendall—Neil Stewart, Master, Kendall; John Henry, Secretary, Kendall.
286. Rond Eau—A. R. McRitchie, Master, Marheth; Wm. Reynolds, Secretary, Marheth.
287. South Stukely—Wm. R. Knowlton, Master, South Stukely, Quebec; N. D. Jenne, Secretary, South Stukely, Quebec.
288. Maple Valley—J. Dick, Master, Maple Valley, Ontario; H. A. Hay, Secretary, Maple Valley, Ontario.
289. Howard and Oxford Union Grange—J. H. Eberle, Master, Palmyro; Colon Luxton, Secretary, Palmyro.
290. Cherrywood—John Thom, Master, Cherrywood; James Laughlin, Secretary, Cherrywood.
291. Brougham—E. Barclay, Master, Brougham; N. T. Stevenson, Secretary, Brougham.
292. Queen of the Lake—James Sudden, Master, Lakelet; R. H. Ferguson, Secretary, Lakelet.
293. Venus Star—John McClure, Master, Churchville; James Dale, Secretary, Churchville.
294. Bolton—Robert Rankin, Master, Chatham; Donald Angus, Secretary, Chatham.
295. Union—Wm. Sollitt, Master, Cayuga; W. T. Anthony, Secretary, Cayuga.
296. Evelyn—James Evans, Master, Evelyn; John Mooney, Secretary, Evelyn.
DIVISION GRANGES.
22. Oxford—Johnathan Jarvis, Master, Ingersoll; Thomas Choate, Secretary, Ingersoll.
23. Beaver Valley—
24. Prince Albert—Robert Gardner, Master, Farquhar; James Gillespie, Secretary, Cromarty.

County Granges.

We believe the County Grange will ultimately become a very important legislative and executive body of the Order.

The Subordinate Grange serves to bring together neighborhoods, to promote sociability, develop and cultivate home talent, allay local animosities, prevent litigation, create a brotherly feeling, and improve the methods of conducting the operations of the farm and the household. But its efforts and influence are chiefly confined to the various details which affect the individual interests of its members. In order to combine the influence and efforts of Subordinate Granges, higher organizations are needed. The interests of our membership are too diverse. In some sections hops are the great staple, in others grain, in others fruit, and in still others butter and cheese, and in like manner the tastes and habits vary. This being so, some intermediate organization is imperatively needed, and county granges exactly meet the case. The interests of the people of each county are substantially identical, and through a county grange those common interests can be cared for with the combined wisdom and power of the whole body of Patrons in the county.

The county grange should be officered by the best men and women in the county, and they should look upon their offices as positions of trust and responsibility.

The Master should see to it that the subordinate granges of the county are efficiently organized and thoroughly posted in the unwritten work of the Order. The Lecturer should feel it incumbent upon him to see that the subordinate granges are thoroughly instructed in the principles and practices of the Order, and that the general interests of the Order, in an educational and social point of view, are thoroughly cared for. He should encourage the establishment of grange libraries. The Overseer should, as a matter of duty and pride, see to it that when he retires from his position at the end of the year, the methods of culture and the general results of farming in his county are better, by reason of his suggestions and example, than when he entered upon the duties of his office. The Secretary should put himself in close and frequent communication with the secretaries of all the subordinate granges in his county, and should collect, arrange and report from time to time all facts possible relative to crop prospects, results, &c. Ceres, Pomona and Flora, should constitute an active, working committee to advance the interests of their sex in the county, and should be ever foremost in good works. The Executive Committee should actively take charge of the business interests of the Order in their county. They should be in constant communication with the committees of the subordinate granges, and thus knowing the wants of all, should provide the means of massing orders and purchasing at the best attainable rates, and of moving and selling crops on the most favorable terms.

Try This Plan.

The ladies ordinarily have too little to say in grange discussions, particularly when financial questions, or questions on political economy are discussed. There should be a portion of each evening set apart for their special benefit, during which such topics as they are most interested in, should be considered. There should be domestic economy, home ornamentation, relations of parents to children, education, woman's rights, influences, sphere, duties, etc. Of course, all questions proposed should be open to free discussion, and all who desire ought to have the privilege of participating, but let the ladies lead off and conduct the discussions of this portion of the evening.

One grange we know of pursues this course with happy results—enlisting every female member into the discussions, that hour passes off to the interest of all present, male and female. Every farmer's wife who belongs has given her method of making bread, pies and cakes; her method of washing and making butter, fancy work, and all the innumerable little things of this nature, which go to make life more enjoyable. As a result, each housewife has the benefit of the experience of thirty or forty other housewives, and the knowledge thus imparted is of great benefit. These look like little matters to discuss or investigate, but he who neglects all the little things of life, loses most of its advantages—for life is made up of little things.—Ohio Farmer.

To the Editor of the ADVOCATE.

Benefits of the Grange.

The Grange is undoubtedly the best school ever established for the education of farmers, showing them what they need and how to get what they need. In purchasing supplies, farm machinery, &c., our object is to do so as cheaply as possible, and at the same time allow a living profit to those from whom we purchase. In our efforts to cheapen these supplies and to benefit ourselves financially, we should not lose sight of the fact that it is the prosperity of the whole country, the prosperity of other branches of business as well as our own, that will give permanent prosperity to us. Each branch of business serves an important purpose, and is indispensable, although we claim agriculture as the foundation upon which all other interests rest, we are, to a certain extent, dependent upon these interests for our success. Taking a broad and scientific view, all are producers. They are such in so far as they are instrumental in satisfying the wants of men.

The lack of intelligent and harmonious co-operation among the agricultural classes, has given occasion, not unnaturally, on the part of organized capital, to take advantage of the situation, and the result is an unfair distribution of the rewards of labor. To correct this is one object of the order, and in doing this we should be careful not to allow an over zealous desire for reform to lead us into the extremes we wish to correct in others.

We cannot brag about any great reform, or perfect our organization in a single day. Many evils will undoubtedly creep in, especially if we take hasty and inconsiderate action. It will only be after years of experience and patient toil that we can look for anything like perfection in our working system. Much good would be done to both manufacturers and farmers by closer relations and a more intelligent understanding between them, and, as Grangers, we are ready to receive and confer with manufacturers and others, with the ultimate view of mutual benefit to all.

The Executive Committee of the Dominion Grange will meet in Brantford Tuesday, Feb. 1st. It is the intention of the Committee to do all in their power to further the object of the Order, and to this end, ask for, and will gladly receive, suggestions and information from members throughout the country, believing that it is by the hearty co-operation of all that we can expect to obtain the full benefits of the Order.

They will also welcome correspondence from manufacturers and dealers, with a view to the general benefit of all.

Correspondence, in relation to the above, addressed to the Secretary, will be acknowledged, and laid before the Committee for consideration.

W. PEMBERTON PAGE, Sec. Dominion Grange.

The Patrons of Husbandry are holding open meetings and socials in various parts of the country. We happened to drop into one of these near Brantford. The refreshments were cheering, the music and amusements entertaining, and the addresses were instructive and encouraging. A happy and pleasant time was spent, but many things were done and said, as at any other really good meeting, which those who do not go will not know. Various plans were shown whereby the farmers were to be benefited by the organization. The Patrons are evidently laying the axe to the roots of some of the unjust abuses that have crept into general use. The unjust discrimination of railways was touched on. Suggestions were made for obtaining better prices for meat, showing that by strict honor, prompt management and better feeding, beef might be placed in the British market that would compete with the meat used there for which twenty to forty cents a pound is paid.

It has been decided that the ladies are eligible to any office to which the members of the Grange may elect them. We believe that some of the Subordinate Granges would have their records kept in better order, and with more promptness, if they would elect lady secretaries.—Es.

Our Home Journal, published in New Orleans, has sent in to the State Grange of Louisiana its resignation of the position of organ to that body, believing, as it says, that it may thereby the better serve the interests of agriculture throughout the south, and the grange interests in general. At the same time they offer to publish, free of charge, any matter of general interest to the Order in the State or country at large, or of general value to the agricultural welfare of the South.

Education.

The farmers of Canada have now twenty-nine million dollars in the various moneyed institutions in Canada. A very large proportion of this is owned by persons who have saved it at the expense of their families, who have been kept toiling instead of fitting themselves to take the positions they ought to hold, that is, to be the legislators of the land. How few of our farmers' sons are prepared for these positions! Surely it must redound more to the disgrace rather than to the honor of many who see their families in ignorance, instead of giving them knowledge, while having the means to do so laying in some bank unused. We would advise some that we know can well afford it to read the advertisements in this paper. The educational colleges of this city have a wide-spread reputation. We by all means advise you to send your boys and girls to the best schools you can afford to; it is all nonsense—the poor excuse we know many wealthy farmers will make: "Yes, it is very good to have education, but our school is good enough;" they cannot afford to send John or Mary to a better one. At the same time they are hoarding property every year.

To Correspondents.

We regret that the contribution from Mr. Messenger was received only after our paper had gone to press. Other contributions also had to be deferred from the same cause till our next issue. We should have all communications not later than the 20th of the month.

GARDENING FOR PLEASURE.—Many of our readers no doubt already have the works on gardening, written by the senior member of the firm of Peter Henderson & Co., seedsmen and florists, 35 Cortlandt Street, New York. We are glad to see that Mr. Henderson has just written a new book, expressly to meet the wants of the novice in gardening, and which he calls "Gardening for Pleasure." It is written so plain that any one, however ignorant in gardening matters, will have no difficulty in putting its teachings into successful practice. This book, as well as his former ones, is offered by Peter Henderson & Co., in their advertisement in another column.

Mr. James Vick's Seed Catalogue for 1876 is on our table. The illustrations are nearly all new, and the catalogue is very handsomely got up. If you wish to keep posted on the choicest flowers, send 25 cts. to Rochester and get it.

SHORTHORN SALE.—The attention of our readers is called to the sale of valuable shorthorns by E. Jeff, Bond Head, on the 13th January, 1876.

Attention is called to the advertisement of E. Moody & Sons, Lockport. This house is one of the oldest and largest in the Nursery trade in the United States.

A DOUBLE white camelia, six feet high, and same width, brought \$80 at a recent sale of plants in England.

A DETROIT newspaper is responsible for the statement that the Michigan farmers owe the merchants \$5,000,000.

EIGHTY-FIVE cows and calves died recently at Morristown, N. J., from disease caused by eating the half-decayed aftermath on the overflowed meadows.

THE purchase of a tract of 42 square miles from the Kansas Pacific Railway, to be settled by English and Scotch farmers, has just been effected.

A KANSAS man, during the "locust visitation," corralled about 160 acres of the festive grasshoppers, and has been shipping sardines to the east ever since.

At a recent sale at Monticello, Ill., an imported Percheron stallion was sold at \$1,525, an imported Norman for \$1,600 and an imported Belgian for \$1,525.

THE starch factory at Washburn, Maine, has had a successful run. That at Presque Isle closed recently. The factory at North Fairfield has grated 40,000 bushels of potatoes.

Stock Sales.

John Snell's Sons, Edmonton, Ont., sold on Nov. 30th, to N. H. Gentry, Sedalia, Missouri, three imported Berkshires, boar and two sows, for \$1,600, viz.: Lord Liverpool, \$700; Royal Duchess, \$400, and Sovereign Lady, \$500. Messrs. Snell report the demand for Berkshires (good ones) greater than they ever knew it, and at higher average prices than ever before.

Among their recent sales to parties in Canada are the following:—To Amos Cutler, Lobo, one Berkshire sow by Lord Liverpool, in farrow to British Sovereign. Laing Bros., Owen Sound, two sow pigs and one boar. Rev. W. Stewart, Darling, boar and sow. Andrew Caldwell, Jarvis, boar and sow. A. Burpee, Sheffield, N. B., one boar. Wm. Spence, St. Mary's, boar pig and ram lamb. A. Kains, Byron, two sow pigs and one boar. M. B. McIntyre, Renfrew, boar and sow, and two Cotswold ewe lambs. George Solton, Paisley, one boar pig. Thomas Weaver, Paisley, six Cotswold ewes. Wm. Binions, Matilda, one boar pig. Dennis Hawkens, Sepoy, one boar pig. Ontario School of Agriculture, Guelph, 10 Cotswold ewes, one imported ram, one ram lamb. George Wilson, Toronto Tp., one ram lamb. R. D. Foley, Bowmanville, one Berkshire sow. James Gardhouse, Etobicoke, one ram lamb. H. Snell, Clinton, two ram lambs. B. Snell, Willscroft, one ram lamb. Thos. Duff, Bradford, one ram lamb. B. Watson, Edmonton, one ram lamb. Samuel Ferguson, Brampton, one ram lamb. Donald Fraser, Ernestown, one ram lamb. A. Ferroll, St. Bernard, Quebec, one shearing ram. Wm. Ward, Chiquacousy, one ram lamb. Wm. Wilson, Ashgrove, one ram lamb. Wm. Murray, Chesterfield, one boar pig.

The Joint Sale at Toronto.

The sale in Toronto on the 3rd was very successful, as the following figures will show:

J. R. CRAIG'S SALE.

COWS AND HEIFERS.

Kirklevington Duchess 18th, M. H. Cochrane, Compton, Can., \$4,000.
Kirklevington Duchess 8th, F. J. Barbee, Paris, Ky., \$2,520.
Duchess of Raby, S. Beattie, Toronto, \$3,050.
Peri of Malvern, W. E. Simms, Paris, Ky., \$1,425.
Grace 4th, S. K. Streater, Cleveland, Ohio, \$3,300 (Resold to J. R. Craig for \$3,450).
Rose of Cambridge, W. E. Simms, \$2,350.
Duchess of Huron, J. V. Griggsby, Winchester, Ky., \$2,000.
Duchess of Cambridge, A. L. Stebbins, Port Huron, Mich., \$2,750.
11th, Duchess of Springwood, J. Snell's Sons, Edmonton, Ont., \$2,000.
5th, Duchess of Springwood, Hon. Geo. Brown, Bow Park, Ont., \$2,050.
12th, Duchess of Springwood, W. E. Simms, \$2,210.
13th, Duchess of Springwood, T. L. McKeen, Easton, Pa., \$1,600.
Careless 8th, M. H. Cochrane, \$2,400.
Duenna 8th, M. H. Cochrane, \$575.
Cambridge Queen 5th, same, \$500.
Moselle, J. Snell's Sons, \$1,225.
Ruby Duchess, J. V. Griggsby, \$1,975.
Oxford's Princess of Athelstane, Hon. Geo. Brown, \$300.
Lady Blanche 3rd, J. Snell's Sons, \$475.
Lady Seraphina 6th, same, \$1,300.
Seraphina Duchess, W. M. Miller, Preckering, Ont., \$950.
Sanspareil 11th, Hon. Geo. Brown, \$625.
Seraphina 1st, F. W. Stone, Guelph, Ont., \$500.
Seraphina 3rd, W. S. Slater, Webster, Mass., \$400.
Seraphina 6th, C. S. Smith, Acton, Ont., \$485.
Lady Le Moore and b. c., W. S. Slater, \$700.
Sensation, C. S. Smith, \$300.
Isabel 2nd, Col. D'A. Bolton, Cobourg, Ont., \$230.
Isabel 3rd, M. H. Cochrane, \$305.
Isabel 5th, J. Pipe, Guelph, Ont., \$150.
Beauty, J. Snell's Sons, \$160.
Maid of the Lea, same, \$440.
Young Rosalie, J. Pipe, \$100.
Belle of King, J. Snell's Sons, \$205.
Nettie, M. W. Terrill, Middlefield, Conn., \$130.
Geneva's Rose, H. Meredith, Cambridge City, Ind., \$275.
Minerva, F. J. Barbee, \$190.
Isabel 4th, Hon. Geo. Brown, \$130.
Hattie Hoyt, J. Guardhouse, Highfield, Ont., \$145.

BULLS.

17th Duke of Airdrie, A. McClintock, Millersburg, Ky., \$4,500.
2nd Geneva Lad, N. G. Pond, Millford, Conn., \$480.
Knightly Duke, H. G. Leuty, Britannia, Ont., \$1,000.
The Squire, A. Elliott, Galt, Ont., \$110.
Lord Lorne, W. Williams, Burlington, Vt., \$250.

SUMMARY.

39 cows and heifers, av. \$1,170.00—Total, \$45,065.
5 bulls, av. \$1,268.00—Total, \$6,340.
44 head, av. \$1,181.92—Total, \$52,905.

COL. J. B. TAYLOR'S SALE.

COWS AND HEIFERS.

Peri Oxford, T. L. McKeen, Easton, Pa., \$1,700.
Bonny Red Rose 2nd, T. L. Harrison, Morley, N. Y., \$1,150.

Rosa Sharon 1st, Hon. Geo. Brown, Low Park, Ont., \$450.
Rosa Sharon 3rd, same, \$350.
Rosa Sharon 4th, same, \$310.
Tuberosa 12th, A. M. Winslow's Sons, Putney, Vt., \$1,000.
Lady Barrington 2nd, B. B. Groom, Winchester, Ky., \$925.
Lady Barrington 3rd, Hon. Geo. Brown, \$500.

SUMMARY.

8 females, av. \$708.12—Total, \$6,385.

MR. B. SUMNER'S SALE.

COWS AND HEIFERS.

Grace Sharon, A. McClintock \$2,000.
Alice Maud 3rd, Hon. Geo. Brown, \$250.
Nelly Gwynne, W. S. Slater, \$750.
Oxford Gwynne 3rd, same, \$700.
Madora 14th, same, \$1,000.
Constance of Lyndale 3rd, N. G. Pond, \$1,500.
Constance 7th, F. J. Barbee, \$1,600.
Lady Franklin, Col. D'A. Bolton, \$200.
Miss Cambridge, Hon. Geo. Brown, \$300.
Oxford Lass 8th, D. E. Hulton, Portageville, Mich., \$370.
Sunrise, M. W. Terrill, \$1,400.
Goldendrop 11, S. W. Jacobs, West Liberty, Iowa, \$1,100.
Fulvia, M. W. Terrill, \$100.
Onaida Rose, B. B. Groom, \$3,700.
Vanda, M. W. Terrill, \$150.

BULL.

Baron Hubback 2nd, M. W. Terrill, \$2,500.

SUMMARY.

15 cows and heifers, av. \$1,108.00—Total, \$16,620.
1 bull, \$2,500.
16 head, av. \$1,195.00—Total, \$19,120.

At the second day's sale several cattle were sold at prices ranging from \$600 down to the low figure of \$25. The sheep brought \$45 per pair.

At the sale of horses we noticed the following prices:—Prince of the West, a pure Clydesdale stallion \$2,450; North Lincoln, imp. stallion, \$1,300; Luicks-all, imp. Cleveland stallion, \$1,775; Donside Champion, Clydesdale stallion, \$1,750.

Commercial.

The Speculative Situation of Wheat.

In breadstuffs, as well as in banking and railway stocks, there is active speculation. Money, in a great measure, controls the markets and prices, and this season its power has been widely felt. It was well known that the quantity of No. 1 wheat was not great, and that soft and damp samples would be in unusually large proportion. To profit by this condition of the produce, a combined effort has been made by wealthy grain merchants to control the stock of prime spring wheat in America. They expected that there would be an unusually strong demand for prime samples, from the comparatively large quantities of inferior and, in many instances, damaged grain. All the prime wheat offering was bought up rapidly by the speculators, sometimes at prices not warranted by prices in the English markets. The speculators have, as yet, been disappointed of obtaining the expected high prices. Second class wheat has been bought by consumers and converted into flour, without mixing with the higher grade. The difference in price between prime and second was so great that millers would not pay it, and hence speculators have their full purchases in hand. There has been, so far, no activity in the grain markets, and the large stocks in the several grain centres and shipping ports precludes the expectation of any advance in prices for some time.

The stock of wheat in the country is unprecedentedly large. On the first of December there were in New York and Brooklyn stores and harbors, canals and rivers, 8,500,000 bushels. In Buffalo, Milwaukee and Chicago, there were over 6,000,000 bushels, very much of it below the grade of No. 2. At the same date there were in Liverpool 800,950 quarters of wheat. In London the comparative stock of wheat on the 1st of Dec. was 596,950 bushels, in 1875, to 162,192 bushels in 1874.

With such large stocks available, we can see no prospect of an early advance in prices. The holders of prime wheat may hold on to their stocks, but the consumption of inferior grades continues, and of the receipts of these there is no diminution in the markets. As was to be expected under the circumstances, there has not been a decided advance in prices.

The prices of wheat are, however, as low as they are likely to be this season. The effect of the growing crop upon prices is very great, and the prospect for the English crop of wheat of 1875 is not very good. The weather at the time of sowing the fall crop was unfavorable. There was a continued fall of rain, so that the area sown was much restricted, and of that sown much was got in when the land was in bad condition, and some of the seed perished in the ground.

Liverpool, Dec. 22.—Flour, 25s 6d; Wheat (Red) 10s; Red Winter, 10s 3d; White, 11s; Corn, 33s; Peas, 41s; Pork, 87s; Cheese, 54s.

Toronto Markets.—White Wheat, per bushel, 95c to \$1.02; Spring Wheat, 95c; Barley, 65c to 83c; Oats, 35c; Peas, 70c; Hay, per ton, \$14 to \$17; Butter, rolls, 20c to 24c per lb; Keg or Crock, 17c to 20c.

New York.—Wheat dull and unchanged; \$1.09 to \$1.50 per bushel; Barley, 85c; Corn, 68c to 74c; Oats, 45c to 52c.
London, Ont.—Wheat, \$1.45 to \$1.60 per cwt; Barley, \$1.10 to \$1.50; Peas, \$1.17 to \$1.20; Corn, \$1.10 to \$1.20; Oats, 88c to 90c; Rye, \$1.05 to \$1.10; Hay, \$12 to \$14 per ton.



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