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The Farmer's Advocate!

And Home Magazine.

PUBLISHED MONTHLY BY WILLIAM WELD.

(Directed according to Act of Parliament of Canada, by WILLIAM WELD, in the office of the Minister of Agriculture and Statistics, at OTTAWA.)

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The Farmers' Advocate

EXHIBITION NUMBER.

WILL BE ISSUED ABOUT THE

Fifteenth of September, 1877.

•••	The Edition will be	700
•••	50,000 COPIES	700
•••	and will be carefully circulated among	700
•••	the leading Farmers of Canada,	700
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MAGNIFICENT CROPS,
LIBERAL ADVERTISING,
AND MAMMOTH PROFITS.

On the Wing.

We know that many of our friends in the townships and counties near to our office may consider that we are not doing our duty by not visiting them or their localities, but we deemed it our duty on the completion of the last ADVOCATE to take a trip to the Province of

QUEBEC.

This province appears like a foreign country. The customs and habits of the people, the ruling power, the language, &c., &c., are quite as striking to us as the difference between England and France. The farms are very long and very narrow, in many instances running two miles in length, and only one row would be width. There has been but very little progress made in the improvement of the farms,

buildings, roads and schools since our first view of this country, between 30 and 40 years ago. No farm waggons are to be seen; one-horse carts are used for every purpose. The plows, cultivators, threshing machines and all farm implements are of the cheapest and most simple kinds. The farmers are far more economical than in Ontario.

On reaching the city of Montreal, we select the American Hotel, because farmers, horse buyers, and cattle men assemble here. This appears to be the principal horse market in this city; horses are continually brought into the yard, and purchasers are there buying at all times. Mr. Robert Miller, of Whitby, was here with fifteen horses, principally heavy draught. He is about to make his first shipment to England; if he finds it remunerative he will repeat the shipment with increased strength. We go to the wharf and see the

STEAMSHIP "ONTARIO"

loading. Cheese and butter are being stored in her hold; horses are being led into a box, then raised up the ship's side, and then lowered into the hold of the ship; cattle are being driven on board and tied in rows, having sometimes a partition between two; sometimes six or seven stand without partitions. The horses and most of the cattle looked well. The cattle were principally from the States. The shippers had hired a certain space in this vessel, and were loading it about as they chose. There were 90 head of poor, thin, bony, miserable looking steers, oxen and cows; the beasts were crowded into small space in a most uncomfortable manner; this lot of cattle was a disgrace to be seen. We cannot conceive where they could have been found—old, worn-out, poor oxen; steers spring-poor, such as we have seen shivering against a rail fence in the spring, when the straw has been all fed, and no hay or grass for them. On seeing this stock being shipped, we thought it was high time that inspectors should be appointed to say what should be sent out of our country. The sight of such a miserable lot of cattle being sent disgusted us. They could not have been found in western Canada; it was a shipment of live bones and hides. It is the shipment of such stuff that does the Dominion an injury. The Government should not allow such stock to leave our shores, especially packed in such an uncomfortable manner as they were on board this ship. We expect to hear of the death of many of them, and for the welfare of our country it would be best if they were all dropped in mid-ocean.

We were informed that 315 head of cattle, 15 horses, about 120 sheep, and a lot of hogs were shipped in this vessel and that this was the largest load of live stock ever taken from Montreal in one vessel. We also heard that a shipment of live turkeys had been made.

We met Mr. William Miller, of Pickering, in this city. He had been to New York and Boston for the purpose of making arrangements for the shipment of 700 head of fat cattle. He found he could make better arrangements here. The sundry

expenses, charges and obstructions were greater in the States than in Canada. The

CANADIAN PORTS ARE PREFERRED TO AMERICAN PORTS.

The cattle that he is about to ship are owned by J. D. Gilbert, of Elkhorn, Ill., U. S. Mr. Gilbert is an extensive farmer; he owns twelve thousand five hundred acres, twelve thousand of which are fenced in; he raised four thousand four hundred and fifty acres of corn this year. He keeps four thousand head of cattle. Mr. Miller informs us that they are much larger cattle than those we have in Canada, that they will average 1,750 lbs. each. They are of a different breed, having a dash of the old English long-horn in them.

COST OF SHIPPING STOCK.

The present rates of freight are much lower than they have been for many years; in fact, the shipping interest has suffered during the hard times just as much as any other branch of business. The cost of shipping a horse to England is \$50 for passage and \$10 for fitting up the stall. Each horse's stall is fitted with a windlass to sling the horse in case of a storm or rough weather. No duty has to be paid in England, but the commission men there have a fee of 5 per cent.; this 5 per cent. has to be paid if the horses are sold out of the stable or sold at public auction in Liverpool. The insurance on stock from shipwreck is 55 cents on \$100. The shipper finds feed for his stock, on which he pays no freight. A free passage is given for one stockman to every ten horses, or one for every twenty head of cattle. The herdsmen have to pay their own fare back. The cost of shipping cattle is \$25; sheep about \$2 per head. It is necessary to make arrangements beforehand; for instance, Mr. Miller could not get vessels to ship his cattle for one month. Some of the larger shippers at Montreal were very reticent in regard to giving information regarding freights, &c., and did not wish such information to be published. One of them said to us: "We have opened a business and wish to make something out of it." We obtained our information without thanks to such.

We went to the office of our Canadian steamship king, Sir Hugh Allan. He was pleased to give us any information, and said he would not freight his mail line of steamers with live stock. He would only take a few in the fore part of the vessel. If necessary, they would construct vessels expressly for that trade. His Glasgow Line he now uses for stock; the Allan Line is now preferable for passengers and the shipment of butter, cheese and grain. The Dominion Line is now preferred for shipping cattle, as Allan's vessels only carry large quantities of stock to Glasgow. The Ontario line of steamers runs to Liverpool, which is considered a better stock market than Glasgow.

FINE FARM

of the late Sir W. Logan. It is farmed by Mr. Thos. Irving. On this farm we saw a fine field of

English tick beans—just as fine a crop as we have ever seen growing in England; they were full, well laden and just ripening. This is the only farm on which we have seen this crop raised in Canada. Mr. Irving finds them highly useful for his stock. Here we see the finest Clyde mare we have yet seen in Canada; she is two years old, coming three. We tried to induce him to send her to our Provincial Exhibition, but he prefers exhibiting her in Quebec. His crops are very good; he has just finished his wheat harvest, and has a good crop and good sample. No winter wheat is raised in this locality.

We also go to Lachine and see the fine stock farm of Messrs. T. & J. Dawes. Here are to be seen some of the fastest and finest blood mares, with their colts; also a fine stock of Clyde mares and colts. We see here the largest and best stock of brood mares, colts and young horses that we have yet seen in Canada. Mr. J. Dawes is very proud of his horses. The mares and colts will come round him at his call. What appeared to us remarkable with the colts is that the thorough-breds would come close round him and liked to be petted and to be friendly. They would stand quietly and allow their feet to be lifted, but the Clyde colts would not be friendly and would evade the society of man. Mr. Dawes says he has always tried to treat them with equal kindness, but they never will be friendly, and keep away from him. There has been a blighting wind in this locality that blasted the foliage of some of the forest trees and other vegetation; the grass or grain had not been injured by it.

Mr. Dawes drove us to Ardojowan, the farm of Mr. Andrew Allan, of Messrs. H. & A. Allan. It is near Lachine, and he is making quite a model farm of it. Mr. Allan has leased his farm at the eastern end of the island. Ardojowan was rough, stony, and in some parts swampy. The stones have been collected and solid stone fences have been erected round the farm, and dividing it into fields. One job was let for \$3,000 for the erection of part of the fences. On this farm are to be seen Shetland ponies—real beauties; also some of the best blood and Clyde stallions in this part of our Dominion. Ayrshires rule supreme; butter and milk are more sought for than size and beef. There are but comparatively few that raise Shorthorns. For the richness of butter, even the Ayrshires here have to yield the palm to the

ALDERNEYS.

Mr. Romeo H. Stephens, of Slocum's Lodge, St. Lambert's, has the finest herd of this class that is in this Dominion. Only two or three other parties have pure-bred stock.

On the south side of the River St. Lawrence, and 1½ miles west of Victoria Bridge, a fine growth of ornamental and useful trees may be seen. Enclosed in this grove is a comfortable, spacious and picturesque house, built something after the Elizabethan style. Fruits and flowers are growing in the neatly kept garden as luxuriantly as can be seen in most parts of western Canada, where attempts are made to make home look comfortable. This is the residence of Mr. Romeo H. Stephens, the proprietor of the finest herd of Alderneys in Canada. Mr. Stephens kindly showed us his herd. We never admired this stock as much as when seeing them in their pastures. The beautiful, quiet, gentle animals would come round us almost asking to be caressed, their uniform color being a light dun. They appeared to us almost as handsome as deer for the ornamentation of pleasure grounds. Any one having an eye for delicacy and beauty must admire the appearance of these animals when seeing them among groves of trees or in their pastures, but when exhibited in pent-up, dirty stalls, or amongst a lot of large Durhams

many practical farmers would say, "I would not have such rats on my farm." But there are fair ladies and tasty gentlemen who are admirers of gems of beauty. We noticed, when at the New York State Fair in Rochester, some years ago, a richly attired, handsome lady passing the cattle pens. An Alderney cow put her nose over the fence. The lady stroked its nose with her kid-gloved hand and said: "Oh, you pretty, gentle creature, I should like to take you home with me." We know not if her lordly attendant gratified her wish or not, but there are some ladies and gentlemen who will have some of these Alderneys on their parks when they have seen them as we have out on the green pastures. This class of cows produce the richest and finest-flavored butter. Mr. Stephens informed us that he could sell all his butter at contract at 10 cents per lb. more than the common price for butter. Mr. Stephens has 160 acres and keeps 60 head of Alderneys. The Americans have purchased his surplus stock since his commencement. The price for this class of stock is not as high as it is for Shorthorns; thus the Shorthorns have absorbed the principal attention.

ASTONISHING FACT.

Mr. Stephens said that I was the first Upper Canadian that had been on his farm. He has been there the past ten years, and during that time no farm has changed hands within five miles. His property is worth \$40,000 and his taxes are less than \$10; a building in this city worth \$5,000 is taxed for \$100; the discrepancy is too great, as we are in the same country. A farm in this county worth \$10,000 would be taxed \$30.

When passing through Mr. Stephens' barns and stables, he said: "I will introduce you to a countryman of yours." He threw open his coach-house door and uncovered a handsome phaeton. "There," he said, "that was made by John Campbell, of London, Ont.; he does good work and puts good material in his carriages. I have purchased six carriages of different kinds from him." This speaks well for the London, Ont., manufacturers, to have their carriages in the best families, 400 miles from where they are made.

Many of the habitans, or French farmers, smoke lots of tobacco, but they grow it and sell their surplus stock. One gentleman informed us that they deprive the Government of a million dollars of revenue annually. Many of these Lower Canadian farmers make their own sugar, tan leather, and raise a substitute for tea and coffee; they make their own cloth, boots, harness and even rude implements. They contribute almost nothing towards the revenue of the country, directly or indirectly. They will not sell their lands unless they get double the value for them. They are adverse to all kinds of improvement; they reap the benefits of markets opened for them and the improvements made by public expenditures, and do not pay a tithe of what Upper Canadian farmers pay for the support of the country. Two, three, or even four married women can and do live in one house in Lower Canada; in Upper Canada no hive can have more than one queen.

The French here are a contented, happy people. The cure or priest directs them. The laws are the same as with us, but custom is greater than law. A farmer cannot sell his farm without the consent of the cure. If a farm is worth \$5,000, and there are ten children raised, each child must have the tenth part of the value of the farm.

Hay appeared to be the main crop in the parts through which we passed. The spring wheat was cut and carried in the vicinity of Montreal; on our return, the farmers were in the midst of reaping in the vicinity of Whitley and Oshawa.

The best farms we visited in this part of our

Dominion were furnished with wind pumps, and the farmers spoke most laudatory of them. One has his so arranged as to water his stock in the stalls the coldest days of winter. Our western farmers will adopt them as soon as they become generally known. The high rate formerly asked by our Canadian manufacturers prevented their acceptance; now the price is such that any good farmer can afford one.

We must leave some remarks for our next issue, as we have given instructions for a cut to be made of a farm in Quebec.

Straw as Fodder.

The North Lanark Agricultural Society, in their report, say: "From what we could learn, hay, as a rule, is light." Nor is this complaint limited to one locality. We have similar reports from many parts of the country. We have to add to this deficiency in the hay crop that the oat straw is also shorter than usual. We are pleased, however, to find that the advice repeatedly given in the *Advocate* has been followed by many—that of sowing Hungarian grass and millet to make up the deficiency. Where such heavy crops of millet can be raised with so little labor, in a few months, the provident farmer need be in no want of fodder for his stock.

Straw is by many very little valued for fodder. In some places it is left to be trodden under foot by the cattle in the farm yard, and cast out sodden and not half decomposed, as manure. Now, all this is mere waste. There is no article on the farm more wasted than straw, and it can all be turned to good account. We invariably fed our store cattle on straw, and we always found good straw equal for feeding purposes to middling hay. When the grain crop is cut before it is too ripe, and the straw well saved, fresh and bright, store cattle will thrive on it. When properly harvested and in good condition, it contains of nutriment from twenty to forty per cent. It contains about five times more fat-forming elements than white turnips. Oat straw contains nearly thirty per cent, as much fattening matter as hay, and more than seventy per cent, as much flesh forming matter.

Next to pea haulm, oat straw is the most nutritious; next in value is wheat straw, and then barley straw. Rye straw also is very nutritious, but it is so much used for industrial purposes in the vicinity of large towns, as to sell for higher prices than hay. The analysis of straw shows that it is rich in fat-forming elements and deficient in those that are flesh-formers; therefore the food to be fed in addition should be rich in flesh-formers. There is no other food so good for the purpose as linseed meal, and when flax is more generally cultivated in the country, the meal or cake may be used with profit for feeding. But for the present we may well dispense with its use, till we find it necessary to supply the increasing demand for beef. Meantime we can bring our stock through the winter, even if hay be scarce and dear, by feeding with straw and roots; for though it is by itself a valuable fodder, capable of sustaining store cattle throughout the winter, if properly saved, its value is much increased when supplemented with food rich in those elements in which it is deficient. We fed with it, in our stock farming, turnips, mangolds and cabbage, and our cattle, though they got no hay, were, when turning out to grass in May, always in good condition, healthy and thriving.

Straw is fed out with greater economy if it be first run through the straw cutter. There is then no waste in its use, as the little that is left in the manger is required for litter for the cattle, and for this it will be sufficient if the floor of the cow house be properly formed.

Large or Small Farms.

Whether farming on a large or small scale is more advantageous, not only to the farmer himself, but also the country at large, is a long-disputed question. We subjoin, from the *American Rural Home*, a letter advocating the holding of small farms as more profitable. The letter is rather indefinite, giving no intimation of what the writer considers the size of a large farm is. While admitting as a self-evident rule that the farm should not be larger than the farmer's means enable him to cultivate to the greatest advantage, we cannot ignore the great profit to the landholder and still greater benefit to the community from large farms held and cultivated by men who have sufficient capital, and who are well qualified by education and practical skill to farm in such a manner as to produce the largest crops at a reasonable expenditure of time, and to set an example in the neighborhood of really good farming. Such farmers are expected to have a better knowledge of the science of agriculture, and to be more competent for its practice than men of small means struggling on a few acres. Another advantage such farmers have is, that they can always purchase the best seed and implements on good terms, and readily avail themselves of every improvement in agriculture. In the same journal we read notes of the editor "Among the farmers of Munroe," and nearly all the well-cultivated farms he visited were not less than four hundred acres. These, though not very large farms, cannot certainly be classed among small farms.

In Great Britain the capital that a farmer is expected to have available for farm purposes is from £5 to £10 per acre, and many of the farms are large. May we not reasonably conclude that the size of the farm is to be in proportion to the farmer's capital, and his cares and anxieties will be comparatively few and easily borne; and a large farm, well cultivated, the owner having sufficient means, will bring in a proportionately large income and be more profitable to the farmer and to the community?

"A natural desire seems to be implanted in the breasts of a large number of our farm population to own large farms, to add this or that adjoining tract of land to that already owned; seemingly 'no pent-up, Utica can restrain our powers,' or desires. Under certain circumstances it would doubtless be wise to add more territory to a moderate-sized farm, but in making additions the whole subject should be dispassionately looked at in all its different lights and bearings.

"To know when and where to stop making additions is of the utmost importance, and still more important to stop at the right time. Every addition adds to the farmer's cares, anxieties, &c.; taxes will be increased, expenses for fences and other items will be added, also more labor required, and withal perhaps a failure to increase the annual income sufficient to pay for the extra care and other necessary outlays. Sometimes increasing the farm area from that where a comfortable subsistence, with a small surplus, is derived, the whole becomes involved in expenses which can not be afforded. It costs so much to keep the whole up that it hangs like a millstone about the neck of the owner, dragging him down; his whole family, wife, sons and daughters are obliged to work hard constantly, and often over-exert themselves in order to keep the machine moving; oil fails and bearings grate.

"No time is had for the young to obtain more than the rudiments of an education, much less to fit themselves as ornaments among their rural companions. The constant strain of muscle power unfits them for intellectual culture at any odd or leisure hours, even if any are had, and frequently

ends in their leaving the farm, and farm-life, at the first opportunity. A farm under similar conditions becomes an incubus to its possessor and his family, and an injury to the whole community, by bringing discredit upon the profession.

"If we desire to raise the business of farming to the position it deserves to occupy, we must cultivate (own) only what can be thoroughly done with the means we can employ, improve it to its greatest capacity, interest our children in their business, give them opportunity and advantage for acquiring a good education, thus fitting them to honestly fill their stations. Pursuing some similar course, we shall live longer, enjoy more of life, save up a competency against old age and infirmity, and train up a more intelligent and a happier family."

Salt as a Fertilizer—What Quantity to be Applied.

We have repeatedly had enquiries on the method of applying salt as a fertilizer, and what quantity per acre should be applied. To the first query the answer is simple. Sow the salt broadcast, either when the seed is sown, or after it is covered with plough or harrow. To the second query, what quantity, it is difficult to name any definite quantity, as this depends so much on adventitious circumstances. Two hundred pounds per acre is the quantity generally recommended. We have, however, in a late number of the *Michigan Farmer*, a well authenticated report of ten tons of salt being applied, by mistake of the farm laborer, to ten acres of rye as a top-dressing. The field was laid down with timothy. Mr. Smith, the owner of the land, expected when he learned it that the field was ruined, and that he would get nothing from it for the next five years. However, there was no way of counteracting the effects of the salt. He noticed that the rye did not grow much during the fall, and it made very little show in the spring; but he harrowed it and rolled it, and let it grow if it would, of which he was very doubtful. He says that during the spring the water that came from the drains was so impregnated with salt that it could be tasted in the water very distinctly by dipping his finger in it.

The field when being sowed with rye was seeded with timothy. Seeing in spring that there was a fair prospect of timothy, however the rye crop might turn out, he sowed the field with clover-seed—the usual quantity. The rye grew and yielded a good crop, though late; so late that the timothy in some places got the start of it. The luxuriant growth of the timothy made it difficult to cure the rye, and mixed with the straw it was almost as valuable for feed as if it were all timothy, and there was a good second crop of timothy and clover. This year one of the finest and heaviest crops of timothy and clover hay ever grown on any field in the farm has been cut off this field. Mr. Smith says he had never handled such a crop of hay in all his experience. He estimated it at three and a-half tons to the acre. The foreman on the farm says that there is an entire absence of insects in the salted field; neither grub, worm nor maggot could be found in it. If the absence of insects be owing to the heavy salting, this is an item of considerable importance now, especially when everything that springs from the ground has its swarm of insect devourers.

We do not recommend the application of such a large quantity of salt; we give the simple facts of what has been done in one instance, and must regard it as an exceptional case. The quantity to be applied depends on the soil, its wants and its conditions, and this can be ascertained only by experiment. There have been instances of salt being used as a fertilizer without producing any

perceptible effect. The soil of the field so heavily salted is a yellow, loamy sand, with stiff subsoil from one to two feet beneath. The field had been well tile-drained, all the drains leading into one main outlet. The natural quality of the soil, and its thorough draining, may have been the means of its bearing a ton of salt to the acre without being injured, but the contrary.

We need a greater number of reliable experiments, more authoritative information on the use of salt as a fertilizer. It has too long been a question of uncertainty. Some totally doubt its value as a fertilizer, while others may be inclined to exaggerate its effects and the quantity to be applied. This is one of the subjects that the professors of the Agricultural College and Model Farm might well direct their attention to. Farmers who are heavily taxed for the support of that institution naturally expect that experiments such as this one should be carried on by it, and not left to private individuals.

Sowing Rye for Soiling.

To farmers who have never sowed rye for soiling in May and early in June, we would say try the experiment now. The expense is but light—the labor with the farm horses, and the price of seed, about one or one and a half bushels per acre, are the whole cost. Sowing fall rye is the first step in preparing for soiling cattle; the greatest difficulty in soiling cattle being the want of early green food, and rye being the earliest forage plant we can grow. Mangolds will keep good for feeding till the rye is fit to cut; and those who have not tried it will be surprised by the large quantity of fresh, nutritious food they will have on a small paddock that has been sown with rye in September. The rye may be cut in time to prepare the ground for a June crop of millet, or, if the soil be not so heavy as to require much preparation, for a crop of turnips. The rye crop when cut green for soiling is also a benefit to the ground. The great quantity of roots serve to keep the soil from binding and also enriches it—it is the seed-bearing and ripening especially that tends to imperish soil. The ammonia exhaled by the dense foliage has a tendency to enrich the soil, so that if tilled immediately after the removal of the soiling crop, it will be readily brought into good tilth for the succeeding crop. Rye, though not so close-growing a crop as clover, grows to a much greater height, so that we may safely estimate it to produce at least many tons to the acre, and to feed as much stock as long as it is in condition for soiling. It has been ascertained by actual experiment that one rood of ground, well stocked with clover, is sufficient to feed one cow for one hundred and eighty days, if cut and fed to her, while if allowed to run on it would not last more than two weeks. From this experiment an estimate may be formed of the number of cattle fed by soiling over that fed by pasture, and how great may be the value of a paddock of rye for early feeding.

There is no cereal plant hardier than rye; it is grown extensively in the most northerly agricultural countries of Europe, and this is much in its favor for our purpose for early soiling. There is no danger of rye being winter-killed if water be prevented from being stagnant or in the soil.

Nearly all the cattle in Germany are stall-fed. A traveler passing through the country rarely sees any live stock in the field or pastures. The Germans understand and practise the closest economies of cattle food and animal excrements.

A Horticultural Society of Montreal has 800 members, who pay an annual fee of \$2-\$1000 which is expended in publishing useful books and reports. That society is *sui generis*.

The Locust.

We have given our readers a cut representing that scourge of the West, the Locust. Our readers are all acquainted with the grasshopper. It is seen every day in our grass lands, but seldom in great numbers collected in one place, and individually the harm it does is so slight as to be little noticed. But the locust that migrates in such vast swarms, and does incalculable injury to the West, is the one represented in the figure. Dr. Harris gives the following description of the grasshopper: "It is grizzled with dirty olive and brown, a black spot extending from the eyes along the sides of the thorax, an oblique yellow line on each side of the body beneath the wings, a row of dusky-brown spots along the middle of the wing covers, and the hindmost shanks and feet are blood-red with black spines. The wings are transparent, with a very pale, greenish-yellow tint next to the body, and are netted with brown lines. The hindmost thighs have two large spots on the upper side, and the extremity is black, but are red below and yellow on the inside. The appendages at the tip of the body in the male are of a long, triangular form. Length, from three-quarters of an inch to an inch; expansion of the wings, from $1\frac{1}{4}$ to $1\frac{3}{4}$ of an inch."

The locust that in its periodical visitations to the Western States so devastates the country, differs but little from the grasshopper as here described. The greatest difference is that in the locust the wings are longer than in the true grasshopper, being about one-third longer than the body; they are quite transparent with nerves slightly dusky, and have the appearance of large snow-flakes when seen high up in the air against the sun.

Mr. Bethune, in the Report of the Commissioner of Agriculture, quotes from Clavigero the following remarks on the natural history of the locust:

"The female at the latter part of July, or early in August, lays a number of fine, small eggs, of a yellowish color, in a string, united with a glutinous matter, which appears like a cord of fine silk. These are deposited together and dropped into a small hole which they make in the ground with a small apparatus attached to their tools. Each female lays from seventy to eighty eggs, and sometimes more.

"The birth of these new grasshoppers has no particular time, but is dependent upon the early or late appearance of the rains, but they generally hatch during the latter part of September or early in October. Their life, from birth to death, lasts ten months, during which they cast their coats twice and change their color five times. When the wings have become of sufficient strength, and the body at its maturity, they begin to ascend into the air, and fly like birds, and commence their ravages in every direction, desolating the fields of every green thing. They unite in masses of ten or twelve thousands, always following their conductors, and flying in a direct line without falling behind, for they consume every growing thing before them. To whatever height their guides conduct them, to obtain a sight of food, they follow, and as soon as growing crops or any verdure is sighted, instantly the swarm will alight and speedily devour and devastate the fields around to the extent that when they are seen by a new swarm of their fellows, there is not any more left to injure or consume."

The devastation of an entire country, when visited by these terrible insects, is indescribable. We are told of whole States laid waste, and the cultivation of the soil starving. One year they covered the entire territories of Washington and Oregon, and every valley of the State of California, the entire territories of Utah and New Mexico, the immense grassy prairies on the eastern

slopes of the Rocky Mountains, the dry valleys of the Republic of Mexico, Lower California, Central America and parts of Texas. They consumed everything before them—the foliage of trees, orchards, gardens, vineyards, fields of young grain, crops and vegetables—everything was eaten up in a particular locality in a single day, leaving the ground a withered, blackened desert.

In Canada they are only known by report, unless in the Province of Manitoba, and there their periodical visitations fall far short of the devastation in the Western States.

Our brief remarks on the locust would be incomplete without saying somewhat of the way to prevent their ravages. The locust is not without its natural enemies, so man has his allies to contend with this as well as other insect foes. All birds inhabiting the West devour the eggs of locusts, and by this means perform invaluable service by checking in some measure the vast increase of the numbers. So well is the good work they do known that the great increase of locusts and other insects in the West has been attributed to the killing of large numbers of quails and prairie hens. Not only do birds destroy the eggs and young in great multitudes, but toads, frogs and snakes feed on them. And besides these enemies there are parasites preying upon them.

The means employed against their ravages are to destroy the eggs, to destroy the unfledged young, and, as far as in our power, to destroy them when on their march or feeding grounds. The eggs are deposited in masses under the surface of the ground seldom more than one inch deep. Harrowing the ground when the eggs are laid destroys great numbers of them. By turning cattle and hogs into the grounds many will be destroyed. Plowing the eggs deeply is another very beneficial measure for the destruction of the eggs. Where they cannot be destroyed by plowing or harrowing the eggs are sometimes collected and destroyed. This is sometimes paid for at a fixed rate per bushel.

The young or unfledged locusts are destroyed by the following means: Burning the heaps of stubble under which they gather; crushing by heavy rollers; trapping by machines, such as the one described in another place; digging deep trenches with perpendicular sides as a protection to a field; catching as in bag machines made for the purpose; use of destructive agents, as kerosene. Each of these means for destroying the locust has been tried with much benefit.

The benefits from the destruction are forcibly expressed by Prof. Riley, to whose valuable work on the Locust Plague we must acknowledge our indebtedness for much reliable information on the subject. He says every bushel of eggs destroyed is equivalent to a hundred of acres of corn saved.

Wheat Crops, &c.

There has been some discussion in regard to the proper time to sow wheat this year. From the 3rd to the 10th of this month appears to be the most suitable time. Too great a growth may be obtained if sown much earlier, and the weevil will deposit its eggs on early sown wheat, and in some localities the next crop may be shortened by both the above causes. There have been disparaging remarks made in regard to the quality of the Clawson wheat. It is not quite as valuable as the Treadwell and some other varieties, but in the majority of cases the yield has been highly satisfactory, and it has been generally as profitable as any wheat this year. The Silver Chaff is a better milling wheat; it may supplant the Clawson. Some accounts of it are very encouraging. Each of the old varieties have in some localities succeeded so well that it is prudent to continue them.

The crop of wheat harvested this year in Canada and in the Western States is unprecedented. We have no statistics of our crop, but the crop of the State of Missouri alone is estimated at thirty millions. Rain has caused some damage to the spring wheat. There is more sprouted wheat in our country than we have had for many years. The winter wheat was secured in good order. Great damage has been done to the pea crop in many places; many have been shelled and many are grown. Some of the oats have been injured. Notwithstanding the damages, there is a large cereal crop secured, and a large part of it is in good order.

Barley is a light crop and somewhat discolored. The root crop is unusually good. The pastures have been excellent. This must give us a large butter and cheese product, and put our stock in excellent condition for the butcher or for winter quarters.

Our farmers should rejoice and be thankful. We again repeat our advice—sell your grain without delay; do not let war prospects hinder you from obtaining a good price. From all prospects that we can see, we believe that grain will be much cheaper next year than this; also that it will be cheaper next summer than in the winter, and that it will be cheaper in the winter than it is now. One farmer was offered \$1.50 per bushel for his crop of over one thousand bushels, and he refused it. This day he could not get so much by \$400 for his crop. Very likely he will keep it until it recedes \$400 more. If you have young, thriving steers, or half-fatted stock, do not sell them; feed your coarse grain, and purchase some when you want it from your less enterprising neighbors. Sell fat stock. The extra feed will fatten your hind and fill your pockets.

We may not be correct in our opinions; some, we know, hold different views. The future alone can tell.

A Nut for Canadian Farmers to Crack.

A writer in the *American Agriculturist* (W. Atwater, of Connecticut), writing of wood ashes, says:—"Many of our best farmers in Connecticut use leached ashes, imported from Canada at a cost of from eighteen to twenty-eight cents or more per bushel, in preference to all other fertilizers except barnyard and stable manure." If New England farmers find it profitable to purchase leached ashes for fertilizers in Canada, and to bear, in addition, the price paid for carriage, are they not worth the cost price to Canadian farmers? Are their lands so exceedingly fertile that they can afford to send away one of the best fertilizers to be obtained in the country for the sake of the few dollars they will receive in exchange? Ashes are not so lightly valued by any other agriculturists as as they are here. In Ireland not only is every shovelful of ashes from their turf fires carefully saved as a most valuable fertilizer, but even earth ferns and headlands are burned in large ash-fires to obtain the ashes for manure; and these ashes are not equal for the purpose to wood ashes.

We know from experience that ashes is a fertilizer of great value to all our farm and garden crops. We have used it on the growing cereals and root crops, and in all cases with advantages. To the potato crop we have found it especially beneficial, and as a top-dressing for lawns and meadows. All who have had much practical knowledge of the benefits to crops generally will fully agree that the analyses by chemists do not rate constituent elements more highly than is borne out by experience. From analyses by Prof. Johnson and others the average percentages of plant food are from forty-seven to fifty pounds per one hundred pounds weight of wood ashes. A dressing of fifty pounds of unleached ashes to the acre would give 200 bushels of potash, 765 pounds of lime, 120 pounds of magnesia, 48 pounds of phos-

phoric acid, and 7 pounds of sulphuric acid (W. O. A.). Can it be that the farms of Canada are so excessively fertile that we can afford to send one of the best and most readily-available fertilizers across our borders to enrich the fields of others?

On Farm Gardens.

PAPER NO. 2.—BY P. E. B., OTTAWA.

Presuming your readers have, some of them, followed the recommendations laid down in paper No. 1, regarding planting strawberries, they will by this time see them in good leaf. For my own part, I put out a large bed on the 20th July, on ground that had yielded an excellent crop of early potatoes; the plants were well watered for a week, every evening, when the weather was dry, and I did not lose a single plant out of several hundred, though a good many of them were not even shaded. The plants were grown on my own ground—Arnolds 27, and New Dominion—and, of course, the roots were never allowed to get dry; some of them are now throwing out runners, which are cut off with a knife so soon as they appear; some growers pull them off, but I prefer the knife, as it does not unsettle the roots of the plants. Why people who have runners of their own, or can obtain them from a neighbor close at hand, persist in planting in spring and autumn is a mystery which I have never yet been able to solve. An early crop of snap beans, peas, potatoes, early horn carrots, spinach, lettuce, or in fact any early vegetable, may be taken off the ground before the strawberries are ready to put out, and in this way the land is made profitable, and the next year a fair lot of berries may be gathered, whereas, if they are planted late in the fall or early next season a whole year is lost, as they should not be allowed to bear the first summer, and if they are the fruit will be small and the crop a very unimportant one. It has been suggested that strawberries may be planted between corn in the spring, the rows of corn being four feet apart, but if the ground is in good heart and this heavy foliage plant grows rank, the strawberries will be drawn up to the light and come out in the fall spindly, weak-looking things, so that this mode of cultivation cannot be at all recommended. Before leaving this subject it may be as well to say a few words regarding the preparation of the plants. When taken up they should have the runners trimmed off and laid leaves one way and roots the other, then with a sharp knife cut off the longest of the leaves and the most projecting of the roots, so that the plants are pretty much all the same length, stretch a line and set them with a garden trowel so deeply as to leave a slight cup in the soil round the plant to receive the water, which should be liberally given after the job is finished. The operation of planting should be performed on a cloudy day, or towards evening if the weather is very bright. The young plants are very tenacious of life, and are bound to grow if they get any encouragement to do so.

The first fruit bushes to ripen their wood and drop their leaves are the red and white currants; frequently at the end of August, and, at any rate, during September, these may be transplanted, and it is useless to say, no man with a soul above pork and beans should be without a liberal supply of these exquisite fruits. A good deal has been said about the long-suffering, much-abused currant, and it certainly is a plant that will stand neglect probably better than any other, but if it gets even moderate attention behold how good and pleasant a friend it is, and with extra cultivation the ordinary red Dutch variety may be made to bear berries rivaling in size those of the real cherry, and the red cherry will swell so as to compare favorably with the Delaware grape. One might as well

try to choke a dog with melted butter as to attempt to kill the currant with the most highly concentrated manures; all the Ribes tribe thrive most successfully under extra care and cultivation. If the husbandman proposes to give them a good square chance, the bushes should be set five feet apart in the rows, and these should be six feet wide from plant to plant; four feet apart is generally recommended, but I have found the above distances preferable, giving more room for picking and manuring, and a better opportunity to see that no weeds or grass are allowed to grow underneath them. The whole surface of the soil should be kept thoroughly pulverized on the surface with a steel rake, which should be passed over the ground at intervals of every few weeks, no very laborious job if the soil is light, and adds much to the general appearance and health of the bushes. The above distances will look rather extensive when the plants are first put in, but in two or three years the surface of the ground will be pretty well covered with foliage, if the soil is liberally treated with manure. After three rows are planted a space of eight feet should be left for the purpose of running a wheelbarrow through for the purpose of applying nourishment to the land; the best application to make is night-soil deodorized under cover with dry peat soil, road-dust or hard coal ashes, the cinders of which have been sifted out, I find this latter to be almost an entire specific for saw-fly currant worms and the measuring worm, the amount to give being one wheelbarrow load to every four bushes, every second year; this compost should be put on late in the autumn, some time during November, having been mixed up some six or eight months beforehand. One row of white currants, two of red and one of black two hundred feet long will be quite sufficient; the first should be three feet from the strawberries, the second and third three feet each apart, then a space of eight feet, then a row of black currants, and two rows of Houghton seedling gooseberries with six feet between them, with two feet space, will complete a strip of fifty feet by two hundred feet long. As the currant is subject to various enemies, of which the borer is the worst, it is requisite to have a small nursery of plants in reserve to supply any blanks that may occur, or to sell or give away to the neighbors. The usual way of starting these cuttings is to have them all sorts of lengths, make up a small, square bed, and run the butt end into the ground, either in the fall or spring, and then pray for rain; a few sickly plants are thus procured after several years' waiting. But I humbly submit this is not the correct way of raising plants either for use or profit. Cuttings may be made any time during September or October; those should be of a uniform length of one foot, tied in bundles and deposited in sand in a box in the root-house or cellar, where it does not freeze; when spring opens these may be parated, and on examination it will be found the callus has been formed at the base of the cutting round the bark. A place where the earth is in good heart having been selected, a line is stretched after the ground has been thoroughly loosened with the spade and levelled with the rake, the spade is then thrust in along the line at a slight angle and the earth thrown out from the operator, leaving a V cut with a straight side next the cord. The cuttings are then set in this grip six inches apart, leaving two or three eyes at the top of the cutting above the soil, the earth is then filled in half way up, and is rammed in tight with a piece of two-inch board five feet long and six inches wide, having a square end cut on it with a saw, the other end being rounded off to form a handle; the firmness of the soil at the base of the cutting is the great desideratum, the rest of the soil is then filled in and the ground smoothed off neatly with the rake. If this plan is followed not three per cent. of the cuttings will be lost, and vigorous young plants will be the result of the operation.

Canadian Butter.

BY L. B. ARNOLD, SEC. OF THE AMERICAN DAIRY-MEN'S ASSOCIATION.

The peacock is not all covered with gaudy plumage. He has some very ugly feet which are not only naked, but, anon, obtrude themselves in a way very mortifying to his pride. Few things indeed are without some blemish. They have their shady as well as their sunny sides.

In the race for awards at the great International Exposition at Philadelphia, Canada outstripped all competitors in the display of cheese through the entire season. She made a grand record for herself, and one of which she may well feel proud and rightfully boast of for many a long year in the future. But while her cheese was covered with a glory, her butter fell as far behind as her cheese ran ahead. It was certainly nothing to boast of, though it was not destitute of merit. But it was rather an ugly foot when compared with the brilliant plumage which adorned the other branch of her dairy display at the Centennial, nor was it in keeping with the show of other agricultural products from Canada. A locality devoted mainly to cheese generally fails in butter, for the reason that the latter is apt to receive less attention than the cheese. The butter shown at the Centennial, as I understand, was taken from the great cheese district about Ingersoll, and hence may not have been a fair sample of the butter of other localities. But Canadian butter as a whole does not rank with Canadian cheese, nor with the butter of the States, which, it must be acknowledged, is far from perfect or from being what it might be.

In 1871 the average price of cheese exported from the Dominion was \$13.41 per hundred. The average price of butter exported was \$19.85 a hundred, or a little less than once and a half (1½) the price of the cheese. Butter should be nearly 2½ times the price of cheese.

But this comparison may be a little defective when applied to the dairy products of the whole country. Probably it is. It is pretty well understood, both in the States and in Canada, that the best cheese is exported and the poorest left at home, while in both countries the reverse is true in regard to butter. The finest butter finds a market at home and is therefore not represented in the export trade. But in the year referred to there were exported 15,439,266 pounds of butter (Report of Trade and Navigation, 1871). It must be confessed there is not a very good exhibition of skill in furnishing so large an amount of goods at so low a rate.

In 1876, according to the report for that year, there were exported 12,392,327 lbs. at a price not much better (\$20.74 a hundred). It makes a slow advance in five years. Had the milk of which this butter was made been converted and sold at the average rate of exports for that year it would have returned to the producers 25 per cent. more money, and had it been made into butter as good as the milk was capable of making it would have returned 50 per cent. more money than it actually did, calculating from the prices that were paid for fine butter that year. This is too much money to let slip away for the lack of skill and effort in producing the best instead of an inferior article. It is such losses which too often make farming a hard business, and which elicit the remark, "farming don't pay."

And there is no need of it. The milk of which this butter is made is just as good for butter as it is for cheese, and there is no valid reason why the butter of the country should not take as high a stand as that of cheese, which ranks with the highest on the continent. But why has the cheese interest shot ahead and left the butter interest lagging behind? It certainly is not because the latter is not of sufficient importance to deserve attention.

There is more value every year in the butter product—even at the inferior prices—than there is in the cheese product. It is true the cheese exports bring the most money (cheese exports for trade year ending June 30th, 1877, \$4,050,008; butter exports, \$2,579,431), but then the home trade and the home consumption in butter is much greater than that of cheese. I do not know just what the total products of butter and cheese in the Dominion are. In the States, over one-third of the total product of cheese is exported, while of butter the exports amount to only some 2 or 3 per cent. of the entire butter crop.

Stock and Dairy.

The Different Kinds of Wool.

From an address before the Kentucky Wool Growers' Association, we make the following extract:—

The value of all kinds of wool is determined by its strength, lustre, working qualities and shrinkage. Wool is divided by governments for tariff, and wool merchants, into three classes: Clothing, combing and carpet, and is produced in quantity in this order. Kentucky wool should be classed as combing, delaine, medium coarse and black. Wool merchants separate each division into as many classes as there are distinct qualities of staples in each division, to suit the purchaser. Manufacturers take the fleeces, putting them into as many classes as there are distinct qualities in each fleece, according to its length, color, lustre, etc., except the gummy locks, which they will not buy unwashed. Clothing wool is generally divided into three classes—fine, medium and coarse. The average price for fifty-three years, since 1824, for each class per washed pound, is for fine, 61½ cents; medium, 56½ cents; coarse, 51 cents; or nearly 5½ cents per pound less on each class as it grows coarser. Average price per washed pound Australian in London, for 1862 to 1867, inclusive, is estimated by Mr. Bond, 43½ cents gold. Counting freights, commission, etc., for same period, the average price in currency for washed Australian would be 80 cents per pound in New York, or 19 cents more than any of our clothing wools, and 29 cents more than for our coarse wools. Card or X wools are required to be fine, short in staple, "full of spiral curls and serratures." Combing wool consists in drawing out the fibres straight and parallel; then twisted into yarn called worsted, "the ends in spinning being covered, make the yarn smooth and lustrous." The staple should be generally five to eight inches long, having a few "spiral curls and serratures," with distinct lustre.

The qualities are found in the English in their order of perfection as follows: The Lincolnshire, Leicester and Cotswold breeds. Delaine wools are shorter and finer, and can be used as short as 2½ inches, but it must be very fine and nice. The coarser the staple the longer it must be. These are not classed in the trade as combing wools. There are fine, medium and coarse combing wools. The duty on this wool will equal 11 cents per pound, and 10 per cent. *ad valorem*. Poorly bred wools are very objectionable, with a fine, downy bottom, and coarse, uneven fibres. These are generally sold for carpet wools. I need only say to the wool growers of this State that there is a wider field in the expansion of growing wool fabrics than your imagination can take in.

The Dairy Interest.

The country has \$40,000,000 invested in 10,000,000 milch cows, whose annual product is worth \$275,142,585, while the last cotton crop was worth only \$200,000.

The enormous sum of this dairy interest—which includes nothing of oxen, hides or meat—will surprise every one who has paid no attention to it. The fallacy which destroyed the hay argument is partially wanting here too. For, while our exportation of hay amounts to nothing, and hardly equals consumption, there is a great and rapidly growing export of butter, cheese, salt and fresh beef and live animals. The sum cannot be accurately computed, and carries the particular valuations into the same classification with cotton. For in all these interests the final appreciation does not rest upon the amount, how considerable soever that may be, which is consumed at home and so lost to wealth, but upon the amount beyond consumption, which is exported and enriches the land by its equivalent in gold or other needs and permanent worths.

The gross value of cattle for labor, manure, milk, cheese, butter, leather and other ends, is susceptible of a vast addition and must necessarily expand with western settlement and increase the returns shown in our foreign trade, while sustaining labor at home more abundantly and cheaply, and so enabling every industry to flourish in competition with less favored countries, and greater comforts and luxuries to be enjoyed by all. It will not hold the throne it challenges any more than the hay crop; provided the southern energy, which has done so much towards restoring its early abun-

dance, holds the course it has with the energy it is now showing. But it may, and apparently must, reach a higher sum than any farmer or any statistician has dreamed; for, recovering its total, it has acquired the best blood of the best herds of Europe; has given practical attention and study to the manufacture of cheese and butter; has given the leather interest a new power; is conquering Texas, California, Oregon and all the new States, and is arousing wonder in and drawing money from Europe and Asia at the same time.—*North American*.

The Kerry Cow.

The description of this breed is from the London *Live-Stock Journal*:—

The Kerry cow is a remarkably grateful feeder, or in other words, will live on the commonest and scantiest diet, and when her lot falls in pleasant places will yield a bountiful lacteal return for the generous keep. Everywhere and under all circumstances she has the reputation of being an excellent milker. The average yield of milk produced by a Kerry cow belonging to a gentleman who for many years has paid great attention to his breeds, says R. O. Pringle in his review on "Irish Agriculture," is twelve quarts daily, and the average of butter from six to eight pounds per week. Some of the cows have produced more, but the quantities stated have been above the average. Pringle considers this to be a large yield, considering the size of the animal and the small amount they consume. A Kerry cow was known to be kept for five years in a stable in Dublin, which had only two calves during the period, yet was scarcely ever dry, and kept up a full supply of milk for a large family.

Breeding a Uniform Type of Cattle.

D. G. Spragge, in the *Michigan Farmer*, offers some good practical suggestions on this subject. The history of the improved breeds of stock in England proves what may be done by selecting the best animals having the desired developments for sire and dam, and persisting for generations in the selections. The offspring naturally inherit the characteristics of their parents, for "like begets like." By judicious selection the breeder can improve the milking or the beef-forming quality of his stock. We take some short extracts from Mr. Spragge's essay on this point:

With reference to breeding a uniform type, great results can be reached by persistent effort in a given direction. To illustrate, we will suppose a half-blood male shows a marked development in some points in which the owner is especially desirous of cultivating: be this a heavy, thick ham, a full loin, well sprung ribs, or deep chest. This male, although only a half-blood, hence possessing little power to mark his progeny, will, nevertheless, occasionally get progeny possessing the strongly marked peculiarity of the parent.

Now, again, let the owner select one of the offshoots, of either sex, so marked, of this second cross, to be used again with the purpose in view of continuing the effort to fix the desired development indelibly upon the herd. There is hardly anything surer than that this course, persisted in until you have a male animal, the result of repeated efforts in one direction, will furnish you a sire that will transmit the coveted development to a large portion of his get.

The lesson we draw from this is, that to be able to transmit a symmetrical form with the well marked developments which, together, make up a representative of one of the finer breeds, the parents must inherit the coveted shape from a long line of ancestry, in the history of which there has been but little variations from a uniform type. The excellencies here contended for are the opposite of those found in the shapely half-blood, in that they are fixed and enduring, reappearing persistently upon every opportunity. Herein lies the key to successful breeding, and if farmers would always seize upon this, and breeders would more often study to learn the individual merits of every animal which appears in the list of progenitors, rather than to rack their brains, and put experts upon the witness stand, to bring out evidences as to the particular strains of blood which appear in the record—of the merits of which no living witness has any knowledge, nor does history give us any account—the sooner would we attain those excellencies which stamp a given race of farm animals as good; this quality, in a practical sense, being the reason why sensible men cleave to them.

Grubs in the Heads of Sheep.

In reply to enquiries we reprint from the *Prairie Farmer* the following:

A sure preventive of this troublesome ailment is to set up a low shelter, about four feet high, in a field to which the flock has easy access at any time, whether they feed in it or not. It may be roughly built of small, forked posts, covered with boughs. The intent is to give the sheep shade in the heat of the day, and protection from the attacks of the gold-fly which, all summer long, darts about their noses, in which to lay their eggs, rendering the animals almost frantic in their efforts to escape them.

More than forty years ago the writer used these shelters, and has never known them to fail. To succeed in her instinctive efforts to place her eggs in the noses of the sheep, the fly must rise to a height of several feet and dart down upon the animal selected. The shelter effectually prevents her doing so. The animals will voluntarily run to it in the heat of the day, when the attacks of the fly are most violent, and will there find peace, shade, shelter and complete immunity from their tiny but terribly annoying and irritating enemy.

The gad-fly does no more harm to a healthy sheep, than a bottle-fly does to a healthy horse. But its attempts to lay its eggs in the nose are far more annoying, and in the winter and early spring when the animal is weakened and most unable to withstand any unnecessary strain upon it, the grub may be an important factor with other minor causes, in producing death.

Such a shelter will usually cost nothing but a few days' work to the flock-master. It, undoubtedly, will be worth many dollars to him in the course of a year.

Sheep Farming.

From 50 to 100 head of sheep can be kept on each farm of 100 to 160 acres of land, with but very little extra expense, and generally with an actual advantage to the land. Sheep are most excellent weed killers, and may be kept a certain number of them—on each farm on which no other stock except goats will eat, and thus not only save the labor of men to keep down the weeds, but will make these weeds the means of fertilizing the land; besides, the sheep will return to their owner as good a per cent. on his investment in them, in their increase and wool, as he can make in any other way. A good fat lamb, or a fat wether, killed now and then will come very handy in supplying the family's wants for meat, and will materially reduce the amount of the annual expense for fresh meat from the butcher's. If our farmers will consult their own best interests in this respect and buy a few sheep, the amount of our wool clip will not be reduced, but may be materially increased; and with this change in the business the quality of the wool will also be improved, and the State's income at the same time be further increased. It is always a safe and a good business principle to buy upon a rising market. Buying sheep now will be in accordance with this principle in a double sense—the sheep will appreciate, and their annual product will also continue to advance. Better sow a few acres less wheat and sell a few bushels of the seed on hand to invest the proceeds in sheep.

Cow-Milking Machine.

Hand labor is generally being superseded by machinery in nearly every branch of industry. It is curious to mark the unlikely uses to which machinery may be applied. An ingenious inventor in the United States has recently patented a useful device in the shape of a cow-milking machine, which, it is said, will do all that can be done in milking by hand, faster and easier, and will be of special service where cows have sore teats or are hard milkers. The apparatus consists essentially of a glass globe, large enough to hold an average yield of milk, which is connected by means of a flexible tube with an air-pump. Rising from the top of the globe are small pipes with metal tips. The mode of operation consists in suspending the globe underneath the animal to be milked, and inserting the tips of the small pipes into the teats. A partial vacuum is then effected inside the globe by means of the air-pump, and the milk thus drawn forth. The advantages claimed by the invention are that it prevents any loss of milk through spilling, it renders milk or straining pails unnecessary, and prevents entrance of dirt. Finally, it can be easily manipulated by anybody.—*Reading Eagle*.

The Horse.

The export of horses from a large part of the Continent is prohibited, and there are symptoms that before long the prohibition will be considerably extended. The vast demands of the Russian Government for horses have brought about this effect, and it is not unreasonable to suppose that if other continental countries are drawn into the vortex of war it will appreciably disturb the supply in another and additional manner. Not only will the export be forbidden, but we may expect to see those countries issuing orders for the purchase of horses upon a very extended scale. As a natural result the supply from such places as are not at war will be directed away from us and towards the centres where the demand is most urgent, and where of course prices will be better. So that in two ways our market must expect a strain—first, because of the closing of the Continent, and secondly, because of an unusual foreign demand.

Now, although we are in a great measure, on account of our peculiar insular position, removed from any positive danger in the way of a very serious decrease in the number of our horses, yet the question naturally arises if we are altogether so well supplied at home as we ought to be? In plain words, is not the unusual demand for horses upon the Continent which has so suddenly arisen, a fact our own tenant farmers should carefully consider, and take therefrom the lesson of the great and increasing importance of horse-breeding? Upon the point as to the actual number of horses in this country there have been several opinions put forward, the most authoritative one being to the effect that the number of horses has not decreased nor their quality deteriorated. By repeating this view we wish it to be understood that these remarks are not intended to carry an alarmist impression as to an absolute scarcity of horses. What we desire to convey is that English agriculturists do not devote themselves to the rearing of horses with anything like the energy they should display. When one government alone asks for 30,000 horses, when other governments think horses so important as to prohibit their export, is it not clear that this class of live-stock is likely for some time to occupy a very prominent place? It was believed at first that the breech-loader had driven cavalry out of the field, but the contrary seems to be the case, for there appears to be, if anything, still larger masses of cavalry in motion now than have been seen in the memory of man.

But apart from the exciting events abroad, and their possible indirect effect upon our home market, do we even in ordinary times pay sufficient attention to the horse? Granted that the numbers in the country are not less, nor the quality diminished, is there not plenty of room for a far larger production than at present? There was a time when tenants almost universally bred from one or two mares annually, but the practice appears to have fallen into disuse to a great extent, even as regards cart-horses. People seem to prefer to buy rather than to breed, to buy their horse and work him out. Several reasons for the alteration have been given. A forcible one is that under the present conditions of farming a man must have quick returns for his money. Just as in manufacture, a quick sale and small profits are desired, so too in agriculture we must get a rapid percentage of profit, and equally rapid return of the principal invested. Now, of course horse-rearing does not give such speedy profits; but on the other hand, when the profit arrives it is often very large. Then it is stated, as an excuse for the comparative neglect of nag-breeding, that the stallions which are available for such purposes are positively worthless. This is an old complaint; but surely the established laws of economy will apply here too—if there was a demand for good stallions surely some one would be found to supply them. But so long as tenants take little interest in the matter and are satisfied with anything, it will be useless to expect to see good stallions on the road. —*London Live-Stock Journal.*

MILK.—Various experiments made with fresh milk have demonstrated the fact that the nearer new milk is kept to the freezing-point in proper vessels, the more rapid is the collection of cream, the quantity is greater, and the butter and cheese are of a richer quality.

A breeder of Jerseys in Connecticut has three cows that in August of last year gave respectively 130, 310 and 300 quarts of milk.

Let the Horse be Unblinded.

We never could see that vice or deformity lay in a horse's eye that should make it necessary to cover it up and shut out its owner from at least two-thirds of his rightful field of vision. The poets say that old age looks backward, but we never hear of such an idiosyncrasy charged upon horses. The theory that a horse is less apt to be frightened when shut out from everything behind him we suspect to be a fallacy, else saddle-horses and war-horses would be doubly blinded. Every horse is as familiar with his own carriage as with his own tail, and as far as his own "personal" fortitude is concerned, is no more disturbed at being pursued by one than another. As for other scarcrows that come behind, they are mostly familiar to the animal, and the more fully the horse can perceive them the more quietly does he submit to their approach. Then it is such a pity to cover up one of the most brilliant features of this most brilliant creature. The horse has borne such a hand in the civilization of this rough-and-tumble world that it seems not so much as cruelty as a discourtesy, as well as a disgrace, to hide his form with embarrassing toggery. No wonder we estimate the force of the world as horse power; no wonder the Romans and Germans, each in their own language, designated their aristocracy as riders; no wonder their descendants made chivalry a synonym for their highest virtues. Let the horse be given his due, and unblinded. —*English Journal.*

Beans for Horses.

The Secretary of the American Institute Farmers' Club, speaking of beans for horses, said that they form a striking illustration of the principle that the nourishing or strengthening effects of the different articles of food depend more on some peculiar property which they possess, or some combination which they form, than on the actual quantity of nutritive matter. Beans contain but five hundred and seventy parts of a thousand of nutritive matter, yet they add materially to the vigor of the horse. There are many horses that will not stand hard work without beans being mixed with their food. Observant travellers have discovered the difference of spirit and continuance of their animals in proportion as they allow or deny them beans on their journey. They are of great assistance to the hard worked coach-horse; washy horses could not get through this work without them, and old horses would sink under the task imposed upon them. Beans afford not merely a temporary stimulus, but they may be used daily without losing their power or producing exhaustion. They should not be fed whole or split, but crushed. Some persons use chaff with beans, instead of oats. With hard worked horses this might be allowed, but in general beans without oats are too binding and stimulating. Beans should be at least twelve months old before they are given to the horse, and care should be taken to keep them from becoming damp and mouldy, which will at least disgust the animal, if they do not harm him. Then, too, mouldy beans harbor an insect which destroys the inner part of the bean. When converted into meal, beans are good for fattening hogs.

Handle the Colts.

The horse submits to man's authority for the reason that he is made to believe man is the stronger. He is kind and tractable from being treated kindly and handled lovingly. What a horse is once taught, no matter how young, he never forgets. When the colt is running by its mother's side it can be taught valuable lessons. Man's strength can then easier overcome it. The more you talk to and handle a colt the more it will know and the kinder it will be. No one should ever permit a colt to have the mastery in strength, consequently small boys should not handle them until the colt is entirely subdued in this respect. Nor should a colt be ever hitched or led by a halter which he can break. If he once learns he can break his halter it will take years to cure him of the fault, if he is ever cured. But by kind handling and playing with them—which any one can enjoy who has a heart within him—they will ever after be easily caught, kind in service, and more trusting in danger or difficulty. Now is the season of the year to attend to this matter. When the colt comes about you never abuse him, but with kindness educate a familiarity with him. Thus he will be always gentle, and easily adapted to any work. There will be no trouble breaking such a colt. He will naturally take to it. By being treated viciously the colt can also be learned mean tricks and vicious habits. —*Iowa Register.*

In the construction of their stables, some of our best Virginia farmers keep separate rooms or stalls for their work horses. These contain no stalls, but the horses are all kept promiscuously together in the same room. After they have become accustomed to each other they will not fight. Horses that are kept in this way will learn to behave very discreetly towards each other. Each one will select his own place of feeding, and he will scarcely ever trespass upon the rights of his neighbor. There are two very decided advantages to this plan. First, the horse will be able to select his bed, and thus make himself more comfortable. Second, the excrements will be uniformly distributed over the floor of the stable, and not all dropped in the same place, as when the horses are confined to narrow stalls. When stalls are provided they should be wide and roomy, so that the horse can turn round and change his position at pleasure. When the stalls are narrow and the horse is haltered therein, the excrements are all dropped in the same place, and, in consequence, much of the liquid excrements are leaked out.

The grateful aroma of superior butter is attributable to the presence of certain fragrant herbs in the pasturage. A European farmer, living where this desired pasturage could not be obtained, has adopted the plan of suspending in his churns, when not in use, large calico bags filled with dry and aromatic herbs. On churning days small bags are substituted, and attached to the beaters of the churn, thus imparting the delicate fragrance.

There were very few Canadian exhibits on the ground at the Agricultural Show at Liverpool. The Canadian fat cattle sent by Messrs. Frankland & Reeves, which were on the show ground, were very fine, and attracted a great deal of attention. Canadian cheeses were fairly represented, but there was a large amount of high-class English and Scotch cheeses displayed. The first prize in the class for large cheeses, which included American and Canadian entries, was given to the Scotch cheddars exhibited by Mr. Penns, of Stranraer, N. B. The second and third prizes were given for Canadian cheeses exhibited by Messrs. Hodgson Brothers, merchants, of Liverpool. Mr. Warrington, who is a large importer of Canadian cheese, exhibited eight or ten entries, which were very creditable to Canadian dairy farming.

Bitter cream is caused by keeping it too long before churning. At three days old generally this change is discovered, and often the fourth day it will spoil a churning of butter, and is also unfit for coffee. Cream should not stand longer than 48 hours before churning. It is the age of cream that gives it this particularly disagreeable taste; the food of the cow does not produce it. The hay may be perfectly sweet and nutritious, and the cow may be fed roots perfectly sound and good, so that what she eats may approach as nearly as may be to Summer feed, still, if the cream from her milk is kept until it is three days old, it will become bitter; or the milk may be set where the temperature is and remains just right, and be covered over to keep the air out, nevertheless the cream will become bitter on or after the third day. In case the quantity of cream is not sufficient for a churning on the third day, add the milk, to give body enough for churning.

Last year I had 20 ewes which brought 30 lambs. I sheared the ewes last Spring, and they averaged 5 pounds of wool each. The wool brought 23 cents per pound in the fleece. The 20 fleeces returned \$23. The 30 lambs are worth \$60. This foots up to an income of \$83 upon the \$40 invested in the 20 ewes—over 100 per cent. I cannot tell just how much it cost to winter them, for they foraged off of straw stacks and subsisted themselves until lambing time, which was about March 1. From that time until grass came I fed them. It costs but a trifle to winter sheep, if lambing can be kept off until March 1. Another feature in the sheep business is the fact that it costs less to ship 100 pounds of wool to market than it does two bushels of wheat. This is my experience and observation as to sheep raising.

The annual cheese show of the Eastern Ontario Dairyman's Association will be held at Belleville, in connection with the West Hastings Agricultural Exhibition, on the third and fourth of October.

A Bull of the Longhorn Dishley Breed.

Our readers will be pleased to have more information about different breeds of cattle. The *Boston Cultivator* gave a large cut of this bull. Our artist has reduced its size to suit this paper. The following description will be read with interest by many. Perhaps some of our farmers may import a few of these fine animals; these may be the coming cattle, but there are none in America at the present time that we know of:

Pictures of pastoral life are far less common in writing of modern authors than in the work of the most ancient writers. Great generals and distinguished statesmen have never lacked biographers, while the lives and labors of men who lived "remote from cities," silently devoted to the improvement of the live stock of the farm, whether cattle, sheep, horses, pigs or poultry, and whose influence may be felt in every market of the civilized world, have had no adequate records or memoirs. In confirmation of this, we refer the reader to the "Comprehensive Dictionary of Biography, comprising a series of original memoirs of distinguished persons of all countries, published in Glasgow, Scotland," where he will find five and a half octave pages of closely set, double columns, relating the deeds of Napoleon Bonaparte, and nearly as many of the life and deeds of the Duke of Wellington, and turning to the name of Bakewell, nearly synonymous with that of "Dishley Longhorns," and we copy all that is recorded of him, less than one full line, as follows:

"Bakewell Robt., a grazier, died 1795."

The names of Colling and Bates and Booth are not even recorded in this Comprehensive Biographical Dictionary of distinguished persons. The names of such men are not prominent enough to tempt biographical writers, hungering for fame, to write the humble memoirs of the real benefactors of man.

Having heard and read much of the famous "roast beef" of Old England, one can hardly fail of being interested in the inquiry as to how this luxury is produced,—by what breed of cattle, etc. In attempting to answer this question, we can hardly do it better than by giving a brief sketch of the history of the Longhorn breed of cattle of England, so elegantly and picturesquely represented above, by the illustration of the "Longhorn Dishley breed," that which one rarely sees so attractive and picturesque a figure of a farm animal of the bovine family.

The Longhorns, a century ago, were well known to the graziers of the midland districts of England, and deemed second to no other breed, until the introduction of the improved Shorthorns, by the Colling Brothers, when the love of the Longhorns by many grew cold in view of the claimed superiority of the former.

The number of the Longhorns soon after became few and far between; yet there are those who never "dropped or turned aside," never lost faith in the superiority of the Longhorn breed of cattle. The offer of prizes for this breed by the Royal Agricultural Society in England has brought them again prominently into notice among breeders and graziers. It is claimed that they are good for milk, beef, are hardy, being well acclimated to those districts, where they have been so long and so well and favorably known, if not indigenous thereto.

"Where did they come from?" inquired a farmer, when he saw R. H. Chapman's "Marquis of Exeter" at the Royal show at Plymouth in 1850, where he saw this singularly attractive animal—with the carriage of a lion and the temper

of a dove—the one breed, perhaps, in which the feeder, the butcher and the artist may equally delight. Is he a lineal descendant of the great *Bos primigenius*, which wandered for ages since in the great fen districts of our eastern coast, and was still to be found on the continent when the Roman legions set sail for the unknown land beyond the strip of sea and fog which separated Albion from Gaul? or does he trace his armorial bearings to the smaller *Bos longifrons*, which held his own in our island until later times, and is said now to be in his primitive state in Chillingham and a few other English parks? It matters little to inquire; but there is no doubt as to their having been once spread universally over our midland counties, and every reason to suspect that the loin from which the hungry Charles II dined so well, that with a touch of the rollicking humor which afterwards got him the title of "Merry Monarch," he knighted it then and there as "Sir Loin," a title which it holds to this day, cut as it undoubtedly was from a Longhorn loin.

Longhorns originated, it is said, in the district of Craven, in Yorkshire, then a well-known fertile region, as now, where the best type of the Longhorn breed was obtained. Sir Roger Gresley, of Drakelow, who took such delight in keeping a dairy of cows similar in color and shape, at the time (about 1720) that Webster of Canley, and Chapman of Upton, were doing good work for the improvement of the breed, and furnishing the materials which Bakewell of Dishley—who had a wonderfully quick eye to improvements of all sorts

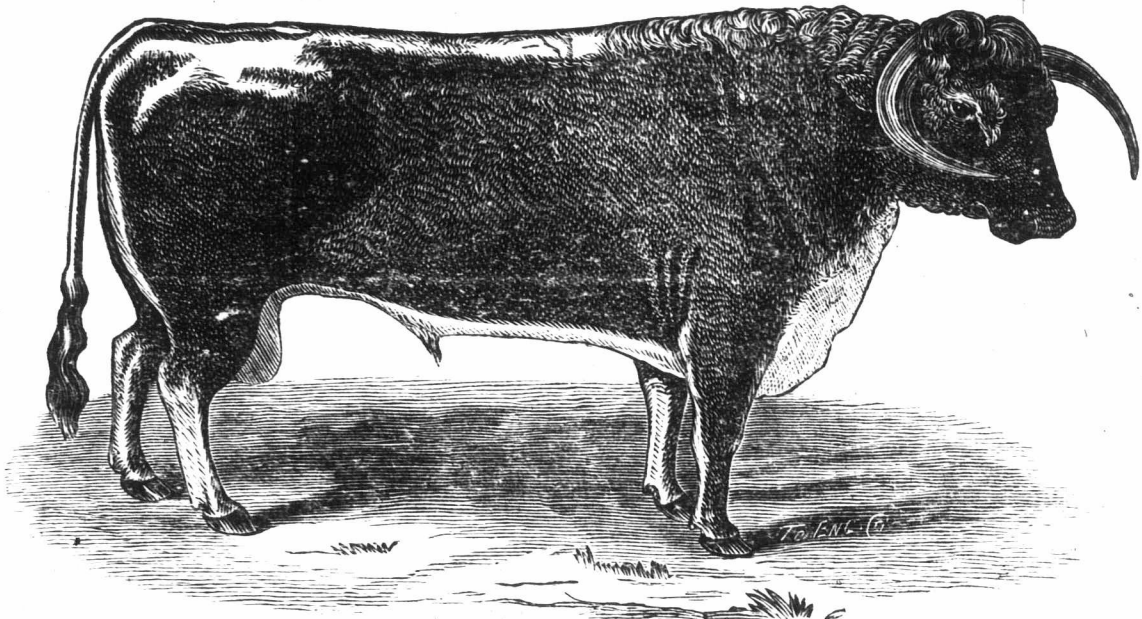
Longhorn pedigrees, as was "Huleback" afterwards in history of the improved Shorthorns, or the "Godolphin, Arabian or Bard," in the pedigrees of thoroughbred horses. The breeding of "Twopenny," as of "Huleback," is a mooted question, involved in mystery, not as to his quality, for this was universally admitted, but as to descent.

From these beginnings Mr. Bakewell, guided by rare judgment and great intelligence, reared beautiful and superior Longhorns; "they were long and fine in horn, with small heads, clean throats, straight, broad backs, wide quarters, light in their belly and offal, gentle and quiet in their temper; fattened with a proportion of food, but gave less milk than some other breeds. No man, perhaps, ever made more comparisons between different breeds of cattle than Mr. Bakewell; and no man who was able to tell so much, has told us so little of what he did, and how he did it—he showing his faith by his works, which everywhere proclaimed his skill as a breeder of farm stock, whether cattle, sheep, horses or pigs. He left one experiment on record: he put three new-milch cows in three separate stables, a Holderness, a Scotch and one of his breed; a Dishley Longhorn; the Holderness cat the most food, and gave much the greatest quantity of milk; the Scotch eat less food and gave less milk, but produced most butter; his Longhorns eat the least food, gave the least milk, made the least butter, but laid on the most flesh; hence it follows that the Dishley cattle are the best adapted for the grazier and the produce of beef. In the course of his life Mr. Bakewell showed many animals of his breeding of extraordinary size and fatness, but his particulars connected therewith."

Mr. Bakewell was chary of selling his stock, but was a great letter of bulls, stallions and rams, differing in the latter respect from the late Thomas Faus, the celebrated Shorthorn breeder, who would not sell, let, nor even suffer one of his choice bulls to serve a cow out of his own herd.

It is not claimed for the Longhorn cows that they are famous milkers, yet it is recorded of the cow "Thistle" that she made 17 pounds of butter a week. But the tendency of this breed is to grow fat. Thomas Pripser, a noted breeder of Longhorns, had a dairy of cows whose pre-eminence was defined to mean "symmetry, size, and aptness to fatten." He slaughtered a cow seven years old that weighed 1,456 pounds. But it is said of the breeders of more than half a century since they inclined to lose sight of the milking qualities for which the breed had been famous, and thus played into the hands of their Shorthorn rivals, by abjuring the very properties in which they once so much excelled; and as a Druid quaintly said, "When the Durham ox began his six years of caravan life the fate of the Longhorns was sealed." Not so, however, for they held their own with certain herdsmen, as the number showed.

In regard to the milk and the cream of the two breeds, it is a well known axiom that "though you may skim a Shorthorn's milk with a feather, a mouse may run over the cream of a Longhorn without fear of falling through." In fact, they (the Longhorns) are as hardy and profitable a breed as could be found, while as regards appearance, we know of no greater ornament, either to park or pasture, than a herd of these picturesque Longhorn animals. The Druid, quoted above, says: "There is something very quaint and grand in a field of Longhorns; and Mr. Chapman's grand old bull, the Earl of Derby, with thirty-two milch cows around him in the great meadow, was a sight ever



BULL OF THE LONGHORN DISHLEY BREED.

—was to mould into beeves, with "three-fifths roast and two-fifths boil." There was much interchange of blood between them, and many a ride these by-gone worthies must have taken across Charwood, sometimes called Charley Forest, ere Hugo Meynell of Quorndon awakened its wild beauty with the echoes of his woodland music, one hundred years ago. It was no easy matter then for a stranger to find his way across this almost pathless district; but what cared they "when a good bull was to be sought?"

Robert Bakewell of Dishley, Leicestershire County, England, was born in 1725, and bred to the business of his father, who was a farmer, as was his grandfather; and his early genius for selecting and improving stock was encouraged by his father, and Robert did more in this line of improvement than any one who had lived before him. Robert came in possession of his father's estate in 1755, and laid the foundation of his Longhorn fame by the purchase of two heifers of Mr. Webster of Canley, near Coventry, in the county of Warwick, and called them Canley breed, as Mr. Bakewell's improvement of the breed was called the "Dishley Longhorns," the former giving place, however, to the latter. Bakewell did not confine his selection to the Webster Canley herd, but selected elsewhere the best animals he could obtain, both male and female. He purchased a fine cow of Sir Wm. Gordon of Garrington, and from her he bred his celebrated bull, called the "Twopenny," so named because some one remarked to him that "the calf was not worth twopenny." This bull became famous in the

to be remembered by all admirers of live stock. Another point is their long life, it having passed into a proverb: 'As old as a Longhorn cow.' Bakewell's old bull 'Comely,' one of his very best, and the foundation of some of his choicest strains, when killed, twenty-six years old, had four inches of fat on the sirloin. The length and thickness of the horn vary with the sex, bulls being the shortest, and the horns of oxen the longest, the latter having been known to measure seven or eight feet from tip to tip, while those of the cows are more tapering, and finer. In color, the brindle, finch and pye, with white backs, are the most common. Their early maturity—a superior excellence—is proved, when tested with Shorthorns, there being no perceptible difference between them. The propensity to fatten is good, while the ofal is small. The breed has long been favorably known in Smithfield Market, founded in 1798, for affording the butcher the greatest number of valuable cuts along the back and ribs, the carcass being very cylindrical, the ribs standing well out, the flesh being of fine quality." Thus writes the editor of the *Agricultural Gazette*.

"Why, then," asks the reader, "did the Longhorns go out of fashion?" The question is easily answered, says our contemporary:

"The principles of breeding were not understood a hundred years ago as they are now, as it was the aim then of the great breeders to produce animals with very fine bone; this was carried to such an excess as to sacrifice both size and constitution.

Hence, after the death of Webster, Fowler, Bakewell and Prinsep, all noted Longhorn breeders, the breed declined, from having been brought to such a pitch of refinement as to render propagation very uncertain. This was an error of judgment in breeding, and no fault of the breed. Breeders of the present day are wiser, and are now producing animals remarkable for their hardy constitution, muscular properties and great size; and in the Midlands—their native soil and climate—the Longhorns answer the purposes for which cattle are bred better than any other breed."

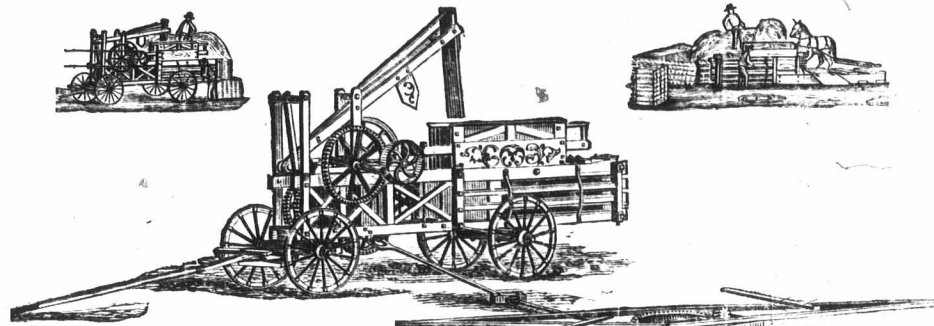
From Jan. 13 to Nov. 5, 1875, there were 122 Shorthorn sales in England and America, of high-bred stock, and thirty-three of these herds made a less average than R. H. Chapman's Longhorns, and twenty-three about the same average. In the show-yards the Longhorns have fairly held their own, when competing with other breeds, says the *Gazette*, as proved by the Smithfield Market, and

at the later shows of the Royal Agricultural Society of England. At the July show in Birmingham, the present season, the Longhorn classes were among the principal features of attraction. So large a collection of this breed has not been seen at the show-yard for many years as was exhibited at the late show of the Royal Society. Some sixteen herds were shown, comprising over sixty head. This would seem to indicate that the Longhorns are again coming to the front.

Breeds of cattle, like nations, have their "cloudy day," as well as their more fashionable or popular era, or their "dark ages." After occupying the place of honor and usefulness down to 1815, the Longhorns, as Youatt says, as quoted by Darwin, "were suddenly swept away as if by some murderous pestilence, by the introduction of the improved Shorthorns." The ancient fame and glory of the Longhorns still had their spell upon many who had ceased to keep them." The "curly coats" and hardy constitutions were well remembered as the heritage of the old brindled Longhorn, and how well they thrive on scanty pastures with little shelter; and no wonder a Shorthorn man lately said—"I know the Longhorn breed well, and feel sure there are no more serviceable animals under the sun, for general purposes, and I wish I had them now." A large English landowner also remarked, "Since I gave up Longhorns no cattle have done so well on my estate as they did, and I shall endeavor to procure them again." The Longhorn

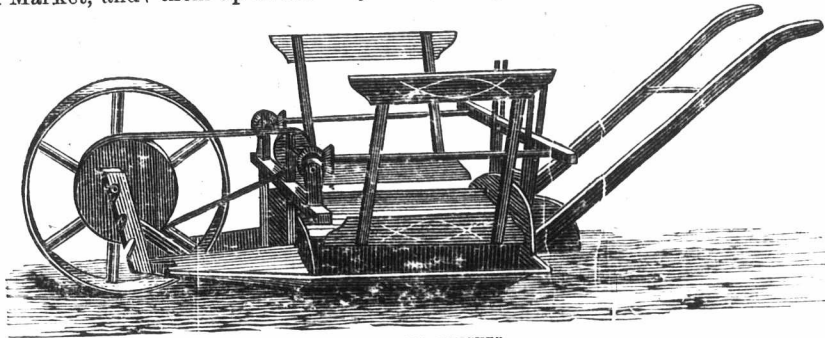
breeders are laboring to revive "the light and glory of other days."

Having thus sketched the history of the Longhorns from the earliest records down to the present time, being indebted almost entirely to English authorities, we will close with the record of the competing breeds as they stood at the Birmingham show in 1875, and compare them with Sir J. H. Crewe's Longhorn steer. In the Hereford class for steers over four years old, two of them were of less weight than the three-year-old Longhorn. Mr. Wortley's £100 prize steer, as the best Hereford, was nineteen months older than the Longhorn, but only 136 pounds heavier. Of the Hereford steers of the same age, the weights were all much less than the Longhorn. In the Shorthorn steers of the same age as the Longhorn, four were of less weight, and only one heavier. In the whole show only two steers of any breed, of the same age, were so heavy as the Longhorn.



THE PERPETUAL HAY PRESS.

We present to our readers this weak illustration of the well known Perpetual Hay Press, which received the highest and only award on Hay Presses at the Centennial, and also the first Premium at the last St. Louis fair over all competitors. The manufacturers of this machine, P. K. Dederick & Co., of Albany, N. Y., state that large numbers of them are sold annually for government use on the plains. That the principal Hay Merchants and shippers of this country use them and admit their superiority, and that the government representatives of Prussia, Russia, Austria and France, at the Centennial, also selected this machine as best, and their introduction under government influence and protection has already been effected in all of these countries. The manufacturers also claim that three-fourths of all presses sold annually are the Perpetual; that they are entirely beyond competition, and they will set them up on trial anywhere, and guarantee them to



POTATO-BUG CATCHER.

suit, and to be paid for when satisfactory. They guarantee them to put twelve tons of hay in a grain car, and more than any other kind of press; that the bales are prettier, the hay in better condition, and will sell for more money in market. Also that the press will bale faster, and load more hay in a car. In short, that it is superior in every respect and cheaper in price, as well as cheaper at its price than any other kind of press as a gift. All of which they guarantee and propose to satisfy the purchaser of the same or no sale. This certainly shows the confidence of the manufacturers in their press, and should at least secure the attention of purchasers, considering that they are the original Hay Press Manufacturers, and a successful firm of twenty years, standing.

Potato-Bug Catcher.

This cut represents the best machine we have seen for catching the potato bug. It is easily constructed. The two fans are driven by motion

from the wheel, and knock the bugs off the vines on to the machine, where they are caught in two boxes. Two rows are cleared by it at the same time. We used one of these implements on our potatoes this year. A boy can easily work it.—For many reasons this is preferable to using Paris green. This machine is manufactured at Berlin and Stratford.

Portable Pig Pen.

The writer has used the following plan for a cheap and portable pig pen for store pigs and finds it very convenient. It consists of two portions—the sleeping box and the yard, both portable, but not fastened together. Two men can lift each part separately and carry it into fresh ground when the yard needs cleaning out, and weeds, rubbish and potato tops can readily be thrown into the yard from a cart.

The yard is made of inch spruce fencing strips four inches wide, 10 or 12 feet long, nailed to 3x4 inch spruce posts placed at the corners and in the middle of each side. As the posts do not enter the ground, two men can easily lift the yard and carry it to fresh ground. Five strips are used on each side, with three-inch spaces between the strips. On one side of the yard two of the strips reach only half way, leaving an opening from the yard to the sleeping box. A trough of 1½ inch spruce, 6 inch wide, nailed together at right angles, is used for feeding in the yard.

The sleeping box is of matched boards 4 feet by 6 feet on the floor, thirty inches high in rear, and forty-two inches high in front, which is partly open, and stands against the opening in the yard. The roof slopes from front to rear like a lean-to shed, and there are two handles at each end, by which two men can lift for removal. This box stands on legs, which raise the floor 8 inches above the ground, keeping it dry in wet weather. By littering it well, the pigs will thrive in quite cold weather; but this arrangement is intended chiefly for summer use, when we generally carry a larger stock than can be accommodated in the more comfortable winter quarters. Eight or ten pigs just weaned are put in one yard, but as they grow larger a smaller number only should be allowed. The yards will need removal and cleaning out once in two or three weeks. This plan could be used perhaps by those farmers who feed their pigs on growing clover, removing the pens daily, much on the

same principle as the English farmers feed their turnips and other crops to sheep in the so-called "hurdles." Yard and box together will need about 250 feet of spruce lumber, and can be made in half a day by any ordinary man who can handle tools.—*Country Gentleman*.

A writer in the *German Town Telegraph* says:—We have utterly destroyed the canker-worms that were so destructive to our apple trees, by the application of tar. One barrel, we find, will cure two hundred trees. We now soften the tar with rain-water by warming it and apply it to the naked tree. At first we feared damage to the trees, but we find it does no harm to the most young and tender. Some tried kerosene oil to soften the tar, but it damaged the trees when applied to the bark. Water is better, and keeps the tar soft longer, and is much more effectual. Nothing but diligence will overcome them; it takes about thirty days to effect a cure. One man will tar about two hundred trees in about two hours, and must be done every day.

Dr. Summerville, an enterprising American, from Buffalo, has during the past year shipped a large number of horses from Canada. He has taken two commodious stables in the city of London, and is purchasing for Mr. William Smith of Glasgow. He is prepared to import any class of stock that may be required, having good connection in Europe to make selections.

Agriculture.

Canada Thistles.

If all the labor expended in exterminating Canada thistles in the United States were paid for at the rate of a dollar a day, the sum would probably pay off our national debt. But the question is, how can they be destroyed? I once had this pest in my garden, and I was told that by cutting them off with a hoe as fast as they appeared they would die before fall, "as no plant can live long by such treatment." Well, they were so cut off from spring till fall, and the next they appeared as before, and they are probably in the same garden yet, which place I sold 20 years ago. At the same time I had a field that was covered with thistles, which was mowed several years, and the most of the thistles disappeared. The theory was among the farmers of the vicinity, thistles cut off near the ground at a certain stage of their growth, and a rain occurs soon after being cut, filling their hollow stalks with water that it kills them; and this appears to be true. Ordinary plowing of the thistle land once in two or three weeks will not kill them; but a case that came to my notice was as follows: A neighbor cut the thistle in August close to the ground and put a tablespoonful of lime salt upon the head of every stalk. This did not kill them, but it so weakened their vitality that three plowings the next season destroyed them all. I once killed a patch of these thistles by sowing the land to buckwheat so thick that it completely smothered them.—*Colonial Farmer.*

Clover—Its Value to the Farmer.

Clover taken for all in all is, we think, the most profitable crop on the farm. A crop of cereals may bring more immediate profit, but that profit is but for the one crop and one season, whereas the profit from the clover crop continues for years. So the first and second years clover succeeds the crop for which it has been preparing the soil.

When we look to the effect of the crop of cereals and clover on the soil, we see at a glance their comparative value. While the grain crop is exhausting the soil of its natural or acquired fertility the clover in every stage of its growth and its consumption, is making the soil fertile. The following article from the Wisconsin State Agricultural Report illustrates this point:

We presume that a great many of the farmers of Wisconsin have a kind of general idea that clover is a good thing; that it makes a pretty fair food when cured; that it is passable for pasture; that by plowing under a crop of clover, you plough under a certain amount of manure of some kind, either good, bad or indifferent, and that if you have a few bushels of seed to sell when it is worth eight or nine dollars per bushel, it is really a good thing. But that any systematic effort has been made by any great number of Wisconsin farmers in its cultivation, so as to enable them to speak with any degree of certainty of its value as a crop, we are very much inclined to doubt. We do not pretend to be able to answer the question of the exact value of clover to the farmer, but from our own experience in its cultivation, we feel fully warranted in making the assertion that if the clover plant was better understood it would be appreciated, so that it would form the basis of our agriculture.

In speaking of the value of clover to the farmer, we have learned theories of our own or others to set forth. We think we can better observe their interest by giving a simple statement of experiments, extending over a period of years. By way of premise, it may be as well to state the reasons that caused us to experiment with clover as a fertilizer.

Several years ago we became conscious of a decrease in the yield of our crops. To remedy matters, we commenced feeding stock, cattle, sheep and hogs. We not only sold all the grain the farm produced, but we bought a great deal of corn from our neighbors.

After pursuing this policy a few years, we found it not altogether unsatisfactory. We could not always depend upon buying corn at prices that left profit in feeding it, and what was worse, with all our feeding, we could not make manure enough to keep our land up to the productive standard that we wanted it. We next turned our attention to clover, and the result has more than equalled our most sanguine expectations.

In the spring of 1869, we sowed twenty acres to clover, sowing it with oats, putting ten pounds to the acre. After the grain was cut, the clover made a remarkable growth; it headed nicely, and much of the seed matured sufficiently to grow. On the 15th of October following, we commenced to turn the clover under; it took good teams and good plows to go through it. The next spring we planted to corn, and harvested sixty bushels per acre. The next spring, we ploughed the ground and sowed oats. This brought the seed ploughed under in 1869 to the surface; the result was that we had the ground nicely set to clover again. The oat crop was as good as we ever handled. The next season we cut two bouncing crops of hay, then ploughed the ground in the fall. The two following years, 1873 and 1874, we produced large crops of corn. In 1875, we sowed to oats and again seeded to clover, sowing ten pounds of seed per acre, raising a heavy crop of oats, and got a good stand of clover. In 1876, we cut a heavy crop of hay the latter part of June; also secured four bushels of seed to the acre, later in the season. We are satisfied that that 20 acres is all right, and in condition to cut a hay and seed crop from next season.

On the first day of June, 1872, we turned eighty good young hogs, averaging 150 pounds, on fifteen acres of that clover that was sown the spring before. On the 15th day of September following, the hogs averaged a fraction over 250 pounds, a gain of 100 pound each, or 600 pounds for each acre pastured.

On the 25th day of May, 1874, we turned 120 shoats (mostly small pigs) that averaged a hundred pounds, on twenty acres of clover sown the spring before. On the 20th day of September they weighed 194 pounds each or 567 pounds gain to the acre of clover.

June 1st, 1865, we turned 95 head of shoats that averaged 126 pounds, on the same 20 acres of clover. On the first of October they averaged 230 pounds, a gain of 487 pounds per acre. We then ploughed up the pasture, and it was about as effectually dressed with hog manure as one could desire. Last spring (1876) we planted corn, commencing May 4th. It came up quick, and grew from the word "go," and produced the largest crop of corn, for a field crop, we ever grew in Wisconsin; as near as could be estimated, 82 bushels per acre.

In the spring of 1876, turned 120 fair shoats on 20 acres of clover. The value of clover has become so well established with us that we neglected to weigh them, consequently are not able to speak certainly as to definite results; but they would not differ materially from the preceding years.

The hogs were never fed a grain of corn or other grain, from the time they were turned on the clover until taken off and weighed before feeding for market. Another thing that pleased us was the rapid gain of the hogs when put on feed. They seemed to be just in the right condition to eat heavily, digest properly, and assimilate perfectly.

In 1872 we fed 42 days, and our hogs then weighed 365 pounds, having gained a fraction over 2½ pounds per day while eating corn.

In 1874, fed 42 days, the hogs weighing 315 pounds at commencement, gaining nearly three pounds per day.

In 1875, fed 37 days. They weighed 326 pounds at commencement, and gained within a small fraction of three pounds per day.

In regard to ploughing under green clover for a fertilizer, we prefer to pasture it off with hogs. Think the benefit to the land is as great or greater, and you will get paid for the clover; besides, would prefer to pasture the same land, when possible, two years in succession.

Our experience in this direction has not been so extensive as it has in feeding green. So far it has averaged as follows: An early crop of hay, cut by the 25th June, worth \$10 per acre; three bushels of seed secured in the fall, at \$7; thrashed straw, \$3. Total, \$34; from which deduct cost of harvesting and threshing, \$7, leaving \$27 net. We do not think the benefit to land nearly so great as when the land is pastured.

In conclusion we would say, if you want to clear your land of weeds, sow clover, and sow it thick. If you want to grow big corn crops, grow clover, pasture off with hogs. Plough up the land the last of September or the first of October, and the corn crop following will make you feel happy. If you want to make rich farms and make money, and not at the same time worry about railroad freights and railroad laws, grow clover, corn and hogs.

The Potato-Starch Industry.

We have before now written of the starch factory in New Brunswick, a very promising branch of the provincial industry. Where potatoes are easily raised, and sold at low figures, as in the Maritime Provinces, it has been found to pay a fair profit after deducting expenses. Of the potato starch industry in New York State a cotemporary writes as follows:

"One of the most important manufactured products of the small country towns of New York State is potato starch, and although the total quantity of potatoes consumed in the manufacture of the article is relatively but a small portion of the entire crop of the United States (which is estimated at 150,000,000 bushels annually), yet the amount of capital represented by the potato starch industry is by no means insignificant, and its yearly production in tons is frequently estimated by five figures and in dollars by seven. It is believed that nearly 3,000,000 bushels of potatoes are frequently consumed per year in the States of Maine, New Hampshire, Vermont and New York, in the production of potato starch. This amount is three-eighths as large as the total potato crop of Maine, three-fourths that of New Hampshire, three-fifths that of Vermont, one-tenth that of New York, of about the same magnitude as that of Massachusetts, and much larger than the crops of Connecticut or Rhode Island.

There are about 225 factories engaged in the manufacture of potato-starch, and probably all of them, with one or two exceptions, are located in the States of New York, Maine, New Hampshire and Vermont. Probably the average price paid for potatoes by starch manufacturers during the past season has been 25 cents per bushel. The aggregate annual production of all the factories is usually from 6,000 to 11,000 tons. A bushel of potatoes generally makes eight pounds of starch, 250 bushels being required for a ton. As the average market quotation of starch is 5 cents per pound, it follows that a bushel of potatoes brings only 40 cents after being converted into starch, and the value of the total production of potato-starch in the country is from \$800,000 to \$1,200,000 per annum.

Rotation of Crops—Clover.

A correspondent writes to the secretary of the Elmira Farmers' Club, in reply to a question in regard to a rotation of crops with clover, and the interesting discussion in the club on the question. "It seems to me that it is a problem somewhat difficult to solve, as there is much difference in the localities affecting the raising of clover. In some places it grows almost spontaneously, and in others it is very difficult to raise it. We think, however, that it does best in our clay soils, and we are beginning to look at the propriety of being more systematic in our methods of growing it.

"In the discussion sometime since the question was, clover or timothy? I have for some years noted the difference between the two, and have no doubt but a crop of timothy will exhaust land as much as a crop of wheat; whereas clover will enrich the soil in which it is grown. Why? Because timothy draws its entire nourishment from the soil, while clover obtains almost one-half of its sustenance from the atmosphere. One difficulty with most of us is that we allow our clover fields to run too long before we plow them up. Now, were I to suggest a method, I would say mow the clover early the first year, and cut a crop of seed, and mow again early the next season, let the second crop of clover grow until the first of August, then turn it under as perfectly as possible. Roll it, harrow and cultivate it thoroughly and sow it with wheat, and my opinion is that it will do better than summer fallow. My reason is, the soil is much lighter. By the decay of the clover roots wheat gets a good start in the fall, and when summer comes and the dry weather we generally have just before wheat falls, the roots get down to the moist, decayed clover, turned under, and the heads fill out beautifully, and the wheat will be very heavy. If you wish to plant with corn there is no better field for that purpose than a good clover sod turned under. Follow your corn with barley, then with wheat and seed with clover. Try this method with one field and another with timothy; give each field the same quantity of fertilizers for ten years and see which field will be in the best condition. With such a rotation of crops our land will improve with a crop every year, instead of losing one year in four or five for fallowing."

President Hoffman.—Does it strike any of the members that he takes off a great deal of the clover? Would it not be better to leave more? I should say after taking two crops it would be much better to pasture, thus putting directly back to the land all that grows after the first year's cutting. By this means he would be sure of enriching the soil more rapidly, and I have no doubt he would find the course attended by better results. —*Husbandman.*

Capacities of Land for Keeping Stock.

The FARMERS' ADVOCATE has before now pointed out the great difference between the live stock on American and English farms, as indicating the comparative state of agriculture in both countries. The following article from the *American Cultivator* enters fully into the question:—

One of the great drawbacks to successful farming in this country is the attempt to cultivate larger farms than the capitals of the owners will warrant, and, on the other hand, the lack of real faith and confidence in the business sufficient to lead those who have ample means to invest in good stock, fertilizers, and general farm improvements, instead of investing surplus capital in railroad shares and mortgages. Our well-to-do farmers, men who have accumulated something in their legitimate business, are too apt to look beyond their own soil and occupation for profitable channels of investment, many of them to their sorrow.

How much better would it be for these same thrifty, common-sense and successful producers to invest their earnings, beyond their household expenses, in their own business, in a concern of which they are thoroughly conversant, rather than entrust their capital to the management of strangers and perhaps to those whose only qualification for the control of vast financial schemes for moneyed men consists in the fact that they cannot manage their own affairs.

Farming in England is carried on with greater outlay of capital and with greater confidence in its productive results than generally prevails in America, and we find single farms there carrying double the stock that our farms are capable of supporting, showing that we haven't yet commenced to realize the possibilities of agriculture.

For instance, Tunley Farm, six miles south-west of Bath, in England, consists of forty-three acres arable and 155 acres grass, making 198 acres in all. The arable is worked on the four-field shift, wheat, roots, spring grain and clover. This farm carries in stock 48 dairy cows, 14 yearling heifers, 2 bulls, 100 ewes with lambs at their sides, 70 pigs, with such horses as are needed for farm work. The outlay for bought food was \$3,000 and for artificial manures \$110.

Dillington Farm, about one mile from Ilminster, consists of 142 acres arable and 275 acres grass, or 417 acres in all. The 142 acres of arable are worked on a seven-field rotation, viz., wheat, swedes, mangel, wheat, clover, wheat, turnips, and the effect is to produce every year 60 acres wheat, 60 acres roots, 20 acres clover and 2 acres potatoes.

The stock in May consisted of:—Dairy cows, 21; heifers going in, 3; oxen three years old, 12; yearling heifers and steers, 20; feeding heifers, 6; calves, 15; bull, 1.

Of sheep the number was:—Stock ewes, 301 of old ewes, 116; wether lambs, 171; ewe lambs, 164; fattening sheep, 50; rams, 5. Total sheep, 807. Also 8 working horses. The outlay for purchased food here was \$3,750 and for manures \$840.

Of nine farms, including dairy and general farms, that were offered as prize farms, the total acreage was 2,333 acres, of which 955 acres were arable and 1,378 acres were grass, and on this extent of land there were kept 579 cattle, 3,576 sheep, 81 horses and 184 pigs. Each 100 acres consisted of:—Arable, 40.93; grass, 59.07; and the stock kept on each 100 acres as follow:—Cattle, 24.82; sheep, 151.95; horses, 3.47; pigs, 7.89.

But the food bought for each 100 acres was about \$750. Yet, as 19.55 acres were in crop, of wheat, or oats, or barley, or beans, or peas, and as those crops are sold off the farm, or, if used on the farm, are entered as bought food, we may estimate that the stuff sold off the farm was at, say \$45 per acre, on 19.55 acres, about \$880. And as the food sold off the land was more than the food brought on to it as bought food, it is plain the land was able to keep the stock without any outside assistance.

Compared with the best managed of our farms, the amount of stock kept on these farms is surprising, and only goes to show that we have much to learn, or, at least, to practice, in bringing up the productive results in American farming to a proper standard. The true test of general farming is the amount of stock that can be profitably carried and brought into marketable condition. Better culture, more faith in the soil, would largely increase the meat production of this country, and should increase our stock so as to be able to supply the immense foreign demand for fresh meat, without such a rise in prices as to curtail the home consumption.

Excess of Humus in Soils.

The London *Agricultural Gazette* has an article bearing upon the subject of excess of humus in soils, in which it says the prevalence of chickweed is an indication of a soil having been manured beyond its capabilities. In relation to this matter we extract the following:

The common chickweed is so well known that its name has only to be mentioned. It is one of our commonest of garden weeds, and no less so does it track arable cultivation, always however in proportion to the constant use of manure and its assimilation to gardening, both in the crops grown and their treatment, and hence the root crop is sure to encourage the growth of chickweed.

We recollect once receiving from the top of the Cotswolds a sample of mould taken from a field in which the soil was said to be dead. It was described as being incapable of growing roots, and hence an opinion on its management was desired. Having then gone to the field in question for a personal inspection, we found a soil scarcely more than four inches in depth reposing upon a solid floor of the inferior oolite rock, so full of surface weeds, and especially chickweed, that the ground was completely carpeted with it.

The solution of the mystery appears to have been that the thin soil, though on limestone, was a hard undecomposed shelf of that rock, which from repeated croppings and manuring had, like our garden soil, become charged with humus. In this case the remedy we proposed was that of a thick dressing of caustic lime, which we have found useful both in the garden and in the field where this dead earth abounds; and we are happy to say that in this the remedy was highly successful.

Chickweed then on the farm is an evidence of an approach to garden culture, in which case a dressing of lime will often do more good than the best manure. Of course the hoe is the proper garden implement to kill chickweed when it is present—even hand-picking should be had recourse to if necessary, as in no case should the enemy be allowed to ripen its seed.

Relative Values of Food.

The relative value of oats and barley for feeding horses may be said to be definitely settled, in the sense that, in warm climates, such as the South of France and Algeria, barley exclusively is suited for Arab blood horses, but other horses thrive best, and are exempt from the disease of foundering, when in a like climate the ration consists of one part of barley and one of oats. As barley contains but little lime—less percentage even than in maize—draught horses, when fed on that grain, ought to have their food completed by lucerne, clover or sainfoin, or meadow hay containing some of these leguminous plants rich in lime.

The Position of the American Farmer.

F. G. E. in *Western Farm Journal* says:—In no country is agriculture so despised as in America. The Emperor of China holds the plow one day in the year as a mark of respect to agriculture. But says the fast Yankee, "China is barbarous." China has better agriculture than America. She has the largest population, the longest canal, the widest bridge, the deepest well, the greatest wall, the longest avenue of large trees in the world—she dates back in authentic history before our creation—she furnishes a good deal of our best scripture sayings—but is barbarous. A tenant farmer in English society ranks higher than a proprietor of land in America. France does not, like America, legislate against her agriculturists, but leaves them free and untrammelled and is commercially very successful. Her agricultural population are peaceful and prosperous, and would so continue if political demagogues would let them. Here we have demagogues and political quacks both to contend with.

Another Trial of Dynamite.

The use of dynamite or giant powder in clearing land of stumps and rocks appeared to us to be practicable, when the mention of it first came to our notice, and since then we have watched for any further information on the subject that might appear.

Some experiments were recently made under the direction of an expert who has made the business of clearing land by this method a specialty, and it appears that they were very successful. The first trial was made on a white oak stump 30 inches in diameter and deeply rooted. After punching a hole beneath the stump to its centre with an iron bar, a charge was inserted, consisting of two cartridges filled with the explosive; they were tramped with some earth, and a pail of water was poured into the hole, which consolidated the earth around the hole. The fuse was then ignited, and the stump was split into numerous fragments and thrown entirely out of the ground, nothing remaining in the earth but a few loose shreds or roots. Several other stumps were taken out in like manner, occupying but a few minutes' time. The next trial was made on a fast rock weighing about 10 tons. As in the case of the stump, a hole was made beneath the rock, and three cartridges were inserted and exploded. It was blown into fragments which could be easily handled and removed.

This explosive is a mixture of nitro-glycerine with absorbents, by which, it is claimed, this dangerous explosive is transformed into a solid substance which is perfectly safe. In this form it is said to be impossible to explode it by ordinary accident, and its effect cannot be obtained until properly arranged in suitable shape for the blast. It is prepared and placed in cartridges suitable for blasting purposes. These cartridges are of varying sizes, according to the uses and work for which they may be wanted. We do not know what is the cost of the preparation or cartridges, but presume that it is not expensive. If all that is claimed for this method of clearing land of stumps and rocks is correct, it will, indeed, be a godsend to many farmers in very many localities besides the timber regions of Michigan.—*Western Rural.*

How to Save Clover Seed.

One of our best clover seed savers is just at our elbow, and he says:—Tell them the second crop is the one for seed, and is really fit for no other purpose, as it salivates the stock fed on it; that the best time to cut for seed is a very nice point to determine; it should be cut when the majority of the heads turn brown, and before any begin to shed off the little seed pods, each of which contains a seed. Cut the second crop of clover just as though it were for hay, rake it into windrows and let it lie and take one or two showers; then put it into very small cocks while damp, about one good pitchfork full in a place, and when it is dry, put into stacks and cap with something that will turn water; or what is still better, if you have a shed or barn, put it there and let it remain till you can get a huller to get it out for you. There are hullers enough now in the State to hull all the seed needed for home use, and the owners of the hullers are willing and anxious to go to any section where work can be had. Let our farmers save all the clover seed they can, and thus help to make thousands of dollars for the State, now sent out each year for clover seed to sow.—*Rural Sun.*

J. J. Mechi, whose name is familiar to all readers of agricultural papers, is a good specimen of an employer of farm laborers in Old England. Hear him for himself:—

During the summer I am frequently dressing between 4 and 5 a.m. (the sun shines before 4), and at 4.30 punctually I see, hoeing in a field of promising mangels, my old laborer, Moss, with one sound leg and a wooden one. He breakfasts at 8 and dines at 1, without cups and plates or tables. The ditch side is his seat. At 4 in the afternoon he leaves off work, and stumps his way home. When chatting with him, as I often do with my laborers, he tells me he is only seventy-four (one year my junior)—a better hoer never stumped the soil. John Moss makes his harvest during the hoeing season, and he is unable to do ordinary farm work. He has been my occasional laborer for many years, and most of my men have been with me over 30 years. So we are enabled to discuss and revert on the "good old times" when this neighborhood was in a very rude and primitive condition. I feel grateful to Jethro Tull; for the horse and hand-hoe are some of the farmer's most profitable tools.

Applying Bone Dust.

The amount of bone or phosphate to be applied to wheat, will depend on the condition of the land. If in good heart or fair condition, 150 to 250 pounds to the acre will give good results. If the land is fair, use 250 to 300 pounds to the acre, and if the land is so poor or exhausted that you fear young grass will not make a good catch, then apply 300 to 400 pounds to the acre. The above amounts are for fine-ground raw bone and the best class of phosphates. If the bone is coarse or the phosphate poor, then much larger amounts must be used to obtain the same results. We get a fine, pure, clean raw bone fertilizer here that is all we can ask or desire. We get the best results from this bone by drilling in with the seed, for a small application. But if you want to make a heavy application, of say 300 pounds, we drill a portion of the bone dust separate, and then go over the same way finishing with the bone and wheat mixed in the drill together. We used to get phosphates in the East which were made of bones, but now some of them seem to have very little bone in them. We value them more for a quick start of the crop; but when we want a fertilizer that will give good present, and at the same time, long-continued results, we want either bone or else a phosphate that is made out of bone. In our former discussions here, over our experience in using fertilizers, we have settled down to about this conclusion—that the farmer who is settled on his own land had better use the best raw material he can get to put into his land, and let the elements in his land do the manufacturing of his phosphate or superphosphate, as you prefer to call it.

In conclusion I would say to my brother farmers—buy good goods only, and there will be less disappointment. My observation is that the fertilizers which are sold at the lowest price per ton, are in fact the poorest bargain. For my part I don't want to encourage adulteration in fertilizers by buying articles which are offered at less price than pure honest goods can be furnished at. We had better buy a little of what we really need than large amounts of something our land or crops can not use. I should have said that if bone is applied broadcast it should be sown on the rough land before harrowing, so when harrowed the bone would be as deep in the soil as possible. If sown after first harrowing, the effect would be to push the grass more than the wheat.—W. H. C. Ohio Farmer.

The Farmer of the West.

Some of our young Canadian farmers, believing the stories that are told by railway land agents and others, act as the little boy of the story book, who cried "Make me a hammock and roast me a scallop, till I go and seek my fortune." Did those discontented young men but hear the doleful stories told by many Western farmers of their hardships and misfortunes, they would be less anxious to exchange a quiet Canadian home for the risks attending a migration to the West. A Western farmer, R. W. Woods, of O'Brien County, Iowa, thus describes the condition of the farmers in that place:—

It is certainly true that some crops have been entirely destroyed. We have seen large fields with nothing but stalks an inch or so above the ground, and when we saw other fields, where the grain was so heavy that it seemed as if it must lodge, as we passed it in the morning, and when in the evening it was all aflame with the red grasshoppers, we could but feel that it was only a question of time with those fields also.

But the grasshoppers are rapidly getting wings, and coming and going with the winds. What direction they will take when they go out on their grand foraging expedition is yet a question; we can only hope they will sweep out of and not over Iowa. When a few days ago they swept the grain from the fields in the county south of us so completely, the farmers here were panic-stricken; they lost all hope at once. "We must get away from here," some said. Others said "But where can we go?" Ah! that was the question; where could they go? When the crops were taken last year, there were many who sacrificed everything they had gained by their years of toil, and went in search of a place where they could find some reward for their labor. To every point of the compass they went, while those who stayed home only waited for their neighbors to follow them, should the crops fail this year again. "But from the east and the west, from the north and the

south, there comes in substance the same sorrowful story: "Times are hard here; there is no money to be got for anything; nothing to do; every kind of business is overdone. Stay where you are." But in spite of all that, some men have been so unwise as to throw away their farms. There passed our house an hour ago a very inferior looking cow, worth perhaps \$20. That cow was the price paid for a farm of 160 acres of land, more than half under plow, with grove, a small house, and some other improvements. The purchaser assumed the mortgage of \$500, due in four years. You can read the story between the lines—the hard working man was not able to pay the interest on the borrowed money.

The Seventeen-Year Locusts.

The Troy, N. Y., *Times* says the locusts have appeared in large numbers in the vicinity of Greenbush in that State. They come out of the ground in the shape of large grubs, but soon after their wings are developed and they take to flight. They are not destructive to crops, but feed upon trees and shrubbery, in some instances completely removing the foliage from a large tract of country. Although their appearance has only been reported in one locality, there is no doubt they can be found in this section. When full grown they are about an inch and a half in length, and they make a loud humming noise while flying through the air. A singularity regarding their emergence from the earth is, that they all come out backwards. They are called the "seventeen-year locusts" from the fact that they only appear every seventeenth year. In 1860 they were numerous, and this was the first time of their appearance since 1843. In 1826 they were so plentiful that the trees were covered with them, and they could be gathered by the bushel with little trouble.

Wheat in the North-western States.

The figures compiled by several of the leading American papers, with respect to the quantity of wheat grown and gathered this year in the most important wheat-growing States of the Union are important and interesting.

We select the Chicago *Tribune's* estimate, by which it appears that there have been secured about, in round numbers, as under:—

	1875.	1876.	1877.
	Bushels.	Bushels.	Bushels.
Minnesota.....	27,000,000	16,000,000	35,000,000
Iowa.....	29,000,000	18,000,000	39,000,000
Wisconsin.....	25,000,000	15,000,000	25,000,000
Kansas.....	12,000,000	12,000,000	20,000,000

Total.....93,000,000 61,000,000 117,000,000

Showing that the four States above mentioned will have sown 56,000,000 bushels more wheat to sell than they had last year.

These figures are compiled mainly from the estimates and reports of the Agricultural Bureau of the U. S., and the acreage known to be under wheat has added in the calculation. In 1875, for example, Minnesota had an acreage of 1,764,000, in 1876, 1,874,000, and in 1877, 1,990,000 acres, and so great is the average yield as compared with last year, the *Tribune* considers 35,000,000 bush. against a little over half that quantity last year, as a safe calculation. The N. Y. *Bulletin* considers that the wheat crop in California this year will fall short of last year by perhaps 12,000,000 bushels, but the aggregate crop of Kentucky, Tennessee, Ohio, Indiana and Michigan will exceed last year's by 35,000,000 to 40,000,000 bushels. The conclusion drawn from these figures, and from the assumption that wheat will be freely sold by farmers at say 90 cents, is that the farmers of the United States will receive nearly fifty millions more for their crop of wheat this year than they did last.

WHEAT GROWING.—Wheat growing has nearly ruined one section of Wisconsin. It has destroyed the fertility of one of the best soils that ever the sun shone on. It has introduced a vast army of insects which now stand ready to destroy other crops. Worse than all, it has struck the farmer himself with a mental blight. Like intemperance, it steals away his brains, making him totally oblivious to his own folly. The culture of grass and corn, and raising of beef, pork, butter and cheese is the remedy for our impoverished farms and farmers. Dairy-men are getting rich, grain-raisers are getting poorer every year. The profits that come from grass culture are not excessive, but they are sure, and besides, the farmer is not selling out his farm by the bushel.

S. Van Norman, at a recent meeting of the Elmira Farmers' Club, in a discussion on ploughing deep or shallow, said: "I had a case which showed very plainly the benefits of deep ploughing. Last year I came into possession of a fallow, which, in the spring, I plowed. When my man had the work started I noticed he was skimming it, so I asked why he did not go deeper. He said 'it is so hard I can't get the plow down.' I could not satisfy myself with the work, so I said it must go down. I will beam it and pay whatever may be required for the increased labor of the team. We put it down by pressure to nine inches of depth. My neighbor had a garden close by plowed as mine was started, three or four inches deep. I am sure I had twice as much produce from my garden as he had from his. Last spring there was a like difference in the ploughing and my advantages in the yield show as plainly as before."

The grasshoppers have so far destroyed the feed in some pastures near St. Albans, Vt., that the farmers have been obliged to commence feeding their cattle with hay. Several are mowing their oat crops for fodder or drying it for winter use. Corn stalks are eaten off by the pests, and, unless wet weather sets in, it seems inevitable that they will destroy most of the unharvested crops and the fall feed.

The Boulder (Colorado) *News* says: "Benj. Long has contrived the simplest, least expensive and best grasshopper machine we have yet seen. It is a V-shaped pan about six feet apart at the points, the pan being about two inches deep, with little partitions about a foot apart. In the centre where the pans come together is the axle, upon which the machine is supported by two wheels, say two feet in diameter. To keep the pan from fouling, a little elevator skims from the surface of the oil and water the dead hoppers and deposits them on the ground behind. The machine is pushed from behind, is nicely balanced and easily run over rocks and rough ground. At the back of the pans, extending upwards is a wire screen about eighteen inches high, to prevent the hoppers from hopping over. This is all there is of it, any boy can run it and its cost will not exceed \$20. Mr. Long has applied for a patent for his machine, and will furnish them in any quantity for \$20 each. Persons interested can see at this office, a full half-bushel of hoppers caught in four hours' work, on about a half-acre of ground, at Mr. L's. place, north of this town. The lot weighed 35 pounds, or about 70 pounds to the bushel. If the celebrated grasshopper commission would spend a little of their funds as bounty money, many ingenious minds would be at work, devising means for the extermination of the pests."

My observation in regard to clover and clover-seed raising has been greater than that of many on account of having followed threshing from my youth, and many seasons have run four machines. I have always noticed that whenever we found a job where there was a large yield, that it was where seed had been sown one bushel to five or six acres, mown the last days of June, and plastered after the first crop had been taken off. I have seen a field when one-half had been mown and got off before July 1st, and the balance of the field not till two weeks later, and the seed that was started first yielded three and one-half bushels per acre, and the balance one-half bushel per acre; the difference three bushels. This you see was quite a loss to the raiser; the hay first mown was equally as good as that which was mown last. I have raised seed myself that went four and one-half to the acre. I have also taken clover from the field in three different conditions, and laid away in the dry, for the purpose of knowing when was the best time to cut seed clover. The first state was then dead ripe; second, when handsomely brown; and third, still greener, and, when thoroughly dry, rubbed out the seed and put the three piles on a plate and could see no difference. That which was cut the greenest was just as plump seed as that which was dead ripe. This shows that the head receives enough sustenance from the stalk after it is cut to mature the seed, and, when cut a little greener, you can save almost every seed. Always turn when the dew is on, so that the bolls will not rattle off.—[Clover Leaf.]

The N. Y. *Times*, in speaking of the present unsatisfactory and unprofitable condition of farming, and admitting that half of the farms of the country are ready to be sold if, buyers would only appear, suggests that the remedy will be found in concentrating the lands in the hands of the wealthy men, who will rent farms to tenants on long leases.

Notes on the Garden and Farm.

Attend to the accumulation of manure by every possible means; let it be gathered as it is made, and stored in good-sized heaps, well covered to preserve its most valuable components from being washed out by the rains; remove all road-scraps, parings of banks, ditches, and the accumulation of rich earth on the headlands to the compost heaps, mixing them with fresh lime, sea or pit-sand, making them up into pyramidal heaps to throw off the rain.

J. P. Delaplaine of Elm Township, Kansas, recently cut down a cottonwood tree—grown in the open field near the house—14 years old, which measured a little over 14 inches in diameter and proportionally tall. We simply mention this to show what may be done on our prairies in the way of growing timber. Ten acres of land set out in some of our fast-growing varieties of trees will in a few years supply a family with fuel. Cottonwood is not the most valuable timber in the world, but it makes fair fencing lumber and, when seasoned, excellent firewood.

Dirt has its lower uses, and for these everybody should lay by a stock in dry weather, when it can be procured from the road in a fine dry condition. It keeps vermin from all domestic animals, cattle, poultry, colts, which are liable to become infested with them. Sprinkle it on the backs of your steers and cows and see how they enjoy the bath. Put it into boxes where your poultry can wallow in it and witness their daily resort to them as surely as to their feed boxes. If animals are supplied with dirt they will have no vermin; if they get infested with lice apply it every day and it will remove them. The beauty of this remedy is, it is cheap, easily obtained, and there is no danger in its use. If you have no dirt on hand now, remember to put up a few barrels next Summer for Winter use.

The manufacture of sugar from beets is to be tried at West Brookfield, Mass., this season. The milk-condensing factory at that place will be used for the purpose, as the vacuum pans and part of the machinery can be used in the process, while other needed machinery of the most approved kind will be added. The farmers will be paid \$5 per ton for the beets; the factories in Germany pay only \$4, and the factory in California \$4.50.

Dr. Masters showed roots of *Triticum repens* which were found most serviceable in binding the sand together on the sea coast at Dunrobin. Mr. Berkeley remarked at one time it was proposed to utilize the roots of the twitch in the manufacture of paper, but that the experiment had not been successful. Mr. Edgeworth remarked that the twitch formed good food for pigs.

A New Hampshire paper relates that at Newton, in that State, a mad dog, after having been wounded, took refuge in a barn, where some of the hay became soaked with his blood. The hay was fed to a horse, which went mad.

The great error in wheat husbandry consists in this:—Sufficient time is not suffered to elapse between plowing for wheat and seeding to admit of that packing of the soil and that preliminary decomposition of crude vegetable matter which, on most soils, is an indispensable prerequisite to a good wheat crop.

An American journalist writes:—"At a neighbor's, where I happened to be a guest, a servant came rushing in, saying that all the cows had eaten of the green clover brought up (for soiling), and that they were much bloated. My advice was asked, and I directed the cows to be put into the yard, which was only accomplished with difficulty; and I found ten or twelve cows of the best Swiss breed in this same condition: drinking water after eating clover. My water bath was at once resorted to. Everybody, including the lady-guests, went to work with a will pumping and carrying water. I emptied it, a bucket at a time, over the backs of the cows, put some garlic into their throats, and in about half an hour had the satisfaction of seeing all the animals relieved. This is a cheap remedy that is available on every farm. It was published in several German agricultural papers, and I had the satisfaction of hearing that wherever it had been resorted to in time, it had cured the afflicted animals." The above information may be of great value in case of an attack of the hoven, but I have the utmost faith that this remedy will not be needed if dry hay or straw is within reach of the animals as a preventive.

The success which the French have attained in conveying fresh meat in good condition from the River Plate, threatens us with competition from that quarter in the European markets. Much will, however, depend upon the cost of transportation in the steamer which the French have so carefully constructed for the purpose. Whatever rivalry may follow, we most benefit, in a general way, from all improvements in the conveyance of perishable products.

Professor Stewart, of Cornell University, has found, by actual experiment, that one-quarter of an acre well set in clover is sufficient to feed one cow 180 days, if cut and fed her, while if allowed to run on it would not probably last two weeks. Another advantage in the care of milch cows is that they give more milk from the same amount of food, it being found that the walking to and from pasture diminishes the quantity of milk.

HOW TO HARDEN BUTTER.—An English butter maker of large experience, who is now on a visit to this country for the purpose of looking over our cheese and butter dairies, gives the following information concerning a method in practice among the best butter-makers in England, for hardening, or rendering butter firm and solid during hot weather. Carbonate of soda and alum are used for the purpose, made into a powder. For twenty pounds of butter one teaspoonful of carbonate of soda and one teaspoonful of powdered alum are mingled together at the time of churning and put into the cream. The effect of this powder is to make the butter come firm and solid, and to give it a clean, sweet flavor. It does not enter the butter but it acts upon the cream, and passes off with the buttermilk. The ingredients of the powder should not be mixed until required to be used, or at the time the cream is in the churn ready for churning.

Dr. E. Wolff, a German chemist, experimented upon two cows in feeding raw and cooked potatoes with hay and rape-seed cake. Fed on cooked potatoes the cow did not give as large a quantity of milk as when fed on raw potatoes, but the milk made nearly a third more butter. When fed on raw potatoes it required 42 pounds of milk for 1 pound of butter, but when fed on cooked potatoes it required only 27 pounds of milk.

A New York farmer goes wild over Guinea hens. He declares that each one will keep an acre of potatoes clear of bugs, and will answer every purpose of a barometer in predicting storms. He also says that they will not scratch, and lay more and better eggs than the common hen.

A subscriber in Central Canada asks us to inform him "why it is that butter is seldom or never quoted in the weekly reports of the Liverpool markets, whilst tallow, lard, pork, beef and cheese are quoted regularly." In reference to this, we would say that the same absence of quotation in the case of butter has been remarked to us before. Butter does not appear in the quotations of any European market, except in the circulars of particular firms. The cable reports do not give the state of the butter market in Britain. One reason for this, probably, is that American butter, being an article which is not graded, cannot, therefore, be quoted except approximately. If there were a general understanding as to what constituted certain qualities, as in grain or in pork, it might be more possible to attach a price to the different grades. We may remark that butter is quoted daily to New York, and the price in Britain put upon the bulletin of the Provision Exchange there, but nowhere else. Our daily newspapers might, we should think, procure these quotations and publish them, if they saw fit.—*Monetary Times*.

We see it stated that a number of wheat growers in the vicinity of Chatham have formed a combination to hold their grain till the price offered by the local buyers rises to a point which pleases their fancy; and that the buyers, not unnaturally, refuse to advance. We are not told what the price is in either case, and are unable to judge what grievance, if any, the sellers have; but we fear it is the usual story with them, and a very foolish one. The farmer takes upon himself to decide what his wheat should be worth to the dealer, and stubbornly holds out for that figure. He does not, probably, know how the British markets rule, nor look at the prices in Chicago or New York. He gets some fancy about war prices, and is snared by an idea; but he often ends by taking, six months afterwards, a half less than he was previously offered. It is never safe to refuse a fair price. Thousands have been lost to individuals, and millions to the country, by just such folly.—*Monetary Times*.

Cattle Breeding and Feeding in Kentucky, U. S.

Extract from a letter of a correspondent of the *Scotsman*, now on a tour of enquiry to stock-feeding States of America:

Very few steers are fed by their breeders. Stock men and farmers who do not feed many, buy up steers in the fall, when about thirty months old, and feed them in open fields (no shedding here) during winter with Indian corn, and perhaps a little hay or corn fodder, and then graze them all summer, and sell them off as beef in the fall. The more enterprising farmers handle only the best lots, and feed them pretty liberally when they have them. They go round in numbers and select their choice steers in small lots, sometimes as small as twos and threes, and take delivery of them in the fall. The demand for the better class of steers is unusually active this season, already they are almost all bought up at 5 and 5½ cents per lb., or about one cent per pound above the buying prices of last year. When bought lean these finer steers will weigh about 1,300 lb., and during their breeding year they will take on between 400 and 500 pounds. It is expected that this year a little over 6, or probably 6½ cents per pound, may be obtained when the steers are fat, which would make the value of a 1,700 lb. steer from \$105 to \$110, or £21 to £22. The cost of a 1,300 lb. lean steer last fall (at 4½ cents per pound) was \$58, or £11 12s., which would leave a balance of about \$50, for the year's feeding and profit. During the winter of six months (supposing the steer is a year in his feeder's possession) a steer consumes about sixty bushels of Indian corn, worth about \$20; and then the grass he eats during the other six months, if rented, would cost about twelve dollars (two dollars a month). Salt and labor would cost about two dollars, and thus the total cost of the year's feeding (minus incidental expenses), amounts to about \$34, or £6 16s. The profits this year will be larger than for a long time back, and they are not likely to be so large again for some time; that is to say, the buying price is not likely to be so low as it was last year. Farmers generally consider that \$40 a head would pay well for a year's handling. The better class of Kentucky steers—those referred to in the above calculations—would probably dress from 55 to 60 lb. of beef to the 100 lb. of live weight, and thus with carriage, which would add barely half a cent per lb., the cost of their dressed beef in New York would be from 10½ to 12 cents, or from 4½d. to 5½d. per lb.

The demand in Kentucky, as all over America, for improved Shorthorn bulls is growing steadily, and greatly increased attention is likely to be bestowed on the rearing of cattle of good quality. Farmers are beginning to realize better than ever the advantages to be derived from the raising of the best possible class of cattle, and they know that it is by using Shorthorn bulls, and in that way only, that they can convert their inferior herds into animals of good quality. Kentucky farmers do not think that the cost of beef-production will increase very largely for, at any rate, ten or fifteen years, but they think that by that time there will be ten improved steers for every one at the present day. They think the exportation trade will bring about great improvement in the general cattle stock of the country, by creating a reliable and profitable outlet for the better quality of beef.

The number of sheep in Kentucky in 1876 was 683,600, and their assessed value barely 11s. a head. The flocks are mixed and inferior. A number of good Southdowns have been imported within the past few years, but it is a pity to see such an inferior class of sheep occupying so rich a country. In the same year hogs numbered over a million and a half, and were valued at £1 2s. a head. Berkshires predominate.

The cost of keep to the "General Cab Company" of Paris, taking one horse with another, may be given as follows, taking the year 1875 as a sample: Oats, 10d.; maize and beans, 5½d.; straw, 3d.; and hay, 3d.; making in all, 1s. 9½d. a day, or £2s. 6½d. a week. The price, of course, varies in different years, and in 1874 it was only 1s. 8½d. a day, but it is not likely there will be much decrease, though Col. Wolf is hopeful that the admixture of maize with the oats will enable him to effect a saving. Maize has now been in general use as a partial substitute for oats during more than a twelvemonth, and he is sure that his horses do very well upon it. In many of the stables sawdust has been substituted for straw, and here too a considerable saving may be confidently looked for.

Garden, Orchard and Forest.

English Roses.

FLORAL DECORATIONS OF LONDON—THE LIGHT AND THE BIRDS.

(From a correspondent of the N. Y. Tribune.)

English flowers, it must often have been noticed, are altogether exceptional for substance and pomp. The roses in particular—though many of them, it should be said, are of French breeds—surpass all competition. It may seem an extravagance to say so, but it is certainly true that these rich, firm, brilliant flowers affect you like creatures of flesh and blood. They are in this respect only to be described as like nothing in the world so much as the bright lips and blushing cheeks of the handsome English women who walk among them and vie with them in health and loveliness. It is easy thus to perceive the source of those elements of warmth and sumptuousness which are so conspicuous in the results of English taste. This is a land of flowers. Even in the busiest parts of London people decorate their houses with them, and set the sombre, fog-grimed fronts ablaze with scarlet and gold. These are the prevalent colors (so radically such that they have become national), and when placed against the black tint with which this climate stains the buildings, they have the advantage of a vivid contrast which much augments their splendor. All London wears "a suit of sables," variegated with a tracery of white, like lace upon a pall. In some instances the effect is splendidly pompous. There cannot be a grander artificial object in the world than the front of St. Paul's Cathedral, which is especially notable for this mysterious blending of light and shade. It is to be regretted that a climate which can thus beautify should also destroy; but there can be no doubt that the stones of England are rapidly defaced by the fogs. Already the delicate carvings on the Houses of Parliament are beginning to crumble. And yet, if one might judge the climate by this glittering July, England is a land of sunshine as well as of flowers. Light comes before 3 o'clock in the morning, and it lasts, through a dreamy and lovely "gloaming," till nearly 10 o'clock at night. The morning sky is usually light blue, dappled with slate-colored clouds. A few large stars are visible then, lingering to outface the dawn. Cool winds whisper, and presently they rouse the great, sleepy old elms; and then the rooks—which are low comedians of the air in this region—begin to grumble; and then the sun leaps above the horizon, and we sweep into a day of golden, breezy cheerfulness and comfort, the like of which is never known in New York between late June and early October. Sometimes the whole twenty-four hours have drifted past, as if in a dream of light and fragrance and music. In a recent moonlight time there was scarce any darkness at all; and more than once or twice, I have lain awake all night—within three miles of Charing Cross—listening to the twitter of small birds and the song of the nightingale, which is like the lapse and fall of silver water. It used to be difficult to understand why the London season should begin in May and run on through the summer; it is not at all difficult to understand the matter now. Meantime the sky is softly blue and full of magnificent bronze clouds; the air is cool, and in the environs of the city is odorous with the scent of new-mown hay; and the grass and trees in the parks—those copious and splendid lungs of London—are green, dewy, sweet and beautiful.

Persons "to the manor born" were lately calling the season "backward," and they went so far as to grumble at the hawthorn as being less brilliant than in former seasons. But, in fact, to the unfamiliar sense this bush of odorous coral has been delicious. You know it, doubtless, as one of the sweetest beauties of rural England. It deserves its reputation. We have nothing comparable with it in North America, unless, perhaps, it be the elder of our wild woods; and even that, with all its fragrance, lacks equal charm of color. They use the hawthorn or some kindred shrub for hedges in this country, and hence their fields are seldom disfigured with fences. As you ride through the land you see miles and miles of meadow traversed by these green and blooming hedges, and you find that they give the country a charm which is quite incommunicable in words. The green of the foliage—enriched by an uncommonly humid air and burnished by the sun—is just now in perfection, while the flowers are out in such abundance that the whole realm is one blaze

of color. I saw the other day, near Oxford, on the crest of a hill, at least three thousand square yards of scarlet poppies. You can easily imagine what a glorious dash of color that was, in a green landscape lit by the afternoon sun! Nobody could help loving a land that woos him with such beauty.

Value and Protection of Shade Trees.

The protection of shade trees requires more attention than is often given. We have just seen one of a handsome row of maple shade trees destroyed by barking by a horse that had been tied to it. After receiving the injury it lingered on for some years, and now when about twelve years planted it snapped across at the injured part from being unable to resist a gust of wind. The following brief item from the *Germantown Telegraph* is applicable to more places than the Quaker City:

Some few dwellings never had a tree around them, and the owners have lived year in and year out, till by either keeping all the windows tightly closed in summer, or defying the sun and heat to do its worst on them, they have become as pale as a stick of blanched celery, or as brown as a coffee-bean, as the case may be. These persons have a confused sense of inconvenience by the summer heat or sun, but with their physical feelings dulled they are not likely to feel or appreciate the grateful shade of a living tree.

Most of us, however, have at some time or another enjoyed the luxury, and it is a matter of surprise, with this fact before us, that so few take any thought or care to preserve the luxury from harm. There are in the great city of Philadelphia some sixty thousand houses fronting on streets. Of these almost all at some time or another had trees set in front of them. At the same time we should say at a rough guess not ten per cent. are still existing. Why? Some say trees will not grow in cities. This is nonsense so far as the smokeless city of Philadelphia is concerned. Almost all have been killed by insects or horses, and while insects are generally credited with a good deal of mischief, really the horse has done the most of it. There is a great deal of this to be seen in Germantown and the surrounding districts.

We know some feel indignant and ask for a "law" against tying horses to trees. But who is going to execute the law? Ten chances to one the offender is some good natured but thoughtless friend of the family, and you would hardly prosecute him. The police can hardly do so, as it seems to be understood that, except in actual breaches of the peace, they can only arrest by warrant duly sworn out by the injured parties. Perhaps you see this, and so set up regular hitching posts before your door, but the "wise man is merciful to his beast," and so he ties his horse under the shade of a tree, though there are a score of other hitching-places conveniently near.

The security is not in laws or hitching-posts, but in proper guards about each tree. How to do this is so simple and easy a matter that it need not be printed out here. Surely it is only necessary to show the absurdity of spending much money and many years in having shade trees at our door, and then leaving them to the chance of utter destruction by the first horse that comes along, in order to set people to thinking that they had better do something to preserve the blessing they will certainly mourn for when gone.

Care of Orchards.

The complaint is quite common that orchards are not productive. Trees seem to be out of health, or for some other reason they are to an unprofitable extent barren. Now, the question is, what is to be done with such orchards to make them productive, and what to others that are now productive to keep them so? Much, of course, depends on the characteristics of the varieties planted. Some kinds are shy bearers in any and all soil, and no kind of treatment can make them prolific. Too often orchards are largely made up of these unproductive kinds. Unless the excellence in quality will justify keeping these light bearing varieties, it will be best to top-graft them with some prolific variety. Much also depends on the natural quality and condition of the soil.

Some soils are well adapted to the healthful growth of fruit trees, while others are not at all suited to their wants. With these last the first thing to be done is to renovate them by under-draining, subsoiling, manuring, etc., which should be done before the trees are planted. No fruit

tree should ever be planted in a soil that is inclined to be wet and soggy a considerable portion of the time. Trees will not thrive in a soil where their roots are immersed in water any great part of the time. Nor will they succeed in a very poor, thin soil. And here is probably the real source of a large part of the complaint about unfruitful orchards. Fruit trees are too frequently required to work without the raw material to work on—to make bricks—without straw—or in other words, produce fruit without the substance at hand from which to form the fruit. The amount of material required to form the tree growth and a crop of fruit on an acre of orchard is considerable. If 40 trees grow to an acre and produce on an average of but 6 bushels per tree, it will give 240 bushels per acre, which any one may see is far below what a good orchard should produce. This would remove 388 pounds of the mineral constituents of the soil, besides a large amount of the volatile elements. It is quite evident that this process, continued for a few years without a renewal of these elements by the application of fertilizers, must soon result in the exhaustion of the most fertile soil. But besides this, many farmers try to get an additional crop of grain, hay, roots, etc., and yet seem to forget that the soil can be exhausted. As well might one expect to draw continually on a bank account, without making any new deposits, and never exhaust or overdraw his deposits, as to think that such a process of depletion can go on for a great length of time without being followed by exhaustion. And right here lies the difficulty in a great majority of cases of unfruitful orchards. In order to restore the fruitfulness of such orchards, it is absolutely essential that the fertility of the soil should be restored. This restoring process should be brought about by the application of fertilizers in liberal abundance. It is possible, perhaps, to get the soil of an orchard too rich, causing too rank a growth and thus making trees tender, but the greater danger is in the other direction. No one need fear to keep the soil of his orchard rich, as rich as he would for raising vegetables in the garden.

A very excellent way to care for an orchard is to set it in clover or blue grass, and keep hogs or sheep enough in it to keep the crop eaten down. They will eat up nearly all worm-falls and keep insect enemies in check. Hogs, if permitted to root, will destroy many grubs, beetles, etc., besides loosening the soil around the roots, without cutting or breaking them as a plow will. Under this system the droppings of the animal will make a good fertilizer, besides which a good top-dressing of barnyard manure should be given once a year. When an orchard has lost its vigor and productivity it may often be restored by plowing under a good coat of manure. A good crop of buckwheat, rye or clover plowed under green will prove an excellent restorative to exhausted soils.—*Ohio Farmer*.

Small Fruit Notes.

It is strange the blackberry is not more extensively planted where it succeeds well. After a plantation is once started, it requires but very little care and attention. Nipping back the new growth while growing, and cleaning between the rows two or three times in the spring and early summer, is all that is necessary. They do better on light, porous soil, and should not be worked among late in the season, as it promotes late growth and tenderness of plant. They yield so abundantly and sell at such high rates, and can be harvested at such low rates, that they prove one of the most profitable crops grown where they do not winter-kill. On our farm at Palmyra we have some eight acres, and they have proved the most profitable to us of any fruit we have grown. The Lawton is the old stand-by with us, it is so productive and so large. In such States as Virginia, Maryland, Kentucky, Missouri, and in favorable localities North, where the peach thrives, the blackberry crop is exceedingly profitable, and black and red raspberries, too, if grown in the States named, for Northern markets, pay. Currants do not seem to succeed well south of a certain latitude, only in particular sections. We would advise none to plant largely of these before first looking around and inquiring if any person has tried them and succeeded. After all the hue and cry about new strawberries, we find nothing better than the old, tried sorts, and would not advise our readers to plant largely of the new, highly-praised kinds, until knowing that they have been generally tested. We know that this advice won't suit some who have new sorts to sell, but it is the interest of our readers generally that we

care to protect. There is no more delicious fruit for the table than red raspberries, and for the market none that sells more quickly, and yet so scarce. The reason for this is that there have been so many tender sorts sent out and tried, and failed, that growers have become shy of them. We have nothing on our fruit farm that we look forward to next season for larger profits than our seven or eight acres of red raspberries, judging by the way they yielded on newly-set and a few old plants the past year. Three or four hardy and productive sorts have now been found, and we believe we shall hear less about the unprofitableness of red raspberries hereafter.—*Fruit Recorder.*

Apple Culture in a Nut-Shell.

From an essay by Prof. Beal, of the Michigan Agricultural College, we clip the following:—

A young tree should be treated very much as you would treat a hill of corn. Hoed crops will answer in a young orchard; sowed crops will do much harm to young trees. I think it a good plan to keep young trees mulched, and I am not sure but it is the best of all ways to treat large or old trees as long as they live. Mulch prevents the rapid evaporation of moisture from the soil, keeps the surface mellow, prevents the soil from often freezing and thawing in winter, and becoming overheated in summer. Whether or not to cultivate trees which have become well established depends upon circumstances. I have never seen an apple orchard which I thought was injured by too frequent shallow culture, but this may be the case in some places, especially in warm climates or where the soil is deep and very rich. Whether to cultivate or not can be told by the looks of the trees. If the color of the leaves is good and the growth all right, and the trees bear well of fine fruit, they are doing well enough, even if in grass. But if the leaves are pale, the growth of the annual twigs much less than a root in length on trees set twelve years, and the fruit small and poor, something is the matter, and they are suffering for want of plow, harrow or cultivator, or a heavy mulch or coat of manure, or two or more of these combined. The upper twigs of trees set twelve years ought to grow six to twelve or more inches each year. To judge of the condition of an apple tree is much like judging of the condition of sheep in a pasture. Look at the sheep and not at the pasture. As long as the sheep are plump and fat they are all right.

Packing Apples so as to Keep.

To avoid the cause of such complaints in future, it would be well to bear a few hints in mind: First, good, clean barrels are necessary; old, damp, musty ones should never be used. Over the bottom of the barrel scatter a layer of buckwheat chaff, one inch deep; then put in a layer of apples, so that they will just touch each other, taking care not to crowd them too much; and if the apples of each layer are of uniform size, so much the better. Now spread a second layer of chaff, just enough to cover the apples, and work it down between them by pressing the hand over each stratum a few times. Continue this operation until your barrel is full, always pressing your apples down tight after you have inserted four or five layers. Apples picked, sorted and nicely packed in this way, will hardly ever rot; and should one do, the chaff will absorb all juices, and those lying next to it will not be injured. Those who have only a few trees, and these mostly bearing fall fruit, can keep their apples far into winter, if packed in this way; and winter apples, indeed, do not get fit to eat until about mid-winter. No chaff except buckwheat will do, as all others are apt to gather dampness and mould.—*Rural New Yorker.*

Budding Fruit Trees.

There are two well-established methods now in very general use among experts in fruit culture, for changing or multiplying varieties of the same class on the same tree, and both of these are simple and inexpensive. The first of these is known as grafting, and is only practised on larger trees, and always in the spring before the foliage is developed. The other method, which is much more rapid, and quite as sure when properly done, is budding, and the time for doing this extends from the middle of July until September. Whenever the bark separates easily from the wood, the buds may be set, with fair chances of success. The outfit for budding consists of some narrow strips of bass matting such as comes on the inside of coffee-bags, and a

pocket knife with a single blade, with a small piece of ivory fastened in the end of the handle. When the incision is made the ivory is used to raise the bark up on either side, so that the bud may be pressed into place. The buds to be inserted should be cut from young, healthy trees, and always of the present year's growth, those that are most matured being selected. The leaves may then be clipped off the branch of buds, leaving say half an inch of the leaf stalk attached to the bud. Then with a keen-edged knife cut off each bud separately from a half to three-quarters of an inch in length leaving a thin slice of wood back of the eye or bud. These should be kept moist, and protected from the sun or air until they set; exposure even for a short time may prove fatal. When the whole top or any part of it is to be budded over, select the place for each bud in a smooth part of the branch, not too large, say from one to two inches in diameter. On this part make an incision through the bark in the form of the capital letter T, and raise or separate the bark from the wood with the ivory on the handle of the knife. The bud may then be pressed into place, cutting off square the portion that goes above the cross incision. Then, with a strip of the base matting wrap firmly around the branch above and below the eye, fastening the end of the strip by a slip-knot. This completes the operation, which can be successfully done, even by a novice in less time than it takes to describe it.—*Ex.*

Two Valuable Trees.

The box alder is a tree well worth description. In the country west of the Alleghanies where this tree is common, it is called box alder, but some call it the ash-leaved maple. Of all the trees of the United States this species ventures further into the northern latitudes, for in the Atlantic States it is first seen on the banks of the Delaware, and even there it is rare. In the maritime part of the Southern States, also, it is far from being a common tree, which is less attributable to the heat of the summer than to the marshy nature of the soil on the borders of the rivers. West of the mountains, on the contrary, it is extremely multiplied, and, instead of being confined, as in the upper parts of Virginia and the Carolinas, to the riversides, it grows in the woods with the locust, wild cherry and coffee tree. But in the bottoms that skirt the rivers, where the soil is deep, fertile, constantly moist, and often inundated, this tree is most abundant and fully expanded. Even here it can only be considered a tree of secondary size. The largest box alders are not above 50 feet in height and twenty inches in diameter, and trees of these dimensions are only found in Tennessee and the back parts of Georgia, which lie far to the south. In Kentucky they are only half this height. Though growing in thick forests the box alder expands into a head like that of an apple tree. The box alder branches at a small height, and a disagreeable odor arises from the cellular integument. The proportion of the sap to the heart is large, except in very old-trees; in these the heart is variegated with rose colored and bluish veins. Some cabinet makers in the western country employ it to ornament furniture made of mahogany or wild cherry tree. The wood is of fine and close grain, and is said to split with difficulty, but it soon decays when exposed to the air.—*Western Farm Journal.*

The Flower Garden.

So far as we have seen, there has evidently been a mistake committed by our horticulturists in not having adopted for cultivation in their gardens some of the charming and profuse blooming hardy perennial herbaceous plants, now easily to be had, many of which claim the first rank in flower-garden decoration, and of these we shall for the present only name a very few. And first, as a useful plant for cut flowers, we mention the *Valeriana rubra* and var. *Alba*. These come into bloom in June, and never fail in producing their fine feathery flowers until sharp frosts set in. The next is *Delphinium sinensis*—both single and double—in many varieties, of an intense blue down through a mauve to a pure white, yielding flowers during the most of summer. Then we have the double varieties of *Spiraea aruncus*, *S. ulmaria* and *S. filipendula*, popularly known as "Meadow Sweet." As a double white flower continuing in bloom during the hottest of weather, is the *Achillea Ptarmica* fl. pleno; this to the florist is an invaluable plant, affording white flowers for wedding and funeral bouquets at a season when such flowers are scarce. To grow it well you must give it strong, rich land.

Growing Chestnuts from Seed.

Mr. J. S. Budd thus gives his experience to the *Western Rural*:—

In 1871 I grew about 3,000 trees from seed procured the previous fall, perfectly fresh in their burs. As soon as received, I hulled them and placed them in a common dry-goods box in my cellar, with alternate layers of moss, such as is used for packing plants for shipment, scattering the chestnuts on the moss so as not to come in contact with each other. The moss should be but slightly damp, and if the surface becomes very dry during the winter, it may be sprinkled, but the moss need not be disturbed until planting time in the spring, say the 10th or 15th of April. The nuts by this time have nicely sprouted. Long roots will be attached to the moss and adhering firmly to the fibres. These should be allowed to remain and be planted with them, and should the season be dry, the moss will be rather a benefit than otherwise, by retaining moisture about the root. From nuts treated in this way I grew more trees than I planted nuts, as some have double kernels and produce two trees.

I planted in drills, four inches apart in the drills, and sufficient space between them to use a small garden hoe, the whole occupying less than one square rod, affording a good profit at an average price of \$3 per hundred, when sold in the fall. I have trees eight years old, grown from seed in the above manner, that bore nuts at the age of five years, and at eight years produced a peck of hulled nuts.

The soil and situation in which to grow the chestnut is all-important. They flourish best on high, dry situations, or on rolling, well-drained, silicious soils, but are impatient of much wet, or low, tenacious localities.

Shading the Currant.

In our small garden of about an acre we have two rows of the common Red Dutch Currant, and while one row contains nothing but the currants, the other was planted some two years ago with the Red Antwerp Raspberry, for want of space elsewhere, and the soil being of a porous nature, a rich sandy loam, by frequent application of manure for vegetables the raspberries made a very strong growth, besides producing the present season a bountiful crop of fruit. As I desired to get all the plants I could for planting another year, the suckers were allowed to grow, so that the currant bushes were pretty well covered up by them. Now the result was more than double the amount of currants in the shade of raspberries than on the other row. The situation is a gentle southern slope, but a northern one is much better. The sun is a little too hot for the currant here, and the fruit is mostly found in the shaded part of the bush; therefore, as a protection, I would suggest planting the raspberry, and you will not only have more currants, but some raspberries too.—*J. H., Fairfax Co., Va.*

The English Bird Cherry.

Take it all in all, the *Prunus padus*, or English bird cherry, is one of the most desirable of our small or medium-sized ornamental trees. But to show to the best advantage the soil should be well drained, deep, and moderately rich, so as to induce a luxuriant growth and large, deep-green foliage. It looks best when branching from the ground, and the limbs, all of which assume a drooping character with age, are very numerous and especially attractive when covered with their long, pendant racemes of pure white, deliciously fragrant flowers. The odor of these is peculiar to themselves, and although exceedingly powerful, not oppressive, as is that from the tuberose and some other flowers. This tree grows rapidly for a few years after setting on the lawn, but if stunted in growth, the abundance of fruit it produces causes a scarcity of foliage and a starved look. It is readily increased by seeds, but to secure a supply the birds must be kept away, as they are especially fond of them, although bitter and astringent. This species, like most others of the family, throws up a few occasional suckers, and these may be transplanted with success.

The apple crop is likely to be a failure in Missouri this year. The caterpillars stripped the trees so thoroughly last June and July, that few of them had strength enough to blossom this year.

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. 3. Do not expect anonymous communications to be noticed. 4. Mark letters "Printer's Manuscript," leave open, and postage will be only 1c. per ½ ounce.

Provincial Exhibition—Future Prospects.

SIR,—As the season for agricultural exhibitions is approaching, I send you these few hints for the purpose of inducing our farmers to consider our present system of agricultural shows, and see what suggestions can be made for their improvement. Agriculturists of all classes are proverbially slow to adopt new ideas and averse to changes. But amid the rapid development and constant changes that are taking place in this Province, we should be constantly on the alert to watch the chances for improvement and adopt our policy to secure our share of the advantage.

The improvement of agricultural shows is a text that may keep all your subscribers thinking for some time; for myself I will only attempt to give you my ideas at present on the question. Is it advisable to continue the present perambulating system for the Provincial Show? I am aware that this question has often been discussed, and decided in my opinion slightly in favor of the present plan. When there was only one large Show in the Province, it was necessary to move, as there are comparatively few inclined to incur the trouble and expense of going a long distance to an exhibition; consequently the great bulk of the visitors and exhibitors have been from that section of the country where the show was held, and it was necessary to hold it in different places in order that all might share in its benefits. But within the last few years circumstances have entirely changed—that necessity no longer exists. The buildings provided for the Provincial have enabled the inhabitants of each section to hold Central Fairs, that have in a great measure taken the place formerly held by the Provincial, although, of course, they do not give an opportunity of comparing the products of the whole country.

What is needed to promote the general and uniform advancement of agriculture and the arts in all parts of the Province is a grand Central Exhibition as far in advance of the Central Fairs as the Provincial was formerly of the County Shows. And it is my firm conviction that the time is at hand when the Provincial must take that stride in advance, if they would maintain their old pre-eminence and continue their success. But such a Show must be permanently located; the expense of erecting buildings that would be required to accommodate such an exhibition would prevent the possibility of removing it from place to place.

No doubt the expense of holding an annual show of this description would be far beyond the means of the Agricultural and Arts Association. But I believe an annual Provincial Show is not necessary; a quadrennial Exhibition would answer every purpose. The Central Shows are all that is required for annual competition. Then every fourth year I would propose that all the Central Shows should be dropped, and all unite in one grand gathering at the Quadrennial Exhibition.

If this plan were adopted, the Association could, without any increase of the Government grant, certainly offer at least \$50,000 in prizes, and if permanent buildings were erected as they should be, they would be a credit and an ornament to the Province, instead of the miserable make-shifts that we have to put up with at present—buildings calculated to make the exhibitors as well as the stock comfortable during their stay at the Fair. Then the Exhibition could be kept open for at least a month, and Ontario would undoubtedly have both the profit and the praise of having the best Agricultural Show in America.

I know it will be said we are doing very well at present; why not keep on the same plan? I answer, in the first place, the plan I propose would be far superior in every way to the present; and,

secondly, it will be difficult, if not impossible, to continue the present system without a large addition to the Government grant to the Association, of which I see very little prospect. No doubt we shall have a very good Exhibition this fall and a large attendance, as the London, Huron and Bruce R. R. opens a fine tract of country that has not hitherto had communication with the Provincial by rail.

But although, as is likely, the Association will save a surplus this year in London, and next year in Toronto, the amount will certainly not be sufficient to cover the deficiency that is sure to occur when the eastern part of the Province claims the Provincial Show in 1879. Then some new arrangement will be a matter of necessity, and it would surely be wise to act while we have a choice, and prepare public opinion to move the Legislature to establish the Provincial Exhibition on a permanent basis suited to the requirements of the country and the spirit of the age.

There is an impression amongst many people that the Provincial Association is extravagantly managed. They say if they cannot get along with \$10,000 per year from the Government they ought to go down. The Western Fair is acknowledged to be one of the most successful of the Central Shows, and I will give you some figures comparing a few items of the expenditure of the Western Fair and Provincial for the past two years that will satisfactorily account for more than the \$10,000, and entirely refute the charge of extravagance as against the Provincial.

The total paid by the two societies for the last two years, 1875 and 1876, on the four following items, was as follows:

Provincial.	
For Prizes.....	\$30,846
Advertising and Printing.....	5,462
Veterinary College.....	4,034
Construction of Buildings.....	5,500
	\$45,842
Western Fair.	
For Prizes.....	\$15,704
Advertising and Printing.....	1,194
Veterinary College.....	
Construction of Buildings.....	1,498
	\$18,396
Total, Provincial Fair.....	\$45,842
“ Western Fair.....	18,396
	\$27,446

Showing that the Provincial has paid \$27,446 more than the Western Fair on these four items alone in the last two years. On the amount paid in prizes I need say nothing; the printing appears a large amount, but more than one-half of this was expended on the Herd Book, an absolute necessity to the country if we wish to improve our live stock; and when it is considered that we have to advertise in the papers and scatter the bills and prize lists broadcast from Ottawa to Sandwich, it might readily be supposed that a smaller amount would not suffice. As for the amount paid on account of the Veterinary College, it is just so much saved to the country, if the institution is to be supported at all, as the Government would have had to provide funds if the Association did not.

And the amount paid the local committees for the construction of buildings, although the funds came from the Association, is quite as much for the advantage of the local Fairs, as they use the same buildings for the three intermediate years.

After looking at these figures, showing that the Provincial has paid upward of \$13,500 a year more than has been paid by the Western Fair on these four items named, the wonder is not where the money goes, but how it is possible to make both ends meet. I am convinced that any one who takes the trouble to get posted on the subject, must be convinced that the Provincial Association at present is the most economically managed institution of the kind in the Province. H. A.

"H. A.'s" communication must awaken discussion. The management and future of our Exhibitions deserve attention. Perhaps "H. A." might give the total receipts and expenditures of the Exhibitions he speaks of.

The Guelph and Hamilton Exhibitions are unfortunately arranged to take place in the same week. Both follow the week after the Provincial.

SIR,—I stated in my last that I was engaged constructing an important drain 180 rods long. You can imagine my surprise when I found it changed by the compositor into what I suppose must be a cellar 18 x 20 yards. Such mistakes are annoying, but I am sure to none more than yourself.

THE SPRING CROP.

has been very much injured by a severe spell of hot weather, just when ripening, especially the wheat. All kinds are injured more or less, but the Red Chaff and Eldorado have suffered the most. I have seen some fields that are not worth cutting and threshing. Both these kinds appear to be easily rusted, and are therefore very unsafe to depend on for a crop. The Fife is generally pretty good. The Redfern and Red River varieties will be sowed again; they appear to stand well against the rust. My Redfern was very promising a few days before it was cut, but the heat dried it up too quick; there will be about 14 bushels per acre; the straw is excellent, it being cut quite green. Oats will yield perhaps the best of any spring crop. I took in two loads and threshed; they yielded 70 bushels, seven sheaves on an average yielding a bushel. The barley is much better than last year, still not so good as was expected a short time ago. From the remarks you have made about the

MODEL FARM

at different times, I should judge you have not much faith in it ever being worth to the country what it cost. In this I think you are right. I don't believe there is one in ten of the farmers in the country who believe in it. My idea of a Model Farm is one that should pay expenses, one that should prove to the farmers that agriculture is a paying business, if properly managed, and there are hundreds of such farms in the country. There are not as many experiments tried as there should be, yet those that are tried at the Model Farm are only a mere fraction of what are being tried in the country. There is one thing certain—whatever it takes from the farmers to carry it on, just so much it lessens their ability to properly manage their own farms. I hope you will watch this institution, and keep your readers posted as regards its real utility.

Last year I noticed a farmer taking great pains to subdue a

PIECE OF SWAMP LAND

by summer fallowing. I concluded to watch the process, and mark the results. He did the work very thoroughly by repeated plowing and harrowing, grubbing out stumps, &c., and then about the time of sowing fall wheat seeded it down with timothy grass. I passed this summer when it was being cut. The crop was splendid. This is what I call success. I have about ten acres of such land, that used to grow willows and tamarack; a good many years ago I cut the willows on part of the swamp, and thought the cattle would keep the sprouts down, and in that way I would get it into pasture. But the cattle would eat just the thing that I wanted to grow, and what I did not want they left; consequently, in a few years the willows were worse than ever. About four years ago I made another attempt to subdue them, cut them again over the whole swamp, and when the stumps sprouted, pulled the young sprouts off with my hands. They soon gave up, and now they are all dead. But this did not end the trouble. No sooner were the willows out of the way than up came a great variety of fast-growing weeds, thistles, mullens, &c., and occupied the ground so completely that it was almost impossible to get grass into it. It could not be fallowed for green stumps, so that there was no help but to take the scythe and hoe and cut with one or the other whatever we did not want to grow. It was discouraging, slow work, but I had counted the cost; the land was worth nothing as it was, and it would be worth \$100 per acre if in good pasture. Calculating in this way, the gain seemed so large that it stimulated to effort. I determined to master, and not have it said by the passer-by: "He began, but was not able to finish." Well, the result is, I have accomplished more than I expected, and have had the pleasure of hearing the remark several times this last year: "You have made a good job of that swamp." One man said he did not know of another field that would stand as much pasturing. A light, steel hoe, kept sharp as a knife with a file, was the principal tool, and grass seed was sown at different times of the year. When cutting weeds I sometimes carried a mixture of grass seed in my pocket, and threw a little into every place I thought it would catch; and by persisting in this way in cutting whatever I did

not want, and sowing what I did want, I have succeeded in making a wild into a valuable pasture; of course the land was drained of its surplus water.

There are so many similar pieces of land in the country lying useless, that I have been somewhat particular in my account of this, in order to encourage others to do likewise. I might say that a good tool to take out moderately young willows is a good steel spade (I used Ame's), ground sharp and whetted up like an axe; then strike below them, cutting the roots. Some draw them out with horses, but this cannot well be done where the roots are entangled with the roots of heavier timber.

Hop Culture.

SIR,—Please let me know through your valuable paper if you think hop raising would be profitable in the county of Wellington; or can you recommend to me any person as well posted on the subject? Also, what is the right time to plant, spring or fall? and where can the roots be bought?
C. L. H., Stratford.

[Hop culture is an exceedingly profitable and at the same time uncertain business. The hop growers have been much troubled for some seasons with a bug or worm which destroys the vines. The county of Wellington would no doubt be a good field for hop growing. The Messrs. Jardent of Saltfleet are probably the largest growers of hops in Canada. They employed about 500 persons picking them this season, which has been a very good one. Go and see them, or consult "Hop Culture," by H. C. Collins and others, for full information.—Ed.]

Egyptian Wheat.

BY JOHN H. GARNIER, M. D.

The human family is more indebted to the Linnæan order Triandrid for civilization than to any invention ever emanating from themselves. It was the cultivation of grains that gave them a settled home and brightened their minds. The pastoral tribes in their wandering life from station to station, seldom advanced beyond the amount of mental culture that has for thousands of years been possessed by the Nogay Tartars, or Bedouins of the desert, their hand against every man, and every man's hand against them. Egypt in the remotest ages was an agricultural country, and we hear of the patriarch Joseph storing grain for seven years. Is it not a remarkable circumstance that in some of the pots found entombed with the very oldest mummies, wheat was found, seemingly as fresh as the last harvest. We forget at the present moment the name of the person who sowed it, but think it was Sir Joseph Banks. It germinated, and a new and strange variety was obtained in which many heads rose in a tuft from one stalk, and it was considered a much finer variety than any in existence. The wheat seed from the mummy was computed to be over three thousand years old, and, as there is abundant reason to believe the age was nearly correct, the power of vitality in this grain must be enormous. How many thousands of plants exist whose seed will scarcely germinate if three years old? For some time after it was known that the original Egyptian wheat of the Nile could be obtained, it was eagerly sought by the farmers of England, Ireland and Scotland at very heavy prices, and, of course, thoroughly tested. We recollect seeing it over forty years ago in the vicinity of Belfast, and a few years later in the neighborhood of Edinburgh. It was considered to be very productive and gave crops that were quite remunerative, but still it had its disadvantages. One point we heard complained of was, that it was more easily laid by a heavy rain than other varieties, as the weight of the ear was greater, and that it raised afterwards with more difficulty. In a plate which lately appeared in the FARMERS' ADVOCATE, the head that was intended to represent Egyptian wheat was too meagre. I have counted myself from three to six large ears, and from three to nine smaller ones, on the same tuft. Egypt is a

country with a very calm climate, and rain is said very rarely to fall, and in such a climate this variety of wheat would come to its full perfection, and the yield would be enormous. The destruction of the crops by the plague of the hail-storm would thus be far greater than if the variety with one head had been sown. In the year 1855 we saw some very fine heads of this wheat grown by Mr. Robert Hoggs, late of Turnberry Township, and he had about a quarter of an acre. We saw it after a heavy rain, and the patch was in a most deplorable state, and the future culture of the variety was then abandoned. In the article to which I refer, it is stated that Mr. Howland says it produces as much first-class flour as any other wheat. I have no right to contradict the gentleman's statement, but I have grave doubts on the matter; in fact, I dispute it if the kind referred to be Egyptian wheat at all. It is a well known fact that occasionally two or three ears are found on one stalk of many sorts of grain. I saw a few days ago two full ears and a little one on barley, and I think, and with some reason, judging from the engraving, that the variety at present given to the market is merely a sport and not the true Egyptian at all. This wheat in the British Islands has long been rejected by farmers, justly, on account of its liability to be laid, and inability to rise again, and secondly, to the great quantity of bran and seconds that it gives. In Canada, however, owing to the more arid or dry atmosphere, it might give a larger quantity of good flour, but from my own knowledge I am able to state the facts concerning its culture and manufacture in the old country. I think I can safely say the Egyptians, Hebrews, Greeks and Romans were very poor judges of "flour," as every person knows they had not mills to grind it like ours, and that hand-grinding, such as the ancients practised, could only give them what is now termed "cracked wheat." Two stones turned by "two women at a mill," or two slaves, gives no assurance of them producing "Howland's Extra" or "Superfine." Far be it from me to discourage farmers from trying their luck with a few bushels of Egyptian wheat, but through your columns I will certainly warn them to pay no extravagant price, as, from the facts I have stated, it behooves them to be wary and not to be victimized by any enterprising young man from the other side of the lines. Yet the drier climate of Canada, the hotter summer sun, and the earlier harvest may be the means of this wheat equalling any other, but for flour the white wheats, I can safely say, will always be superior. However, if fancy prices be foolishly paid for seed, the farming community will only have themselves to blame, if victimized. If, again, this new sort be merely "a sport" from some of our modern wheats, it may turn out to be a valuable addition and a great boon to the agriculturists in "this Canada of ours." Almost any farmer, if he takes the trouble to search, may get occasionally a head of wheat that has two or more ears on the stalk, or that is much thickened by an extra row of grain at the base of the ear. This should be kept and sown in a corner of his garden, and he would soon find out if it were worth future culture. It is by the more acute that the finer heads are thus secured, and new varieties obtained, and yet we take it as a rule that one is as good as another, and, as the trouble is nothing, it might well pay anyone to try for once. If we stand still and take no advancing step in the great world of agriculture, either as leaders or followers, we will be like the Nogay Tartars or the Bedouins of the Sahara, whose civilization has ceased for thousands of years.

SIR,—I have a piece of low-land, about two acres, which is covered with water in the spring from the overflow of a lake. It has been seeded

down for five or six years and now requires plowing up. My idea is to plow it this fall, cross-plow next year when dry (probably about June), and then re-seed it with some grass that will stand the moisture. I think either Kentucky Blue or Red Top would do. Please advise me in your next issue.

A. J. WRIGHT.

Lakefield, Ont., Aug. 31st, 1877.

[Kentucky Blue, Red Top, Italian and Perennial Rye grass would be the most suitable mixture of grasses for your purpose. You were perfectly correct in sowing thick, in order to have a good pasture it is necessary to do so.—Ed.]

SIR,—I am requested by some of your subscribers to ask what will kill the grub that is eating up the cabbage. Seemingly a fly breeds them, and they grow in the heart of the cabbage ere it closes, and eat it up. It grows an inch long, and is a pale green caterpillar.

J. G., Bayfield.

[Put salt and pepper on the cabbage.—Ed.]

SIR,—I left about one stalk of buckwheat in every two yards in the rows of my potatoes, and have not seen a bug on the buckwheat, but plenty of them on the potatoes. I had buckwheat on the same field last year.

A. F., Sherbrooke.

Canada Thistles.

Three years ago this fall I broke up a five-acre field of sod, the top end of which (the part most easy of access) was infested with several large patches of Canada thistles, making in the aggregate perhaps one fourth of an acre. The following season the portion of the field where the thistles were was planted with potatoes and kept thoroughly clean until the crop was taken off—remainder of ground sown with oats. A year ago this spring the whole field was planted into apple grafts, the thistles showing themselves as thickly as ever in the original patches. After the second hoeing of the grafts, each of which had been followed by a thorough loose cultivating, I applied a heavy dressing of refuse lime and ashes from the lime-kiln over the portion of ground where the thistles were—this I did with the intention of trying its effects upon the growth of the young apples and without any idea whatever of its having any effect upon the prickly intruders in the crop.

The lime was applied immediately after a hoeing when the thistles were apparently as thick and as robust as ever.

This season, so far, not a thistle has made its appearance, at any rate a careful examination of the ground only revealed one solitary specimen. Was it that the pests were cut at the time said to be efficacious in their destruction, or was it the lime that did the business? I have other patches of thistles among trees which have been treated for three years exactly similar to those above mentioned, except in not having been lime-dressed, and they are there to-day as plentiful as ever. Can any of your readers give any similar testimony?

ALEX. PONTEY.

Westminster, Aug. 1st, 1877.

British Columbia.

SIR,—I have been passing through some portion of the country east of the Cascades, and will try to describe what it looks like. This portion of British Columbia differs greatly from the lower country in soil and climate, and has much the same of winter as with you. The surface of the country is mountainous, with here and there a small bench capable of cultivation, but owing to the almost total absence of rain in summer all crops require irrigation. When water can be brought upon the soil it produces crops of most splendid description. There is more or less alkali in all the mountain streams as well as in the soil, and the effect upon potatoes is astonishing. I have seen some as large potatoes as are found anywhere. The hills are covered with bunch grass and stunted pines, not thickly timbered like the lower country. The cattle are easily wintered, as the dry snow they have here does not hurt them much. With all these advantages the population increases very slowly, because the only market they have at present is slowly and steadily falling off. As the yield of gold in the Carribo mines is becoming smaller, and there are no new discoveries of importance to take its place, the prospects of the up-country farmers are not hopeful, unless the Government build the railroad. This country is full of minerals, and is more of a stock-raising and mining

than a farmers' country. There is comparatively no large extent of land which can be cultivated. There are no mosquitoes round here, and but few rattlesnakes. There are no poisonous snakes in the lower country. The farmers here thresh their grain by driving horses over it, and many of them do not milk any cattle until after harvest, as they have no fences, timber being very scarce in some parts. The kind of timber is mostly pine, cotton wood, and juniper. Cedar grows higher up and lower down the country. It is very hot here in summer. The lake is 23 miles long and one wide, and is about 1,000 feet above the level of the sea. The bunch grass plays out after being fed down by cattle, and sage brush takes its place. Cattle will eat sage brush sooner than starve. However, I will write again and shall, no doubt, be able to give you a fuller account.

VERITAS.

Kamloops Lake, B. C., July 25, 1877.

Prince Albert Settlement.

As our readers are aware, the North and South Saskatchewan run in a north-easterly direction for about 120 miles before they unite. The channels are almost parallel, and with an average distance of 20 to 25 miles apart. The land between the rivers appears to be all good, many parts fertile. Along the south side of the south branch the land also is good, and to the east of Prince Albert in the neighbourhood of Fort la Corne, north of the north branch, the land is fertile, but here there is a good deal of timber. The land around Sturgeon Lake is especially spoken of, and there appears to be good timber in the neighbourhood and abundance of good water. Between the river and along to the south the prairie is rolling. Grasshoppers were never known to settle between the rivers, and consequently the settlers at Prince Albert know nothing of the disappointments of the Manitoba farmer. Along the north branch, on the north side, there is abundance of timber, spruce, poplar, and juniper especially; the islands in the Saskatchewan are also covered with wood, and this constitutes the present source of the lumber for the settlement.

To return to Prince Albert: this settlement extends for about 30 miles along the Saskatchewan, the farms fronting on the river, and extending back two miles. The settlers are principally from Manitoba, but there are several also from Ontario and Britain. Quite a number of young men have taken up claims, and are improving them. The settlement has increased rapidly, especially within the last two years, and now numbers about 500 souls. A good deal of land has been broken up, and the people are beginning to farm more extensively. Last year 9,000 bushels of grain were threshed in the settlement. There was also a large root crop gathered. Wheat sells at \$2 per bushel; barley, \$1.50; oats, \$1.50; potatoes, \$1.25; and butter 37c. The Government half-breeds and H. B. Company readily purchase all that the people can spare, and the supply will not be equal to the demand for years. Several of the people commenced stock-raising on a large scale, and the facilities for this branch of industry are of no ordinary kind, inasmuch as there is abundance of hay and pasture.

The Grasshopper.

The *Ohio Farmer* says the Grasshopper Commission appointed by the U. S. Government has been successful in getting hold of some dollars "that might have been gobbled up by professional railway thieves and dirty party politicians. There is a crumb of satisfaction in knowing that \$25,000 of treasury money has been expended in the supposed interest of the farmer. In this way the grasshoppers have jumped the claims of the politicians if they have not squatted on the dominions of the farmer." But there is an additional crumb of satisfaction: While the scientist has been writing his prescriptions and figuring out his basis for predictions, the suffering farmers have gone to work and invented ways and processes by which depredations have been lessened and the force of future raids, if they occur, may be considerably broken. They have burned them, plowed them under, tarred them, hunted their eggs, and in various ways waged a relentless and successful warfare upon them. Besides, nature stepped in and lent, in the aid of parasites, unfavorable weather, climatic influences, &c., so that, except in scattered localities, the damage from them has been slight.

Poultry Yard.

Handling Fowls at Our Shows.

We noticed in the English papers lately many and serious complaints made regarding the rough handling of exhibition birds forwarded by their owners to the care of the managers and employes at sundry shows, where choice specimens have been so disfigured in their plumage as to be subsequently "disqualified" by the judges when the premium awards are being determined on.

Generally speaking, it is evident that this has unfortunately been occasioned through rude and careless management on the part of those who take the birds from the hampers or traveling-coops to place them in the show-room cages. But sometimes it is quite as clear the injury is purposely done, to the disgrace of the man who would thus attempt to destroy what might otherwise prove a successful competitor in a certain favorite class.

In this country we are not informed that this objectionable and unworthy trick is very frequently resorted to; yet we know of more than one instance where the ornamental feathers of fine fowls have, through some means, been torn out, crushed or broken, after leaving the ambitious exhibitor's hands and reaching the show-room in good condition.

A case in point occurred a year ago at a leading exhibition (and the occurrence is still fresh in the minds of some of our fanciers), where a fine Light Brahma cockerel, very nicely "pointed" and plumed, was in perfect shape when sent to the fair. After the first day the judges made their decisions, and this bird—deemed by his owner and all who saw him very nearly perfect—was passed upon and "disqualified" on account of having "a wry tail."

The man who bred him was astonished at this decision, and at once entered a written protest against this injustice or error. The judges re-examined the fowl, in company with the owner and another committee specially appointed for the purpose, and the original decision was adhered to. The cockerel was taken out, placed upon the floor, carefully scrutinized, and his beautiful clear black tail was a little one-sided.

Upon a final closer examination, the owner discovered—and exposed this dastardly trick to the committee on the spot—that five of this cock's long tail-feathers had been broken short off, close up to the skin, during the night previous, by somebody! It could not have been accidentally done, because the stout shafts were each squarely broken within half an inch of the cock's flesh. This bent half of the tail a little upon one side, and the fine bird was pronounced wry-tailed, and ignored in consequence.

Of course the owner do this mischief. But his fowl was fed; and every breeder in the hall who had the injury was satisfied why this prospect winner had been thus crippled.

The utmost care should be taken to avoid this sort of injury to fowls by all who have occasion to handle them. It is precious poor encouragement to amateurs who spend a whole year upon a choice trio or two of show-fowls, who got them at last into the exhibition-room in good shape, to be beaten after this fashion; though, to the credit of those who have charge of the thousands of specimens contributed to our shows in America be it said, this kind of injustice is not of frequent occurrence.

—*Poultry World*.

Soft and Misaid Eggs.

What will prevent hens from laying soft-shelled eggs, when they have access to plaster and lime? What can be done by me to prevent my hens from dropping eggs around on the ground wherever they happen to be; sometimes when within six or eight feet of their nests, and at night while on the roost? I would like to get a cure for gape-worms. My hens are fed shrunken wheat, cracked corn and oats mixed together, with a change to cooked meal every day. They are kept shut up through the day, but have a run in the grass every morning, and plenty of fresh water. The surface of the yard is covered with sand three inches deep. They lay every day, but two or three eggs are lost every day by being soft-shelled, or dropped from the roost. I notice it most in the Light Brahmas. I give them liver, onions and red pepper once a week. Is it anything in the food? They are well and healthy otherwise. What is the best food for laying hens?—E. K. M., Albany.

It is hard to say what the cause of your trouble

may be. If possible, feed buckwheat instead of corn, and give wheat middlings wet with boiling water and slightly salted, instead of the corn-meal. Bake oyster or clam shells half an hour, and keep some, well pounded up, where they can get them at any time. Give them liver or other refuse animal food oftener than once a week.—*Poultry World*.

The Indebtedness of the United States

"T. S." in the *Western Farm Journal*, in referring to the indebtedness of the United States, treats it as a farmer's question, as they have so much to do in the election of legislators, and it is they who have eventually to bear the burden of taxation. The indebtedness of the country he sums up as follows:—

National debt.....	\$1,220,000,000
States.....	375,000,000
Municipal.....	1,000,000,000
Railroad.....	2,300,000,000
Banks' Loans and Discounts.....	1,000,000,000
Insurance Co's Loans and Discounts.....	500,000,000
Total.....	\$7,395,000,000

A total of nearly seven and a half billions, not including that of private debts, book accounts, etc., and all this drawing a heavy interest. Now, compare the increase of taxation for the last quarter of a century: In 1850, with a population of 23,000,000 the U. S. tax per capita amounted to \$1.72. State, county, city and township \$1.82. In 1860, with a population of 31,000,000 the tax was \$1.91. State, county, city and township, \$2.99. In 1870, with 38,000,000, the tax was \$11.67 per head, whilst State, county, city and township was \$7.42, or an aggregate of \$18.91 per head for every man, woman and child in the nation. But at no period has taxation increased so rapidly as within the last seven years, so that at present we must be paying as high as \$25 per head. Let us now compare our taxation per capita with the monarchies of Europe.

	Population	Tax per Head
Great Britain.....	31,000,000	\$ 9 00
France.....	36,000,000	11 40
German Empire.....	41,000,000	9 34
Austria.....	36,000,000	7 22

To this have the vaunted advantages of the great Republic come!

Annual Fair List for 1877.

PROVINCE.	WHERE HELD.	DATE.
Ontario	London	Sept. 24 to 28
Quebec	Quebec	Sept. 17 to 21
Nova Scotia	Kentville	Oct. 1 to 5
Prince Edward Island	Georgetown	Sept. 27
LOCAL.		
Great Central Fair	Hamilton	Oct. 2 to 5
The Central	Guelph	Oct. 2 to 5
Central Fair	Kingston	Sept. 19, 20 and 21
The Central Fair	Ottawa	Sept. 11, 12 and 13
DAIRYMEN'S ASSOCIATION.		
Eastern Dairymen's Cheese Exhibition	Belleville	Oct. 3 and 4
Western Dairymen's Cheese Exhibition	Stratford	Sept. 18, 19 and 20
AMERICAN STATE FAIRS.		
Am. Institute,	New York City,	Sept. 12 to Nov. 12
Am. Pomological,	Baltimore, Md.,	Sept. 12 to 14
California,	Sacramento,	Sept. 17 to 22
Central Ohio,	Mechanicsburg,	Sept. 5 to 7
Central Ohio,	Orville,	Oct. 10 to 13
Chicago Exposition,	Chicago,	Aug. 29 to Oct. 13
Connecticut, (no fair).		
Fremont, Nebraska,	Fremont,	Oct. 3 to 5
Georgia,	Atlanta,	Oct. 15 to 29
Industrial Exposition,	Kansas City, Mo.,	Sept. 17 to 22
Indiana,	Indianapolis,	Sept. 24 to 29
Illinois,	Freeport,	Sept. 17 to 22
Iowa,	Cedar Rapids,	Sept. 17 to 21
Kansas, (no fair).		
Kansas City, Mo.,	Kansas City,	Sept. 17 to 22
Kentucky (north),	Florence,	Aug. 28 to 31
Maine Pomological Ex.,	Waterville,	Sept. 25 to 28
Maine Dairymen's Ex.,	Orono,	Sept. 18 to 29
Michigan,	Jackson,	Sept. 17 to 21
Minnesota,	Minneapolis,	Sept. 1 to 8
Missouri,	St. Louis,	Oct. 1 to 6
N. E. Indiana,	Waterloo,	Oct. 2 to 5
Nebraska,	Lincoln,	Sept. 24 to 28
Nevada,	Reno,	Oct. 15 to 20
New York,	Rochester,	Sept. 17 to —
New England,	Portland, Me.,	Sept. 3 to 7
New Jersey,	Waverly,	Sept. 17 to 22
North Carolina,	Raleigh,	Oct. 16 to —
Ohio,	Columbus,	Sept. 10 to 14
Oregon,	Salem,	Oct. 8 to 13
Pennsylvania,	Erie,	Sept. 24 to 28
Southern Ohio,	Dayton,	Sept. 24 to 28
Texas,	Austin,	Oct. 9 to 13
Virginia,	Richmond,	Oct. 20 to Nov. 2
Wisconsin,	Janesville,	Sept. 10 to 14

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—While being in company with a couple of boys I heard the elder one say to his young companion (who had been taught to treat every one with courtesy and respect) "What makes you always speak so affectedly and precisely? All the boys say you are just like some girl." We certainly would like to see more boys behave like girls, if good breeding and manners may be defined as that mode of behaviour. No, my dear nephews and nieces, politeness has no identity with foppery, pomp or affectation. These are its counterfeits. A well-bred person is always known by perfect ease in manner. It is incumbent on every one to be courteous in his intercourse with neighbors, or with the public generally. In good society the ladies are always treated with exceeding delicacy and deference; they are offered the best seat, or the only seat if there is no other; allowed to walk near the wall in the street, never jostled against in a crowded thoroughfare, and are always parted from with a respectful bow. In short, act a manly and inoffensive part in all the situations of life in which you may be placed; refined civility will spare both ourselves and others much unnecessary pain. UNCLE TOM.

PUZZLES.

116—TRANSPOSITION.

If you a range of mountains in America transpose,
A celebrated battle it will disclose.

117—RIDDLE.

I'm praised, I'm condemned, I'm abused,
My virtues the poets will sing;
Abroad and at home I am used
By the beggar, the sultan, the king.
THOMAS FRANSNAW.

118—Two I's, two D's and an M,
Two R's, an S and an N;
Also a T, a K and two E's,
An English town you will find with ease.
MYRA.

119—Four-tenths of me, I belong to a farmer;
six-tenths of me, I am driven into a wall; my
whole is a town in England.

120—A goddess; vegetables; an eastern magistrate;
a bird; a liquid (transposed); a spirit (cur-
tailed); a metal.

The initials and finals read down will name a
novel by an author of renown.

121—PUZZLE.

Can you the name of me devise?
My mouth is formed just like a bow,
A nose I have, and many eyes,
From whence my tears do often flow;
I seldom sleep in winter time,
Altho' the weather's ne'er so cold;
But when gay Flora's in her prime,
My tears you often may behold.

JAS. H. CROSS.

122—NEW ANAGRAM: A BIT OF ADVICE.

Erehw dna, nehwh dna, woh dna,
Kaeps uoy mohw ot, kaeps uoy mohw fo,
Erac htiw evresbo sgnih evif
Spils morf peek dluow spil ruoy uoy fi.

123—HISTORICAL ENIGMA.

After the capture of a certain town during the wars of the Crusades, a certain king of England worked like a common laborer to repair the fortifications of that certain town, and upon a certain duke of a country in Europe being asked to help, he replied: "As my father is neither mason nor carpenter, I am unacquainted with those trades," and he refused to help, whereupon the king of England threw the ducal flag into the ditch and kicked the duke out of his tent. Required—the king of England, the country of which the duke ruled as duke, and the name of the town. GEMINI.

124—A tall and slender shape I bear,
Nobody's skin so white or fair;
My life is short, and doth decay
So soon, it seldom lasts a day;

If in the evening brought to light,
I make my exit in the night.

JAS. H. CROSS.

125—DIAMOND PUZZLE.

A vowel; owing; jokes; landlady; a British colony; in front; bitter ingredients; a hole; a vowel. The centrals read down and across will name a British colony.

126—CHARADE.

My whole is a noun; change the first letter, it is a bird; beheaded, it will name a tool; then change the first letter, it will mean to force; change it again, it is what people do in the morning; change again, it is something to eat.

NORA.

What is the difference between a man who is asleep in bed and the one who tells falsehoods? One lies asleep and the other lies awake.

"What is the difference 'twixt a watch and a felder bed, Sam?"

"Dunno—gin it up."
"Bekaze de tickin' ob de watch is on de inside, and de tickin' ob de bed is on de outside."

The round of domestic life—A hoop skirt.

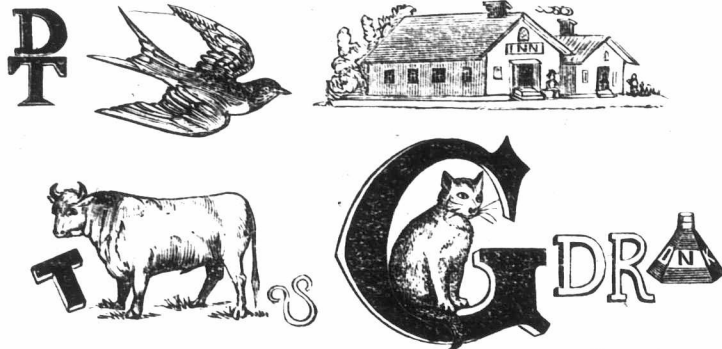
A natural color—The gray of the evening.

The fear that is life to us—The atmosphere.

Things that come home to us—Butcher's bills.

AS WELL.—A person passing through a certain town, and observing upon a door the name of "Haswell," remarked that it would be as well without the H.

127—ILLUSTRATED REBUS.



Tones.

A great deal of attention is being given to voice-culture both for purposes of singing and elocution. This is as it should be, for whatever increases the power of the lungs increases health and vitality, and there are few accomplishments that give more grace and enjoyment in social life than those of singing and reading well. But there is a certain culture of voice in which each person must be to a large extent his own instructor, though he may gain constant hints from close observation of the methods of speaking used by those around him. Every one is to a greater or less extent aware of the power for good or evil that resides in tone. There is the tone of authority, which ensures obedience; there are the querulous, the insinuating, the expostulatory, the supplicatory tones. There is the tone of happy childhood, clear, sweet, careless; the tone of neglected childhood, so moving, so pitiful. There is nothing when one is under a high state of mental excitement so difficult to control perfectly as the voice, and probably there is no one indicator of character so accurate and trustworthy as the voice. In the prevailing tones of the voice in conversation, a discriminating listener can readily detect the various qualities of mind any heart which go to make up the character of the speaker; and this is to a large extent true whether he speaks in a language intelligible to the hearer or in one unknown to him. Culture shows itself in the tones of the voice almost as exactly as in the language articulated, or in the expression of the face. Derision, indecision, dissimulation, habitual good-nature, merriment, melancholy, ill-temper—all leave their record as ineffaceably in the tones of the voice as they do on the lineaments of the face. The cultivation of one's voice thus resolves itself into the cultivation of one's character. Where the voice is habitually soft, clear, sweet, uniform, the character will be found to correspond with it. Where the voice is full of dissonance, harshness, coldness, negativeness, the character will be found to correspond with it. All of us have heard voices full of sympathy, of peace and

good will, and were these qualities in any instance found wanting in the owner of the voices? The vocal organs are exceedingly mobile and sensitive, or they could not so exactly reproduce in tone the condition of one's mind and form of one's character. Being thus mobile, they are capable of indefinite cultivation, in the richness, variety, depth and modulation of the tones they produce; but no amount of cultivation will impart to the voice those peculiar tones and qualities which indicate sweetness of temper, charitableness of disposition, or refinement of taste. These traits must be in the character, or they will not appear permanently and habitually in the voice. This kind of voice-culture does not receive nearly so much attention from parents and teachers as it merits. When the mother can repress in herself and in her children irritable, angry and impatient tones, she has done much to ensure harmony and peace within the domestic circle. "A soft answer turneth away wrath."

It is well as an exercise to imitate the tones, both pleasant and unpleasant, which one hears, and note the various position of the vocal organs in their production. It will be found that in an unforced and natural condition of the larynx the tones are easy and pleasant, and that any ill-temper or unhappiness constrains them in some way and vocalization is fatiguing to both speaker and hearer, although far often more so to the hearer than to the speaker. There are those whose voices bring gladness, light, cheer, wherever they penetrate, for they give assurance of balmy presence, genial sympathy, infectious merriment. Benefactors, indeed, are the owners of these voices, and their memories are precious to the hearts of all who listen to the melody of their utterances. May the race of such benefactors be multiplied indefinitely!

No Place.

A great many boys complain that there are no places. Perhaps it is hard to get just such a place as you like. But when you get a place—and there are places in this big country, we are sure, that need every boy and girl and man and woman in it—when you get a place we say, make yourself necessary to your employers; make yourself so necessary by your fidelity and good behavior, that they cannot do without you. Be willing to take a low price at first, no matter what the work is, if be honest work. Do it as well as you can. Begin at the very lowest round of the ladder and climb up. The great want everywhere is faithful, capable workers. They are never a drug in the market. Make yourself one of these, and there will always be a place for you and a good one too.

A simple way of telling solid silver from plated ware is as follows, and is often employed by burglars: Heat one end of the utensil, and if it is of solid silver it will be impossible to hold it in the hand; whereas, if it is plated ware, which is a bad conductor of heat, the end in the flame may be melted off without any discomfort to the holder.

Answers to August Puzzles.

106—"The curfew tolls the knell of parting day."—From Gray's *Elegy*. 107—Childhood. 108—"Not that I loved Caesar less, but that I loved Rome more." 109—One of ten when divided into the two which compose it, is 1:1 X 1-1. 110—Cowper, Scott, Spenser. 111—Skate, Perch, Sole, Salmon, Herring, Pike.

112.—If some young lady I could find
Who'd take me for her own,
To her I'd be a husband kind—
(My "wildcats" are all sown.)
But should she be possessed with cash,
Perhaps 't will be as well,
Because I wish to cut a dash,
And be a "tip top" swell.

113—Beef tea. 114—Ice cream. 115—Blake and Anson—thus, Bavaria, LemoN, Asparagus, Kangaroo, ELGIN.

Names of Those who have sent Correct Answers to Aug. Puzzles.

Amelia Stranbek, Wm. H. Coulson, Florence Knowles, Maude Tanson, Joan Bell, Pearl Nicholson, Mary Scott, H.W. Husband, Lavina Robertson, Franklin Parkinson, Minnie Hyde, P. G. Reyes, Wm. Broughton, Mrs. Mary Ann Hepworth, A. J. Taylor, Stephen Main, Henry Ptolemy, Frederic C. Baker, Harry Trevail, Thos. Johnston, William Weir, John West, Nina A. Langford, Fred. Hammon, Ida James, W. Husband, Black, Emily Summers, Eleanor Thompson, Frank Jones, Sarah Scott, Jane North, M. J. Iverton, Lizzie Simpson, Nora Hooper, Francis Olmarch, Miss Ball, John Jones, Eva Eastwood, Maude Franks, Jessie Thomas, Frank Kelly, Matilda Weld, Jane Dobson, Anna Neal.

HUMOROUS.

AGRICULTURAL ADVICE.—Punch advises farmers to sow their P's, keep their U's warm, hive their B's, shoot their J's, feed their N's, look after the pot 8 os' I's, and, we might add, they should C's every opportunity to improve, and then take their E's after the work is over.

Throw up the chin and out the chest,
Assume the form of the letter S;
Like a kangaroo your arms extend,
And then you'll have the "Grecian Bend."

"Why is it, my dear sir," said Waffles' landlady to him the other day, "that you newspaper men never get rich?" "I do not know," was the reply, except it is that dollars and sense do not always travel together."

"Well, Mr. Sniffles, have you posted the ledger?" asked an employer of a new clerk.

"Yes, sir," said Sniffles; "I've posted the ledger, but it was too big to go in the letter-box, so I had to take it inside."

Some men can never take a joke. There was an old doctor, who, when asked what was good for mosquitoes, wrote back: "How do you suppose I can tell unless I know what ails the mosquitoes?"

"You politicians are queer people," said an old business man to an impecunious partisan. "How so?" asked the politician. "Why, because you trouble yourself more about the payment of the debts of the State than you do about your own!"

"Oh, heavens, save my wife!" shouted a man whose wife had fallen overboard in the Hudson river, recently. They succeeded in rescuing her. And her husband tenderly embraced her saying, "My dear, if you'd been drowned, what should I have done? I ain't going to let you carry the pocketbook again."

Child: "Who paid the expenses of the Prince of Wales' journey?" Rich Colonist: "English Government, my dear pet." Child: "Oh! Then are you a prince, too, for pa says English Government paid your journey to Botany Bay when you came first?"

A NEGRO WIT.—There is a tradition that one of the old esquires in Malden, Massachusetts, had a slave who had been in his family until he was about seventy years of age. Perceiving there was not much more work left in the old man, the esquire took him one day, and made him a somewhat pompous address, to the following effect:—"You have been a faithful servant to me, and my father before me. I have long been thinking what I should do to reward you for your service. I give you your freedom! You are your own master; you are your own man." Upon this the old negro shook his grizzly head, and with a sly glance, showing that he saw through the master's intentions, quickly replied, "No, no, massa; you eat de meat, and now you must pick de bone!"

"AWFUL SACRIFICE" TRADESMEN.—One of these generous, disinterested, sacrificing gentlemen had stuck upon every other pane of glass, "Selling off—no reasonable offer refused—must close on Saturday." This man once offered himself as bail, or security, in some case which was brought before a Magistrate. The Magistrate asked him if he was worth £200; he said, "Yes." "But you are about to remove, are you not?" "No." "Why, you write up, 'Selling off.'" "Yes, every shopkeeper is selling off." "You say, 'No reasonable offer will be refused.'" "Why, I should be very unreasonable if I did refuse such offers." "But you say, 'Must close on Saturday.'" "To be sure; you would not have me open on Sunday, would you?" A curious scheme to entice, if not to entrap, the unwary.

"How much do yez ax for twinty three-cint stamps, I duuno?" inquired Barney Dromgoole at the Postoffice wicket. "Sixty cints," replied the crupier. "Don't yer make any redushon at all fur buyin' thim that way?" "No." "Say half a dollar now?" "I can't make any reduction." "I'll give yez fifty-five cints." "If you don't want to buy stamps at the regular price go away and make room for other people," said the official savagely. "Well, ye needn't get made over it," said Barney, as he handed over the money. "Sure, it's mighty shtiff an' struck-up-like thim Poshtoffice people are. Faix now, av some av the people as have money would shtart an opposition Poshtoffice, an' be more accomodat' in, they'd take the left of the business away from thim, so they would."

The Farmer Boy.

I'm a happy farmer boy,
I rise before the sun,
"The fields are ripe for harvest,"
And reaping must be done.

It isn't much a boy can do,
To help the grown-up men,
But father taught me how to drag
When I was only ten.

He says all honest people
Will scorn a *lazy scamp*,
And every one, in harvest time,
If he don't work, must tramp.

Mother says, a boy of twelve,
Who never tries to shirk,
Is better than a regiment,
About the kitchen work.

And now I ride the reaper,
And help to toss the hay,
I used to play at circus,
After Forepaugh went away.

But once I fell and hurt me,
And now I play at war,
Old Rover he's the Turks,
And I'm the Russian Czar.

Come out into the country,
And see us all some day,
And you shall see a farmer boy
Can work as well as play.

TEDDIE.



A person, in the course of some remarks in a prayer-meeting, having several times observed that he should never forget the dying words of his brother, the pastor suggested that it might be well for him to repeat them; whereupon, with some hesitation and scratching of his head, he said that they had slipped his mind.

A SIMILE.—The griefs of wedded love unreciprocated, and the griefs of divorce, remind us of the teeth, which pain us when they come and when they go.

About the Fly.

When a Congress street woman answered the door-bell yesterday, she found a stranger on the step. He had a bundle in his hand, a smile on his face, and he said:

"Madam, can't I sell you some fly-paper?"
"Does the paper fly?" she asked.
"No, ma'am; but it makes the flies fly."
"What do I want the flies to fly for?" she continued.

"Every fly, madam—" he was explaining, when she called out:
"I want you to fly! I can get along better with flies than with agents!"

"But I am not on the fly," he softly protested.

"Our dog is," she grimly replied, and so he was. He flew around the corner, the agent flew for the gate, the roll of fly-paper flew over the curb, and the newsboy climbed a tree-box to be out of the muck, and shouted:

"She flew, thou flyest, he fled, and I believe the dog got something with that coat-tail!"—*McGee's Illustrated Weekly.*

To Break Off Bad Habits.

Understand the reasons, and all the reasons, why the habit is injurious. Study the subject until there is no lingering doubt in your mind. Avoid the places, the persons, and the thoughts that lead to the temptation. Frequent the places, associate with the persons, indulge in the thoughts that lead away from temptation. Keep busy; idleness is the strength of bad habits. Do not give up the struggle when you have broken your resolution once, twice, thrice—a thousand times. That only shows how much need there is for you to strive. When you have broken your resolutions, just think the matter over and endeavor to understand why it is you failed, so that you may be on your guard against a recurrence of the same circumstances. Do not think it an easy thing that you have undertaken. It is a folly to expect to break off a habit in a day which has been gathering long years.

Trying to Live Without Work

The following, from the pen of Horace Greeley, is true and applicable to this day: "Our people are too widely inclined to shun the quiet ways of productive labor, and try to live and thrive in the crooked paths of speculation and needless traffic. We have deplorably few boys learning trades, with ten times too many anxious to 'get into business;' that is, to devise some scheme whereby they may live without work. Of the journeymen mechanics now at work in this city, we judge that two-thirds were born in Europe; and the disparity is steadily augmenting. One million families are trying to live by selling liquors, tobacco, candy, etc., in our cities, who could be spared therefrom without the slightest public detriment; and if these were transferred to the soil, and set to growing grain, meats, wools, etc., or employed in smelting the metals or weaving the fabrics for which we are still running into debt in Europe, our country would increase its wealth at least twice as fast as now, and there would be far less complaint of dull trade and hard times."

Floral Clocks.

We read that at the opening of each hour, by night and by day, somewhere, a band of "feathered quiristers" breaks into a happy song; from branch or roof-tree, skimming the waves, or stirring the stillness of forest depths, the sweet arousing strain awakens silvery echoes.

And so it is with flowers; each plant has its appointed season of awakening to a new day. And beautifully has one of our own poets given the story of this joyous greeting-time:—

"Ah! well I mind the calendar
(Faithful through a thousand years)
Of the painted race of flowers—
Exact to days, exact to hours,
Counted on the spacious dial
You 'broided zodiac girles,
I know the pretty almanac
Of the punctual coming back,
On their due days, of the birds."

Of the waking and sleeping hours of plants the great Linnaeus has given us a list:—

The morning glory opens at about two in the morning, closing at ten; Rutland beauty opens at three in the morning, closing at eleven; vegetable oyster opens at four in the morning, closing at twelve; poppy opens at five in the morning; bitter-sweet opens at six in the morning; water-lily opens at seven in the morning; scarlet pimpernel (the poor man's weather-glass) opens at eight in the morning; garden marigold (*Calendula arvensis*) opens at nine in the morning; sandwort (*Arenaria rubra*) opens at ten in the morning; star of Bethlehem (*Ornithogalum*) opens at eleven in the morning; passion-flower (*Passiflora caruba*) opens at twelve in the morning; feverfew opens at two in the afternoon; four-o'clock opens at four in the afternoon; chatchily opens at five in the afternoon; evening primrose opens at six in the afternoon; night-blooming corn-cockle opens at seven in the afternoon; night-blooming cercus opens at eight in the evening.

Young gardeners may find great pleasure in watching the unfoldings of their flowers, pets of their own planting, and will doubtless be able to add others to the lists already made out.

[We are compelled to lay over until next issue a very interesting letter from "Viator."]

Minnie May's Department.

MY DEAR NIECES,—A lady asks for a recipe for cooking beefsteak. It is a very important recipe, as the most of us can relish a good beefsteak, and the excellence of this as much depends on the cooking as the quality of the beef procured. In the first place, cut out the bone and trim off the superfluous fat, which would otherwise burn and smoke the meat. If the steak is a good one it is better not to pound it, as it causes a flow of waste juice, which ought to be preserved. Have the coals glowing and the gridiron hot. Lay the meat upon the bars and place over it a cover made for the purpose. Turn the steak every half minute until it is done. Have the platter hot, and when ready to take up scatter pepper and salt over it. Lay on the hot platter and put bits of butter over it, and send to the table immediately. Now this seems a very simple thing, and many of our readers will say "There is no need of telling us how to broil a beefsteak; we all know that well enough." Very true; but there are some who think the only way is to put the nice loin or porter-house steak in the frying-pan with a generous quantity of grease under it and let it simmer and steam until it is not fit for any one to eat. It is sometimes difficult to obtain good coals when the lighter kinds of wood are used. In such cases use the frying-pan, but never a bit of grease. Have a brisk fire and the pan hot when the steak is put in; turn often, and proceed as with the gridiron. **MINNIE MAY.**

Recipes.

CHICKEN FRICASSEE.

Clean and prepare the chicken, cut each leg and wing in two just at the joint, cut the back in two; the stomach makes one piece, and all, with the gizzard and neck, make thirteen pieces. Put a piece of butter the size of an egg in a stew-pan, and set it on a good fire; when melted, put the chicken in, and fry it well; it takes ten minutes; then take the pieces out, sprinkle a teaspoonful of flour in the pan, stirring the while, and immediately add half a teaspoonful of chopped parsley, two or three mushrooms cut in slices, salt and pepper; two or three minutes after add also two gills of water; then have a brisk fire and boil till reduced; subdue the fire, put the chicken back in the pan, simmer fifteen minutes, and dish the pieces in the following order: The neck and gizzard with the fore part of the back, and the low part of the legs in the middle; then one leg on each side of the dish, with one wing beside each; then the stomach and hind part of the back, and lastly the ends of the wings at the top. Pour the sauce over the whole, and serve. It takes about thirty-five minutes for the whole process, if the chicken is young and tender. **BLOT.**

TO DESTROY COCKROACHES, ANTS AND OTHER INSECTS.

Scatter borax persistently in their haunts, or use Persian insect powder, and they will leave. One or two applications will not suffice, but they must be continued till the last egg is hatched and the last insect destroyed.

PEACH MERINGUE (VERY FINE).

Put on to boil a scant quart of new milk, omitting half a teacupful, with which moisten two tablespoonfuls of corn starch; when the milk boils, add the corn starch and milk. Stir constantly, and when it commences to thicken, remove from the fire; add one tablespoonful of perfectly sweet butter, and allow the mixture to cool; then beat in the yolks of three eggs until the custard seems light and creamy; add half a teacupful of sand sugar. Cover the bottom of a well-buttered baking dish with two or three layers of ripe, juicy peaches, that have been pared, stoned and halved; sprinkle two tablespoonfuls of sugar over the fruit, pour over the custard gently, so that the fruit may not be displaced, and bake in a quick oven twenty minutes. Draw it out, and cover with the well-beaten whites of the three eggs. Sprinkle a small quantity of sand sugar over the top, that it may brown more evenly, and put in the oven until a light brown, which should be in five minutes. Eat warm, with sauce, or cold, with cream.

TO MAKE BLUEING.

One ounce best Prussian blue, pulverized; half an ounce oxalic acid, also pulverized; one quart of soft hot water; mix well. One or two tablespoonfuls are enough for a tub of water, according to the size of the wash. Money can be saved by making this blueing yourself. **MARIA.**

MAKING COTTAGE CHEESE.

Cottage cheese, when made as it should be, is a luxury that should and would be eaten and appreciated by all classes if they knew how wholesome and digestible it is. Those who have plenty of milk and make butter, have an abundance of sour or clabbered milk daily, clean and fresh, which is the article desired to make a cottage cheese. The true way to make this sort of cheese is to skim the sour milk and set a gallon or two of the milk on the stove in a milk pan, and let it gradually warm until it is luke-warm all through. Stir it occasionally to prevent its hardening at the bottom. When it is a little warmer than new milk, and the whey begins to show clear around the curd, pour it all into a coarse, thin bag; tie close and hang up to strain. Let it hang up two or three hours in a cool, shady place, then take from the bag and put the contents in a covered dish. When preparing the rest of a meal, mix with the curd rich, sweet cream, sugar and nutmeg. Some prefer salt and pepper, but the sugar will give it the place of fruits or acids. This preparation of milk will often be found most salutary and wholesome for dyspeptics, and weak, inflamed stomachs. Clabber is also very nutritious and easily digested.

GREEN CORN PUDDING.

Take six ears of corn, and with a sharp knife cut off the corn and chop it fine. To this add three pints of milk, three eggs, three dessert-spoonfuls of butter, and the same of sugar. Beat the sugar and eggs together, add the corn and milk, and bake until the top is nicely browned. The sugar may be omitted, and a handful of corn meal or bread crumbs be used instead, and the dish served as a vegetable and not as a dessert.

GRAHAM MUFFINS.

Two cupfuls of good buttermilk; one teaspoonful of thick sweet cream; one egg well beaten; two even teaspoonfuls of soda; one teaspoonful of salt; two cupfuls of Graham flour; one-half cupful of white flour or good shorts. Stir all together with a spoon; then heat your gem-pan or muffin-rings very hot in the oven; remove long enough to rub over each department with a bit of lard; then put one spoonful into each, and quickly return to the oven, which should be hot enough to bake at once, but not to burn.

TO PRESERVE CORN.

First boil the corn—it must be freshly gathered—and cut from the cob. Put a layer of salt in the jar, then one of corn about an inch in depth; another thick layer of salt, and then more corn, and so on until the jar is full. Put salt on the top an inch deep, cover all over with a good thick coat of soft lard, or melted mutton fat, not so hot as to run into the salt. Press white paper, cut to fit, on the warm fat, and paste over the top of the jar thin paper that has been dipped in the white of an egg. Keep in a cool place. It is better to use small jars—not glass. When wanted to use, soak over night. Canned corn is a tedious and uncertain process, and we prefer to buy what we need.

INK ON CARPETS.

A lady in this city communicates the following: One of my boys spilled a bottle of ink on a new carpet, recently. I looked over all the recipes I had but could find nothing on the subject. I then put salt on the stains, and squeezed the juice from a lemon on the salt, and then washed with sponge and water, drying with the sponge. It took out every vestige of stain without injury to the colors. This was done before the ink dried.

MEAT CROQUETS.

Take any cold waste meat, or beefsteak, cut off all gristle, &c., chop the remainder very fine, add twice as much mashed potatoes, one egg, a little butter, salt, pepper, and a small quantity of all-spice; work thoroughly together; make into small cakes and fry in hot lard.

PLAIN WHEAT PUDDING.

One quart of sweet milk, one pint of flour, five eggs, half a teaspoonful of salt. Wet the flour gradually with the milk, add the salt, then the eggs, beaten very light. Bake in a quick oven three-quarters of an hour. Eat with preserved fruit.

REMOVING STAINS FROM HANDS.

A little sulphur burned under any stains from berries, cherries or other acid fruits, will quickly remove them. A very convenient way, if the hands are stained, is to light a match and hold the stained hands in the fumes of the sulphur. This will be done more effectually if the stains are recent. If they have dried in, wet them with well water, or better still, water in which a little vinegar has been dropped. If you dip the hands in soapy water the alkali sets the stains so that vinegar has to be used to neutralize it. Well water is preferable to rain water, as the latter contains more ammonia, which is alkaline in its nature. Ladies will find that tan can be removed by bathing with vinegar, sour milk, or anything acid, and then placing the tanned parts in the fumes of burning sulphur. This latter article is one of the best bleachers known; but its uses for this purpose are not generally understood.

A BACHELOR'S PUDDING.

Ingredients.—4 oz. of grated bread, 4 oz. of currants, 4 oz. of apples, 2 oz. of sugar, 3 eggs, a few drops of essence of lemon, a little grated nutmeg.

Mode of making.—Pare, core, and mince the apples very finely, sufficient, when mixed, to make 4 oz.; add to these the currants, which should be well washed, the grated bread, and sugar; whisk the eggs; beat these up with the remaining ingredients; and, when all is thoroughly mixed, put the pudding into a buttered basin, tie it down with a cloth, and boil for three hours.

MRS. M. A. H.

A REMEDY FOR IVY POISON.

DEAR MINNIE MAY,—I noticed in the August number of the *Advocate* a remedy for ivy poison. Here is another, the efficacy of which I can vouch for, as some young men I was working with were cured by it, and many farmers might have it when they had not the lime:

Take common soft soap, and rub it on the part affected. **SUBSCRIBER.**

Arranging Cut Flowers.

An article in *St. Nicholas* on arrangement of flowers contains the following directions, which may be read by all who love flowers, and have not the knack of arranging them to the best advantage in bouquets and vases for the table:—

The color of the vase to be used is of importance. Gaudy reds and blues should never be chosen, for they conflict with the delicate hues of the flowers. Bronze or black vases, dark green, pure white, or silver, always produce a good effect, and so does a straw basket; while clear glass, which shows the graceful clasping of the stems, is perhaps prettiest of all.

The shape of the vase is also to be thought of. For the middle of a dinner table a round bowl is always appropriate, or a tall vase with a saucer-shaped base. Or, if the center of the table is otherwise occupied, a large conch shell, or shell-shaped dish, may be swung from the chandelier above, and with plenty of vines and feathering green, made to look very pretty. Delicate flowers, such as lilies of the valley and sweet peas, should be placed by themselves in slender, tapering glasses; violets should nestle their fragrant purple in some tiny cup, and pansies be set in groups, with no gayer flowers to contradict their soft velvet hues; and—this is a hint for summer—few things are prettier than balsam blossoms, or double variegated holly-hocks, massed on a flat plate, with a fringe of green to hide the edge. No leaves should be interspersed with these; the plate should look like a solid mosaic of splendid color.

Stiffness and crowding are two things to be specially avoided in arranging flowers. What can be uglier than the great tasteless bunches into which the ordinary florist ties his wares, or what more extravagant? A skillful person will untie one of these, and adding green leaves, make the same flowers into half a dozen bouquets, each more attractive than the original. Flowers should be grouped as they grow, with a cloud of light foliage in and about them to set off their forms and colors. Don't forget this.

It is better, as a general rule, not to put more than one or two sorts of flowers into the same vase. A great bush with roses, and carnations, and carnations, and feverfew, and geraniums, growing on it all at once, would be a frightful thing to behold; just so, a monstrous bouquet made up of all these flowers is meaningless and ugly. Certain

flowers, such as heliotrope, mignonette and myrtle, mix well with everything; but usually it is better to group flowers with their kind—roses in one glass, geraniums in another, and not try to make them agree in companies.

When you do mix flowers, be careful not to put colors that clash side by side. Scarlets and pinks spoil each other; so do blues and purples, and yellows and mauves. If your vase or dish is a very large one, to hold a great number of flowers, it is a good plan to divide it into thirds or quarters, making each division perfectly harmonious within itself, and then blend the whole with lines of green or white, and soft, neutral tints. Every group of mixed flowers requires one little touch of yellow to make it vivid; but this must be skillfully applied. It is good practice to experiment with this effect. For instance, arrange a group of maroon, scarlet and white geraniums with green leaves, and add a single blossom of gold-colored calceolaria; you will see at once that the whole bouquet seems to flash out and become more brilliant.

Be Neat.

Young ladies, if they only knew how disgusting to men slovenliness is, and how attractive are displays of neatness and taste, would array themselves in the simplicity and cleanliness of the lilies of the field; or, if able to indulge in costly attire, they would study the harmonious blending of colors which nature exhibits in all her works. A girl of good taste and habits of neatness can make a more fascinating toilet with a shilling calico dress, a few cheap ribbons and laces, and such ornaments as she can gather from the garden, than a vulgar, tawdry creature who is worth thousands, and has the jewelry and wardrobe of a princess.

LATE EMERALD.—Rev. E. P. Roe, of Cornwall, on the Hudson, N. Y., U. S., kindly forwarded some specimens of the above new variety of gooseberry. We regret very much that they reached us much decomposed, but should judge them a very large variety and of excellent flavor. They are highly spoken of—said to be very productive and free from mildew. Try the Late Emerald.

THE PROVINCIAL EXHIBITION.—The coming Provincial Exhibition of the Agricultural and Arts Association of Ontario, to be held at London in September, gives promise of being superior to any of its predecessors. The preparations for the Exhibition are being pushed rapidly forward. The greater portion of the horse stalls have been completed, and the cattle stalls, &c., are also nearly completed. Dr. Brown, of Eminence, Ky., the owner of the well-known Gold-dust stock, has intimated his intention of forwarding a number of thorough-breds, roadsters, saddle and carriage horses, as well as a few fillies, for competition at this year's Exhibition. Other United States breeders will, it is believed, forward horses for competition also. Every effort is being made to have all the arrangements as complete as possible. The entries, from all accounts, will be the most numerous ever received at any Exhibition in Canada.

THE LOCUST PLAGUE.—Messrs. Rand, McNally & Co., publishers, of Chicago, U. S., have our best thanks for a copy of "The Locust Plague in the United States." It is exceedingly readable, has many illustrations, and from the world-wide fame of its author, Prof. C. V. Riley, State Entomologist of Missouri, it is unnecessary to enumerate its great value and general merits. Price, in paper covers, only \$1.

FONTINE SAVINGS ASSOCIATION.—This association, whose advertisement appears in the usual column, offers to depositors many advantages over the usual loan and savings societies. Depositors participate in all the profits, which are divided periodically, and are over and above the 5 and 6 per cent. usually given; that is, one secures 5 or 6 per cent. at the division of profits gets a further share. The funds of the Association are invested in Trustees for the benefit of the depositor. Being on the improved mutual principle, the shareholders are the depositors, and all have an equal voice in the management. No director, trustee or official is entitled either directly or indirectly to a loan from the Association, but every member or depositor can obtain one upon furnishing satisfactory security. The Directors and Trustees are gentlemen of unimpeachable integrity, and we cordially recommend the claims of the Association to the attention and patronage of our readers.

DENNIS' POTATO DIGGER.—The attention of our readers is directed to the advertisement of Dennis' Potato Digger in the usual column. This implement won the highest Centennial medal at Philadelphia last year, is in practical use in numerous places in the Dominion, and gives excellent satisfaction. It has a double mould board attachment and is light, durable and well made.

FARM ENGINES.—E. Leonard & Sons offer an excellent farm engine at low prices. See advertisement, and examine their work at the Provincial Exhibition.

Patrons of Husbandry.

Sub. Granges.

609, Plainfield—Albert Jones, M., Cannifton; Jno. Hicks, S., Plainfield. 610, Wolford—Herman McCrear, M., Easton's Corners; Geo. Hutton, S., Easton's Corners.

Division Granges.

41, Prince Edward—Lewis T. Leavens, M., Bloomfield; D. S. Hubbs, S., Bloomfield.

Stock Notes.

The sale of the Prince of Wales' Shorthorns, Jersey cattle, and Southdowns, took place at Sandringham on the 14th ult. Thirty-eight Shorthorn cows and bulls realized £1,321, and twelve Jersey cattle were sold for £276. Forty-eight guineas was the highest price for a Shorthorn. The Southdowns consisted of one hundred and ninety ewes of different ages, and nineteen rams and ram lambs; these realized £959. The total receipts were £2,586.

The well-known Hereford herd of Mr. Wm. Tudge, of Adforton, Herefordshire, England, numbering 100 breeding cows and heifers, and 20 young bulls, is to be sold at auction without reserve, on the 19th of September. Commissions to purchase may be sent to the salesmen, Messrs. Rogers & Hamer, Bucknell, Salop, England.

The London Agricultural Gazette considers "the steady increase in the demand for, and therefore in the prices of pure-bred Jerseys, one of the most noteworthy of recent facts for cattle-breeders." Mr. George Fox, who was known in the United States a few years ago as one of the late A. T. Stewart's partners, has now retired from business, and is living at Elmhurst, near Litchfield, Staffordshire, England. He is engaged largely in breeding short-horned cattle on his estate, which is extensive and abounding in pasture lands. His first annual public sale of Shorthorn cattle took place July 11. It was a draft sale of 47 pure-bred beasts, and excited the most animated bidding. The "Second Cambridge Lady," one of the Rose of Sharon family, brought eleven hundred guineas. The entire sale yielded about thirty-five thousand dollars. The sale was preceded by a luncheon, at which the Duke of Manchester occupied the chair. The evening before the sale Mr. Fox entertained at dinner the Duke of Manchester, the Earl of Bective, Lord Moreton and twenty other guests in the beautiful old hall on his estate, which has a claim on history, having given shelter and protection to the Royalists during the siege of Lichfield.

A valuable lot of Shorthorn cattle were shipped to Liverpool last month. They were from the Hon. H. M. Cochrane's herd at Hillhurst, Canada, and include some splendid specimens of pedigree cattle, numbering 36 in all. They will be sold by auction early in September at Milbeckstock, Gowness, Windermere, by Mr. John Thornton, the well-known Shorthorn auctioneer. Last year a draft from the same farm was disposed of, and realized very high prices, an average of about £205 each, and it is expected that this consignment will meet with equal favor at the hands of English buyers, for it comprises many valuable beasts. Amongst these may be mentioned the Third and Fifth Duchesses of Hillhurst, the Second Duke of Hillhurst, own brother to the first Duke of Hillhurst by Lord Dunmore's Sixth Duke of Geneva, which has been for some time past in the possession of Col. Kingscote, M. P., the present Chairman of the Royal Agricultural Society. As some very choice young animals from one of the best known herds in Scotland—that of Mr. Simon Beattie will be disposed of at the same time, the sale will probably attract a large number of influential breeders, and no doubt the average price obtained by Mr. Cochrane's consignment will be equal to that of last year.

A copy of the *Shetland Times* of July 14th, states that Mr. Robert Rescor, of Markham, Canada, shipped from that Port on the 12th ult., by the steamer St. Clair, one hundred pure-bred Shetland ponies, "considered to be the best and handomest lot of ponies that ever left the Shetland Islands."

Messrs. B. B. Groom & Son, of Clark County, Ky., have sold to Hon. C. H. Andrews, of Youngstown, Ohio, the Shorthorn bull 5th Duke of Vinewood, for \$2,500, with the following cows and heifers: Red Rose, Cambridge Queen 4th, Duenna Duchess 9th, Louan of Vinewood, Louan of Clifton, Bright Eyes 9th, and 2d Duke's Gem. Also, Mr. Alexander Met Intock, of Bourbon, has purchased in New York and the Eastern States, 16 Jersey cows and heifers and 2 bulls, several of them from the herd of W. D. Dinmore, Staatsburgh, Duchess Co., New York.

VALUABLE SHEEP SOLD.—We notice that Mr. James Healy, of Grove Farm, Adelaide, recently shipped his Lincoln ram Victory to Mr. P. H. Vories, of Valley Farm, Carroll County, Ky.; price paid, \$100. Victory is one of the flock of successful prize-takers which Mr. Healy showed at the Centennial last year.

Ivan Waterspoon, Esq., Montreal, has sold the Ayrshire cow Albion (No. 231, N. A. A. R.) and her calf Eve, by Prince Royal III., to Judge Ramsay, of the Manor House, St. Huges, P. Q.; and the heifer Adeline Patti (No. 524, N. A. A. R.) to Andrew Allan, Esq., of Montreal.

Mr. Seth Heacock, Kettleby, Canada, has met with rather a serious loss this summer. His Bates bull, Fidget's Oxford 5th, bred by Hon. Ezra Cornell, Ithaca, N. Y., died on June 5th. He had been sick most of the winter with liver and lung disease. He was calved April 17th, 1873, and therefore only four years old—just in his prime.

Attention is directed to the advertisement this month by Messrs. John Snell's Sons, Edmonton, Canada, of their new importation of Greatswold sheep and Berkshire swine, selected in person in Great Britain by Mr. J. G. Snell. The stock landed in Quebec in perfect health, Aug. 6th, and after a quarantine of eight days, proceeded to their destination, which they reached in excellent condition and appearance.

Commercial.

London Market.

FARMERS' ADVOCATE OFFICE, London, Aug. 31.

All kinds of grain and market produce arriving freely; prices well maintained, with a good demand and a ready sale. The tendency of the markets is slightly upward.

GRAIN.—Deihl, new, \$1.90 to \$2.05; Treadwell, \$1.85 to \$2.00; Red Winter, \$1.75 to \$1.90; Spring Wheat, \$1.40 to \$1.80; Barley, 90c. to \$1; Peas, 90c. to \$1; Oats, 85c. to \$1; Corn, 90c. to \$1.10; Rye, \$1; Buckwheat, 80c. to \$1; Beans, \$1 to \$1.37.

FLOUR.—XXX, per 100, \$3.50 to \$3.75; Fall Wheat, do., \$3.25 to \$3.50; Spring Wheat, do., \$3 to 3.25.

FRUIT.—Apples, per bushel, 60c. to \$1.12.

PRODUCE.—Eggs, per dozen, 12c. to 14c.; Roll Butter, fresh, 18c. to 20c.; Tub Butter, 15c. to 18c.; Cheese, factory, 8c.; Hay, per ton, \$12 to \$13; Straw, per load, \$2 to \$4; Turnips, 25c.; Carrots, 25c. to 30c.; Potatoes, new, per bag, 50c.; Onions, per bushel, 75c. to 90c.; Tallow, 6c. to 7c.; Tallow, rough, 4c.; Lard, per lb., 10c. to 12c.; Wool, 30c. to 31c.

HIDES.—Hides, 6c. to 7c.; Sheep Skins, 30c. to 60c.; Lamb Skins, 50c. to 80c.; Calf Skins, green, per lb., 10c. to 11c.; Calf Skins, dry, per lb., 12c. to 13c.

LIVE STOCK.—Cattle, per 100 lbs., live weight, \$3 to \$4; Sheep, each, \$4 to \$5; Lambs, each, \$2 to \$3; Milch Cows, each, \$30 to \$40.

Toronto Market.

Toronto, Aug. 28.

The following are the street prices:—Barley, 60c. to 68c.; Wheat, Spring, \$1.08 to \$1.11; Red Winter, \$1 to \$1.05; Treadwell, \$1.10; Deihl, \$1.13 to \$1.14; Oats, 35c. to 36c.; Peas, 67c. to 70c.; Flour, Superfine, \$4.75; Spring Extra, \$5.25; Extra, \$6.50; Superior, \$6.75; Butter, 14c. to 15c.; Wool, 30c. to 31c.

Liverpool Markets.

Liverpool, Aug. 31.

Flour, 32s.; Wheat, Red, 12s.; Red Winter, 12s. 3d.; White, 12s. 4d.; Club, 13s.; Corn, new, 27s.; Peas, 37s. 6d.; Pork, 50s.; Lard, 44s.; Beef, 97s. 6d.; Bacon, 38s.; Tallow, 41s. 3d.; Cheese, 56s.

Chicago Markets.

Aug. 30.—Wheat active and firm; No. 1 Spring, \$1.10; No. 2 Spring, \$1.10 cash, \$1.00 to \$1.00 Aug., 90c. to 90c. Sept., 90c. to 97c. Oct.; No. 3 do., \$1.03; rejected, 87c. Corn fairly active; 42c. cash, 42c. to 42c. Sept., 42c. Oct.; rejected, 40c. Oats in good demand; 23c. cash and Sept., 23c. to 24c. Oct.; rejected 19c. Rye strong; 52c. Barley firmer; 65c. Pork firmer and unchanged. Lard fairly active; \$5.50 to \$5.32 cash and Sept., \$5.40 to \$5.42 Oct.

New York Market.

Aug. 30.—Wheat is to 2c. better; receipts 96,000 bushels; sales 200,000 bushels; at \$1.39 to \$1.39 for No. 2 winter red Aug. Rye steady. Corn a shade stronger; fair inquiry; receipts 370,000 bushels; sales 40,000 bushels; 54c. to 56c. Barley dull. Oats declining; receipts 110,000 bushels; sales 21,000 bushels; 23c. to 36c. for mixed western and State; 32c. to 42c. for white do. Pork firmer; \$12. Lard firm; \$8.75 to \$8.80. Butter 13c. to 25c.

Live Stock Markets.

Chicago, Aug. 25.—The *Drovers' Journal* this afternoon reports as follows:—Cattle—The market is active. Choice natives and Texans are 10c. to 15c. higher. Common are strong at \$2.25 to \$3. All good to choice stock was sold. Live Hogs—Sales of Philadelphia hogs at \$5.10 to \$5.20; medium to good at \$4.85 to \$5. Light are 5c. higher, or \$5.30 to \$5.35. Packers are quiet at \$4.50 to \$4.80. All sold.

Buffalo, Aug. 23.—The cattle market was dull and demand light. Sheep and Lambs The market was dull for Western sheep. Fair to good clipped sheep at \$4.25 to \$4.40, best at \$4.70 to \$4.85. Hogs The market was dull and slow. Good Yorkers at \$5.30 to \$5.40; heavy do. at \$5.40 to \$5.50.

Montreal Cattle Market.

Aug. 28. There was a pretty large supply of beef critters offered for sale at this market to-day. The sales were rather slow and prices are again declining, as butchers seem to have about enough of cattle bought for their present wants. There were about a dozen milch cows offered for sale; none of them could be considered first quality, and very few sales were made. There were about 200 light sheep and as many lambs offered for sale on this market to-day. The general price of lambs to-day was from \$2.50 to \$3 each. Several lots of good lambs were sold on the arrival of the market boats yesterday, at \$3 per head, and a few superior animals at \$3.25 each. There were about a score of old lean hogs and half a dozen young ones offered at this market to-day. The price at which the old hogs were sold was from \$7 to \$8.50; young pigs six weeks old sold at \$1.50 each.

The Cheese Market.

London, Aug. 31.—The cheese market was well attended, though the offerings on the board were only 978 boxes. Liverpool market was still at 56s, a figure which would allow buyers to pay about 10c. here for good cheese. Several factories had been bought at higher figures, as previously reported, in anticipation of a steady advance in the market, and present holders did not feel disposed to accept less, so no sales were effected.

Ingersoll, Aug. 31.—It is about time that factorymen learned that it would be to their profit to do business at the market on market days. Several factories, we learn, have sold at 10c. the past few days, whereas if they had waited till to-day would have realized 11c. to 11½c. for their goods. For the corresponding week last year 5,770 boxes were sold at from 7½c. to 10c., July, August, September and October make. The cable was 46s.

Norwich, Ont., Aug. 31.—The cheese market to-day was fairly represented by manufacturers, but buyers were scarce; 2,180 boxes were offered—100 of July make and the balance of August. No sales reported.

Little Falls, Sept. 3.—Nearly 100 factories represented at the Little Falls cheese market to-day, and over 9,000 boxes offered. The advance in rates last Monday was the cause of the large offering to-day. Sales at 11½c. to 12c., the average being 11½c. Farm dairy cheese brought 10c. to 11c.

Utica, N. Y., Sept. 3.—Of the 3,000 boxes of cheese offered, 1,000 went on commission, and 6,500 sold at 9c. to 12½c.; extremes, 12c. to 12½c.; leading factories, 11½c. average.

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- 4th.—Interest allowed at the rate of 6 per cent. on all payments made before coming due.

Applications can be made to any of the Society's Appraisers throughout Ontario, or to **W. F. BULLEN, Manager.**
London, August, 1877. di-1

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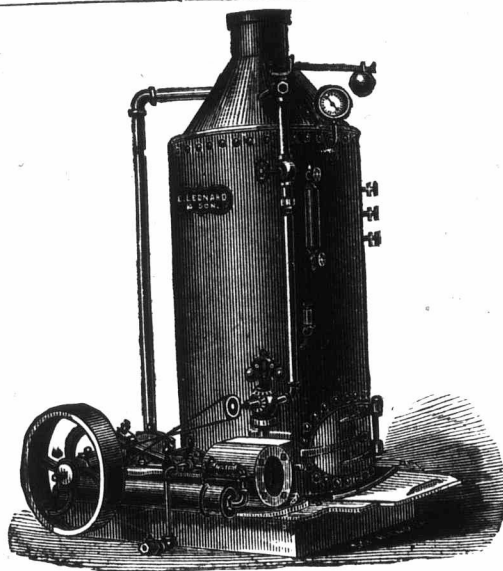
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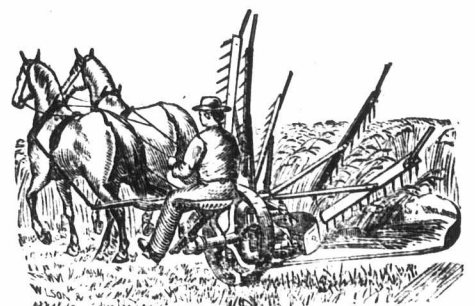
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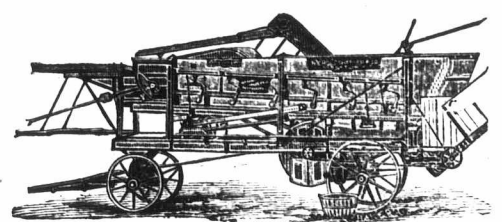
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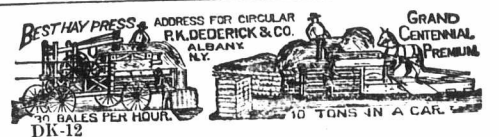


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