

Breeders of Leel

of Lincoln Sheep

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East Breeder of

O., Breeders of

and Breeder of

Gillivray, Brins-

SALE.

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11 MONTHS

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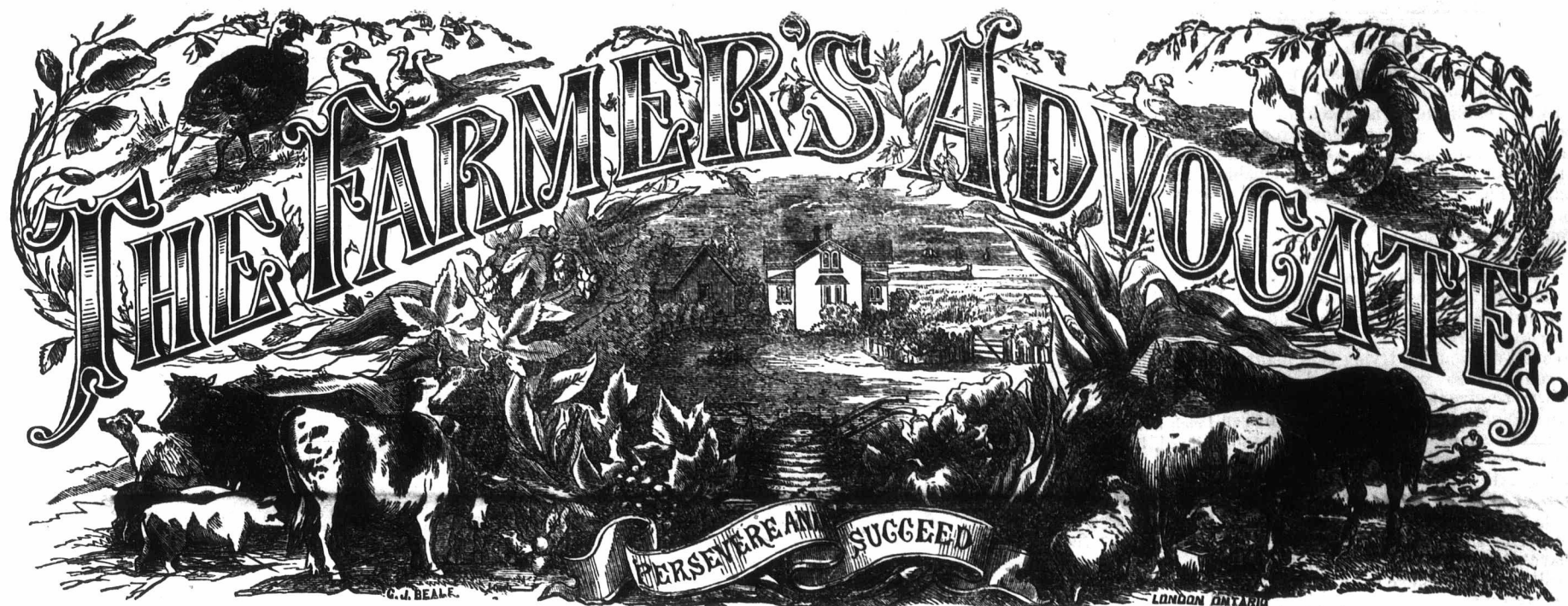
PH, ONT.—PRIZE

YARN.

and ORANGE. War-

BEAM WARPS for

St. John, N. B.



VOL. IX. { WILLIAM WELD, Editor & Proprietor. }

LONDON, ONT., AUGUST, 1874.

{ Per Annum, Postage Prepaid. } NO. 8

August on the Farm.

August has its own labor and care for the farmer, as well as pleasure. In a favorable season the hay and the greater part of the grain crop are safely stored before Lammas Day (as the first of this month was called in Anglo-Saxon phraseology), and the farmer can now pretty well estimate what grain he will have for market, and provender for his cattle during the season.

The oat crop still standing demands our attention, and we must take care to cut it in proper condition. Some of our readers may need to be reminded that allowing oats to stand too long uncut entails a great loss, independently of the danger of shedding. The grain loses its bright color, and it is not so valuable for miller or feeder, and consequently will not bring so high a price. A barrel of over-ripe oats will not produce so many pounds of meal, nor that of so good a quality as if cut before it is too ripe. The straw for fodder is also more valuable than if very ripe, when it has yielded nearly all its nutritive properties.

On the other hand, if cut too green the grain will shrivel, and the yield will consequently be less. Let the grain be well formed, neither milky nor hard, but more as dough, and properly cured, for it is a very profitable crop. There is a ready market, with good prices, for all the province has to spare, and for man and horse it is an excellent food. The straw, if well saved, will, with the addition of turnips, mangolds or kohlrabi, keep stock in good condition till pasture or soiling is fit for them.

Before threshing it is well to store up in the sheaf till seeding time the wheat or other grain intended for seed, if we intend to sow the grain raised on our own farm. It will be fresher and better for seed when so kept. The keeping over for seed grain threshed some months, and the crushing and injuring the kernel by the machine in threshing are among the causes of so many kernels perishing in the soil without germinating. Bear in mind, as you would have your farm produce grain and not weeds, to let your seed wheat be clean. To have it clean and pure will well repay any trouble it may cost you.

Look to the weeds. Let them not ripen and sow their seeds over farm and garden. Let not the weeds, wherever formed, lie where they may ripen to give you more labor in eradicating another crop.

Weeds seem to be on the increase throughout the country, and this increase solely caused by carelessness. Along the fences—by the roadside—th less frequented streets in our towns—every vacant spot is a nursery for weeds. Not

only is this the case, but in our fields and gardens we are too apt to allow weeds to grow and ripen their seeds. Let us wage an incessant war with weeds. They are the heaviest taxes we have to bear. The surest way is, having gathered the weeds in heaps, to burn them. We have rotted them by putting them in a heap and adding lime and sometimes salt, and nothing could be better for the purpose than urine, or not having it, any liquid manure.

Stock require to be well looked after. The pastures are pretty bare in August, after the heat and drought of July, and the springs are getting low. The farmer who has provided partial soiling to help out his failing pastures will now congratulate himself on his wise provision. It is well to have our stock keep up their condition at all seasons; it is easier than to restore it. If you have green food to cut for your cattle to eat in the sheds in the heat of the day, they will thrive better and add no little to your manure heap. And if you would have them healthy and have them first-class, see to it that they have good water. Drinking from filthy pools or infectious marshes is one cause of bad butter, and consequently a low price. Look to your fruit trees, and guard against your insect enemies.

The International Agricultural Exhibition at Bremen.

We would gladly transfer to our columns the report of this very important Exhibition, but space forbids, so we give only abridged extracts from our valued exchange, the Mark Lane Express. The divisions to which the committee limited the exhibitions were the following:

- 1. a—Breeding animals; b—Horses; c—Cattle; d—Sheep; e—Pigs; f—Goats and Rabbits. 2. Cattle for fattening—fatted cattle. 3. Poultry and Singing Birds. 4. Fishery. 5. Rearing of Bees and Culture of the Silk Worm. 6. Management of Forests and the Chase. 7. Agricultural Products and Botanical Manufacture. 8. Cultivation of Gardens, Fruit Trees and Vines. 9. Agricultural Machines and Implements. 10. Results of Scientific Studies in the above Departments.

Bremen is on the Weser, a free city of Germany, with a population of 75,000. The Exhibition was held in the Buzgen or Citizens' Park, comprising one hundred acres. The grounds are planted with trees, shrubs and flowering plants, and laid out in roads, grass and water. A siding has been laid from the railway, and the cattle, &c. are run quite up to the shedding. All the arrangements were admirable. The shedding for the cattle, sheep and pigs, and the stables for the

horses were substantially erected, and in some respects the plans are good. The entire covered width of the cattle sheds is from thirty-nine to forty feet, and there is a walk of nine feet down the centre.—All the sheddings are well constructed and perfectly water-proof.

The exhibition of horses was a grand one, and has rarely, we are told, been exceeded in Germany, and we doubt if it could be in any other country. The class comprised English thorough-bred stallions and mares, half-bred horses for hunting, riding and soldiers' purposes—there being classes for heavy and light cavalry—light and heavy carriage horses, and horses for agricultural and artillery work, hackneys and ponies. The general character of the horses exhibited was remarkably good.—There was frame, bone, and style, and the action of some of the horses was really grand to look at. They were generally beautiful animals and shown in fine condition.

There was a large entry of Holland and Oldenburgh cattle. There were classes for Hanoverian, Holstein and Hamburg, Schleswig and Danish Holstein, and white Swiss cattle.

The classes for British and foreign-bred pedigree Shorthorns were not very well filled. Mr. E. Tubbin, of Oldenburgh, who was a pupil some years ago of Mr. Oversman, of Norfolk, entered four bulls of different ages, and thirteen cows and heifers, and of a character, style and quality that would have been creditable to any Exhibition in England. He deservedly received the first prizes and gold medals, six second prizes and silver medals, and two third prizes and bronze medals.

Sheep.—The classes for Southdowns were well filled. Lord Walsingham was awarded two first prizes two gold medals, with two second prizes and two silver medals for rams, and two first prizes and two gold medals for shearing ewes.

There has been great improvement in Merino sheep on the continent of Europe, in increase of size and improvement of shape, while the quality of the wool is not deteriorated.

There was a good entry of pigs, and Messrs. Dorking, of Lincolnshire, and Tubbin pretty well swept off the prizes.

But we must pass over other departments, however important, to look at the seventh department—Agricultural Implements and Machines. The following prizes were awarded:

The first prize for the best steam plow and the first prize for the best steam machine for plowing waste lands to Messrs. John Fowler & Co., Leeds. Gold medals for agricultural machinery and implements to Messrs. James and Frederick Howard, of Bedford; Walter A. Wood, of Hoosick

Falls, New York; Marshall, Son & Co., of Gainsborough; Clayton and Shuttleworth, of Lincoln; Ransomes, Sims and Head, of Ipswich; and Messrs. D. M. Osborne & Co., of Bremen. Silver medals for the same objects were granted to the Maldon Ironworks Company; Rennie & Co., Lincoln; Richmond and Chandler, Salford; Aultmann, Miller & Co., Akron, Ohio; the Reading Ironworks; Alder & Nalder, Wantage; Gooday, Stanstead, Essex; Samuelson & Co., Banbury; Davy, Paxman & Co., Colchester; Woods, Cockledge & Co., Stowmarket; James Smith & Sons, Peasehill; C. Burrell, Thetford; Willsher & Co., London; Hornsby and Sons, Grantham; E. R. & F. Turner, Ipswich; and the Johnston Harvester Co., Brockport.

At this great International Exhibition England has fully maintained her high character not only in live stock, but also as a manufacturer of agricultural machines and implements.

Union is Strength.

Farmers, we have now established your ADVOCATE; it is now on as safe a foundation as any publication in America. The circulation is large and wide spread over the Dominion, and rapidly increasing. It now returns more money than it costs; a portion of these funds we propose to invest in the Agricultural Emporium stock. The charter is granted; you have had a copy of it, and can have another if required.

Having just returned from a short sojourn in England and France, we are more satisfied than ever that the institution will, if judiciously managed, be a most useful and profitable one. Additions may be made to suit the requirements of other branches.

What is now required is to select the best men we can for its management; the present officers are only pro tem. We hope to hear the names of leading gentlemen from different parts of the Dominion to aid and profit by the establishment.

The present committee purpose opening the stock book on the 15th of August and holding a meeting of stock holders in Toronto at the time of the Provincial Exhibition. We wish to be favored with the names of gentlemen who may be willing to join in its management. The additional plans and suggestions may be made known to stock holders in Toronto and other places.

The shares are \$20 each; \$5 per share may be sent on application or be paid at the time of the Provincial Exhibition in Toronto. No one is liable to pay anything beyond the amount of stock they subscribe for.

Trifolium.

While in France the most remarkable crop that we noticed differing from our own was Trifolium. The thick masses of bloom of a bright scarlet color drew our attention; on inquiry, we were informed of the name and use of this very valuable plant. The flowers are conical in shape; it is grown for early feed and for cut feed throughout the season. The cultivation appears to be about the same as for vetches here; it surpasses the vetch or the clover; it is sown in the autumn and cut or fed off in the fields the following spring and summer.

We felt desirous of trying this plant in our country, so we purchased a small quantity to give it a trial. The quantity of seed required per acre is about fifteen pounds. We can, on application, supply a few small lots to persons wishing to try a half acre. To our regular seed testers or those gentlemen we have seed reports from, or who have written for this paper, or to those that have got up a club or have sent us a new subscriber this year we will send a package as a present, on their paying the postage and the cost of a bag to put it in—say 10 cents.

We are informed that this plant is found to stand the weather well in France. In Kent and Sussex, where we spent most of our time while in England, we found it growing in several places. We hear that in the northern part of England and Scotland it is not much cultivated. We deem it right to give it a trial here; if it will stand our winters as well as it does in Kent and in France, we shall have a plant that our dairymen and our best farmers will require. One of its advantages is that it grows well on poor land.

The American Potato Beetle.

So well has this intrusive alien become known, that, it may seem, anything relative to its habits and the mode of combatting it most effectually entirely superfluous. However, so many means, all most effectual, are continually presented to potato growers, that a notice of the subject can not be unseasonable.

Though the bugs are not yet to be found unwelcome visitors entering our windows and doors, and infesting our walks and flower gardens, as last year, their hosts this year too are in every plot of potatoes innumerable, and when we think them entirely annihilated, another host is met with before twenty-four hours are past, as if they had fallen from the clouds or risen from the earth. Three years, the wise men told us, was the duration of their abode in one locality, but though the three years were expired, their numbers are not diminished.

REMEDIES TRIED AND RECOMMENDED.

Paris Green.—This is the remedy first recommended, and notwithstanding the adverse opinions of some, is an effectual remedy. A gentleman here tells the writer that after making trial of it last season for the purpose, he discontinued it, finding it quite useless. In like manner a correspondent of an agricultural paper writes that having tried Paris Green on two drills of potatoes, giving them a heavy dressing, he found only two bugs destroyed; "the rest appeared to relish the Paris Green and to thrive on it." But Paris Green is a sure antidote; whether mixed, one pound to thirty of plaster, or mixed in water and dredged or sprinkled. Either method has its advantage. Mixed with plaster a remedy is thereby applied for the injury done to the vines. Mixed with water it reaches more surely every place where the enemy may be nesting.

The only objection to it for the purpose is the danger attending the incautious handling of it. An instance of this we know. A person applying it in the usual way was poisoned badly by the poison coming into contact with a scratch on his hand.

Arsenic.—This is a favorite remedy with Professor Burrill; a tablespoonful to a bucket of water, sprinkled on the vines through a fine hole. The leaf, he says, appears to retain the poison without any change; as it does not seem to be assimilated by the plant, it in no way affects its growth.

Vermatoca.—In the annual report of the Commissioner of Agriculture, we find in the

article, "Insects Injurious to the Potato," mention of a mixture prepared at Strathroy which is claimed to be a very good remedy for the beetle. It is claimed that it has the advantages of being already prepared, and less dangerous than arsenic unmixed or Paris Green. Both Paris Green and Vermatoca we have used and found effectual remedies.

We have seen recommended as a remedy the liquid in which mandrakes have been boiled, and that in which garlic has been boiled. We do not believe that any extract from herbs, however powerful it may be, will be of any effect against the bugs. At one time the writer witnessed a party of bugs enjoying a feast that would have been their last if vegetable poison had any power over them. A large henbane plant had been broken in the middle, and on the broken stem was a company of bugs feasting on the rich but poisonous sap, not in the least injured, but enjoying the feast. —S.

Cheese and the Cheese Trade.

Written for the Farmer's Advocate.

By X. A. WILLARD, A. M., PRESIDENT OF N. Y. STATE DAIRYMEN'S ASSOCIATION AND BOARD OF TRADE.

At Little Falls, N. Y., on the 13th of July, the price of cheese had fallen to 11½c. and 11¼c. per pound for the best fancy grades. Persons in the trade, who are well informed, are of the opinion that farmers will drop down still further by the first of August. Whatever affects the price of cheese in New York must affect it in Canada, since both countries export their surplus to the same market, and the price for that surplus abroad governs the price on the whole American product, except in rare instances. The fact has become patent that so long as we have any considerable surplus, Liverpool and London make the prices for American cheese; for so long as dealers are sending cheese abroad at a given price, they can not in reason demand of the home trade more money for the same kind of goods. What the market would drop at the commencement of the hot weather was not unexpected by us. Warning came from our English correspondents that jobbers in England were trying to talk the market down several weeks ago, and in this they have evidently been successful; for we can account for the decline on no other good theory. With a drouth in England and a short crop of English cheese, with a full demand for the American product, and a rapid clearing of the goods soon after landing, there was no good reason that prices should go below those of last year, when we were making our excessive shipments.

It is not necessary to go into all the details concerning the causes which have brought about a weak and demoralized state of the market; it is sufficient to say that the leading cheese mongers in England are well acquainted with the necessities of American dairymen. They know that the hot weather cheese must go forward, that there is scarcely a factory in the United States that can hold over its hot weather cheese with any probability of its retaining its flavor, and that if the attempt were made, the loss on account of defective flavor would very likely be greater than that sustained by accepting hot weather rates, and so they are safe in getting the cheese at these rates. This, it seems to us, is the explanation of the present status of cheese and the cheese trade.

What, then, is the remedy? Are the American factories at the mercy of English jobbers, who can at any time during hot weather make a price for our goods below their value, compelling us to accept it or do worse? And will not this condition of the trade follow from time to time during the years that are to come, unless some means be devised to correct the evil under which we suffer?

The English dairymen at this date and on the first dropping of the market commenced to hold their goods back for bet-

ter prices; and they are able to carry their product over the hot weather without deterioration or loss of flavor, because they have ample store room, so constructed as to maintain a uniform temperature sufficiently low to secure it in good order. Such must ultimately be the course that will be pursued by the American factories, for there is no other way open to correct the existing evil and avoid losses in real values, which are forced upon us on account of culpable negligence and want of forethought.

The question of over-production in American cheese is not now urged as formerly, since, with those best informed, it is admitted that we are not over producing.—There is a good, healthy demand for all the cheese made in the United States and in Canada at fair remunerative prices, but it must be spread upon the markets of the world in proper proportions. If goods are forced forward at unreasonable times and in unreasonable quantities, they must be sold at a loss of values. Just so soon as we shall be bridged over the hot weather, and be in condition to hold stocks safely at the factory, prices will advance. This may be fairly predicted from the result of last year's shipments, when our exports were over one hundred millions of pounds. If our factories were in condition to hold our goods, so that only moderate shipments would go forward, we should at once get back to healthy prices. And it concerns Canada as well as the United States that some well devised movement be made in the reconstruction of factories, whereby the market slows weakness and demoralization. We believe in sending goods forward as fast as ready, so long as the prices are fairly within values, but we do not believe in forcing sales, unless compelled by absolute necessity. It is a law among good business men to provide against the future, to meet obligations promptly and not place themselves at the mercy of their creditors. All sound, healthy business is conducted on these principles, and they are applicable to the business of dairying. If the factories are so weak as to make no provision against the exigencies of hot weather, they must expect to see their goods go below values and at such rates as a strongly organized commercial interest may dictate.

We hope these words may be of some value to our Canadian friends, and that they may arrest the attention of those who have important interests in factories and factory cheese—in fine, that some plan be adopted for the better care and keeping of our hot weather goods. When this shall be done, we shall expect that they will be better marketed than under the present system.

FROM CHEESE FAIR.

The ninth cheese fair in connection with the Frome Agricultural Society was held on Wednesday in a large tent. About fifty tons of prime cheese, principally of this year's make, was pitched. No first-class dairies, however, were represented. Farmers at first asked higher prices than those recently current, and this checked sales for a time. The prices realized were about the same as last month, and by eleven o'clock nearly all the lots on hand had been disposed of, the attendance of dealers being very large. The following were the rates obtained: Cheddars, 70s. to 75s.; Somersets, 65s. to 72s.; doubles, 56s. to 66s. The fair took place in the field where the new market will be built.—Mark Lane Express.

—Soap suds may be used with great advantage for manuring grape vines. Downing says he has seen an Isabella grape vine produce 3,000 fine clusters of well ripened fruit in a season, by the liberal use of manure and soap suds from the weekly wash. The effect of soap suds on other articles is remarkable. A cypress vine that had remained stationary for a fortnight, when about two inches high immediately began growing after being watered with soap-suds and grew about six inches in five days.

The Horse.

HOW ENGLISH GROOMS CARE FOR HORSES. A correspondent of the New York Commercial Advertiser tells how some English grooms at Saratoga are teaching Yankees the care of horses:

To-day I asked one of these grooms, who had spent 20 years in the stables of royalty what he had to say about our American way of taking care of a horse.

"Why sir," said he, "you don't take good care of your horses; you think you do, but you don't."

"Why?" I asked. "Because, when a horse comes in all wet with perspiration, you let him stand in the stable and dry with all the dirt on. In England we take the horse as he comes from a drive and sprinkle blood-warm water all over him, from his head to his feet. Then we scrape him down and blanket him, rubbing his legs and face dry. Thus in an hour he is clean and dry, and ready to take a good feed, while with your way he will stand and swelter for hours, and finally dry, sticky and dirty. Our horses never founder and never take cold. We never use a curry comb. You scratch your horses too hard. The only care necessary is to have the water not too cold; then bathe them quick, and blanket them instantly, while you are rubbing their legs."

BARLEY FOR HORSES.

Barley has, since the failure of the oat crop, gained in reputation as a good and substantial food for the horse, and many farmers are now growing it for this purpose. It must be confessed that barley contains, in a high degree, the principles for forming fat and flesh. It largely abounds in albumen, gluten, sugar, gum and phosphate of lime, or in other words, barley contains sixty-five per cent. of nutritive matter, while oats, weighing forty pounds to the bushel, contain only about twenty-four pounds of nutritive material. Inferior barley in some parts of this country is fed to horses instead of oats, and with the best effects. In this connection, it would be well for horsemen to remember that two parts of barley are worth more than three of good oats.

In Great Britain, it is often boiled and fed in the evening, fattening the horse and giving a glossy coat of hair, and having an excellent effect in all respects.—Cor. Journal for the Farm.

ADVANCE IN HORSES.

A contemporary says:—"We recollect very well that when railroads were first being built in the interior of New England, farmers thought that horse racing would no longer be profitable, and many breeders of our acquaintance acted on this belief, and either raised no colt at all or much less than they had formerly done. Everybody knows that these fears were not realized. Horses have been in greater demand, and prices have been much higher since the completion of railroads than before. The same appears to have been the case in England, as it is stated that the London General Omnibus Co. has purchased 22,026 horses in the last 12 years. From 1861 to 1870 the average price was about \$120 each. In 1871 the average price was \$140, and in 1872 nearly \$165.—Until 1870 the needed supplies were easily obtained in England and Scotland. For 18 months past nearly all the horses bought have been purchased in France.

DISEASE IN CLOVER.

The latest plant attacked with disease is clover. It sickens where it was formerly robust, or dies off in being cut at the crown, while the top root remains healthy. This latter disease has been developed at the Grignon Agricultural College. The clover fades, blackens, not in patches so much as by numerous isolated plants, and curiously, most remarkably on the soil where wheat and potatoes had previously been cultivated. It is at the neck of the plant a little above the surface of the soil, that the malady appears, resembling in the mark as if it had been gnawed with a wire-worm, but produced by a parasite mushroom, which as it grows alters the cells and their contents. When a dead plant is placed in a moist position for a day or a night, it becomes covered with down—the same fungi that attacked it when living, and which is believed to be identical with that found on the leaves of a diseased potato plant.



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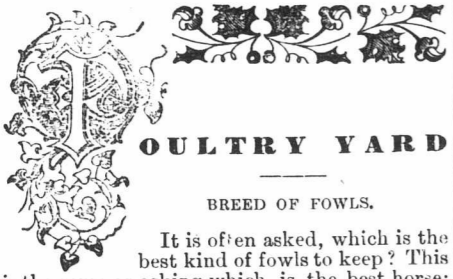
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POULTRY YARD

BREED OF FOWLS.

It is often asked, which is the best kind of fowls to keep? This is the same as asking which is the best horse; if you want a horse to run for the Derby, you would not choose a cart horse, and if you want a dray horse you would not take a fine bred blood. The same with fowls; if you want egg producers you want one kind, and if you want flesh and good hatchers you want another.

About common fowls or mongrels, this is just the difference between them and pure bred the one has a distinguishing property, while the other has not. It is impossible to combine the proficiency of the egg producers, and retain it, with the feeding and hatching properties of the other. For the food that is converted into producing eggs will not certainly produce fat and flesh, and conversely, the elements of nutrition which go to building up the body cannot be converted into supplying eggs. The properties and qualities of thoroughbred fowls have been attained by the same attention to breeding that has brought other stock to perfection by observing the qualities most developed in the animal.

The following may be beneficial to those not acquainted with the prominent points of some of our pure breeds:

In the egg producing class, the Leghorns stand pre-eminently above all others. This variety consists of the white and brown. The whites appear to be the favorites, being hardy, easily raised and mature quickly, the pullets often laying at four months. Pullets of this breed have been known to lay 240 eggs during the year. Their large comb and pendants require a warm house during our rigorous Canadian winters.

The next in high favor is the Black Spanish; these, like the former, are non-setters and prolific, but not so easily raised. They do not, until nearly grown, get their full feathers, being generally half naked for a considerable time after hatching. These, like the Leghorns, require comfortable winter quarters, owing to their large comb and wattles freezing and then mortifying. The Houdans, a French breed, come next as non-setters. This is what they call a *made* breed between the Poland and Dorking—showing the characteristic crest of the former and the fifth toe of the latter. Although not as continual layers as the two varieties mentioned, yet they possess points superior to the others in size, delicacy of flesh and hardiness, but very liable to disease. The small breeds—the different varieties of Hamburgs and Polands—have their admirers as fancy fowls. They are excellent layers, partially non-setters, but are not recommendable owing to their size, as likely to improve our present stock of common fowls.

The Dorkings.—This class may be considered the standard English fowls, and combine more general qualities than any other; regular setters. Large size, plump, square built, delicate flesh and highly flavored. They lay a good supply of eggs, and probably the best table fowl raised. They likewise have large combs and pendants, like the Leghorns and Spanish. They do not thrive well on damp soil.

The Asiatics are the most extensively bred and most fashionable class at present raised in America, and on the whole are probably better adapted to the rigorous winter of Canada and the Northern States than any other, being well supplied with an abundance of feathers down to the toes, having small combs and wattles, no danger thus arising from these parts being frozen.

This large class is divided into two families, the Cochins and Brahmans.

ON BREEDING DARK BRAHMANS.

An English fancier who writes in the *London Bazaar*, says:

I keep dark Brahmans for pleasure more than profit, and would again repeat that to breed them for exhibition you require to know how to mate them properly, which can only be learnt by practical experience and close observation. There is no rule whatever that an exhibitor shall breed the birds he shows, for anyone that chooses to spend his money can buy the first prize birds at a show and win prizes with them, though in many instances they are worthless as breeding stock. It is well known that some of our best Brahma breeders very seldom show birds at all. 'Fanciers of Brahmans' need not buy prize birds to breed from; in fact, I never use a heavy cock bird for the purpose; it is not required. A moderately small bird is to be preferred. The cock should have a small head, with pea or triple comb, which should be close and firm set on the head, slightly rising at the back; hackle very full, flowing well over the shoulders; the black stripes at base of hackle should be very black

and broad, not mottled; there should be plenty of black on the front of back, under the hackle, the saddle broad and rising, and well striped with black; the tail coverts very broad and glossy; the wing should have only a little brown in it, and this should be near the top; the wing bar and tail coverts should be green, with bluish or purplish shade; the tail black, no white on it; the breast black and glossy, slightly spotted with white, and deep, full and broad; the fluff feathers slightly edged with white, the centre of the feathers solid black; shanks stout, wide apart, and well feathered; the middle toe also feathered. Black and white shank feathering I prefer. The black should be intense, and the white distinct, not mottled.

The hen should be deep, broad, rather long in the back, and large, with broad and rising saddle, well pencilled on the breast and up the throat, and of the same color as the cushion; in fact, of an even color all over the bird. The head cannot be too small, with small neat comb. The head of the cock should be white; that of the hen should be striped with neat, small stripes, increasing to the base of the hackle, where the stripes should be very broad and black; the wing well clipped up and buried in the cushion above and the fluff below; the legs short, wide apart, and well feathered to the toes, the feathers pencilled distinctly; in case the hen has little leg feathering, then the cock must be heavily feathered, almost vulture-hocked.

ABOUT RAISING DUCKS.

It is generally supposed that, to raise ducks successfully, it is necessary to have a pond or running water in which the ducklings may swim. Nothing could be more fallacious. It is true that old ducks find, at certain seasons, a large amount of food in shallow ponds, but the young are altogether better without water in which to swim. Indeed, it is better that they do not have water for this purpose until they are fledged with the true feathers, but it is necessary that they have abundance of water to drink, for they are, at best, thirsty birds; this may be supplied in any shallow vessel, kept constantly supplied; and they require absolutely dry and warm quarters at night.

There are no birds kept about the farm more agile in destroying insects and larvae, nor more indefatigable in hunting them, than young ducks, and from their apparently unlimited powers of digestion, they are far better placed among vines and other plants infested by insects than young chicks. Thus they will readily supply themselves with all the animal food they require, at no cost to the owner, and saving a large amount of trouble in this direction.

When first hatched they require some care for the first few days. The best food, undoubtedly, is oatmeal, boiled and mixed with the yolks of hard-boiled eggs, but corn meal and eggs is an excellent substitute. Give also, at the expiration of a week, if kept close, plenty of green food, as cabbage, lettuce, etc., chopped with the other food. After they begin to be well-fledged they should be kept out of the garden, since they are apt to destroy more than their keeping, in waddling over and through the plants.

Once tried, in the garden as insect exterminators, they will ever after be appreciated, and in the autumn and early winter they will be fully as much liked occasionally as a principal dish at dinner.

GOUT OR RHEUMATISM IN FOWLS.

These two names are applied indifferently to an inflammation of the feet or the joints of the legs. The affected parts will be reddened and swollen, and the bird will probably show signs of pain. The disease is probably caused by some fault in the digestive apparatus, but the trouble may be increased by exposing the fowl to cold and wet. There are several forms of these diseases besides the one described. In one the only symptom may be a slight lameness, or with this the joints may be stiff, and the toes bent up or twisted to one side. The trouble called 'cramp' is, perhaps, of a partly different nature, but this is not certain.

When the inflammation is very great, the bowels should be well opened with jalap or calomel. Twice a day may be given a pill containing half a grain of extract of colchicum. The bicarbonate of potash might prove a valuable remedy. Opium may also be administered in the same doses, or more, if necessary to soothe the pain. The local treatment consists in washing the affected parts in warm water in which is dissolved potash; or, in case there is only a stiffness and no great amount of inflammation, some mustard may be added to the water. Oil of mustard is said to be of use internally, in this last case. Sweet oil also has a favorable influence in cases where there is much inflammation. The fowls should be removed to a warm, dry place, and be well fed. *Poultry Record.*

CAPE WORM AND ITS REMEDY.

Prof. Riley, State Entomologist of Missouri, furnishes the following to the *New York Tribune* on this parasite:

The nature of the animal that produces 'grapes' is well understood by zoologists. This parasite is a worm (*Syngamus trachealis*, Sieb.), and not the larva of the true insect. Closely allied species are found in many other animals, as in the intestines of horses, asses and mules, the fat of hogs, etc. That one under consideration lives in the windpipe and bronchial tubes, not alone of chickens, but of turkeys, pheasants, partridges, ducks, woodpeckers, crows and many other birds. The males and females—the latter being much the largest—are almost invariably found united firmly together, the integument of the male soon becoming organically united to that of the female, so that the copulation is permanent or for life.

The eggs are very minute and oval. The embryo develops while the eggs are still in the oviducts and uterine tubes, and they probably escape by a rupture of the integument of the body of the female. Chicks and poulters, when attacked by it, open wide their mouths, gasping for breath, at the same time sneezing and attempting to swallow. This affection, slight at first, gradually becomes more and more oppressive, until it ultimately destroys the patient.

My friend, Dr. N. H. Paaren, of Chicago, recommends as the only remedy which he found serviceable, carbolic acid, both as a preventive and as a pretty sure remedy. He dissolves one grain of pure crystalline carbolic acid in ten drops of alcohol, and adds half a drachm of vinegar. With a feather, stripped as described, and moistened with this solution, the windpipe is cleared. A few twists will dislodge the worms, most of which adhere with slime to the feathers; those not removed in this manner will die from the contact with the mixture. Great skill and dexterity is required, and also some little knowledge of the anatomy of the parts, or the already half-suffocated bird will be killed instead of cured.

The bird is next put in a clean coop, with some shavings moistened with a solution of carbolic acid (half an ounce of the crystalline acid mixed with one quart of water). Powder of sulphur, with a little ginger, is mixed with the meal, composed of barley meal and coarse corn meal, which is given in tin boxes placed conveniently for the patient. A few drops of the last-named solution may be added to the drinking water. The mouth and beak of the bird should be washed with some of the solution, and the old shavings replaced by well sprinkled fresh ones each morning and evening. If the disease is at all curable, and the bird is kept dry in a warm place, it will be cured within three days.

Mr. J. H. Harkness, of St. Louis, who has had large experience, has had good success by using sulphurous acid instead of carbolic acid, diluting it with about five parts of milk, and applying it with the feather as already described. Prevention being better than cure, great care should be taken to destroy the parasite, after removal, by burning them, else the mature eggs will escape destruction, and the young parasites will ultimately find their way into the air passage of other birds.

TO INSURE THE HATCHING OF EGGS.

A correspondent of the *Poultry Record* gives the following plan as better than sprinkling eggs with water to insure their hatching. It is sound, for it is well known that hens which make their nests on the ground are apt to bring off large broods. The earth keeps an equable warmth, and supplies the necessary moisture to the eggs:

I put about two or three inches of fine moist earth into the box I want to put the hen in, press it down firmly and have it a little deeper in the centre, a handful of straw or hay on top of it, and the nest is ready to receive the eggs. The earth contains all the moisture necessary for the good of the eggs. If your box is deep more earth can be put in. A foot deep will do no hurt. You say wheat screenings are poor food for chickens. My experience is different. I consider them the best and healthiest feed, and use them almost exclusively, and only give a little corn at night. Wheat screenings will make the hens lay, keep them from getting broody, and, I think, will in a great measure prevent cholera.

POULTRY.

Feed your poultry on raw onions chopped fine, mixed with other food, about twice a week. It is better than a dozen cures for chicken cholera. Fowls exposed to dampness are apt to be troubled with catarrh, which will run to or up if not attended to. Red pepper mixed with soft feed, fed several times a week, will remove the cold. Pulverized charcoal, given occasionally, is a preventative of putrid affections to which fowls are very subject. Sitting hens can be cured by putting water in a vessel to the depth of one inch, putting the hen into it, and covering the top of the vessel for twenty-four hours. The vessel should be deep enough to allow the hen to stand. Pulverized chalk administered with softer feed will cure diarrhoea. This disorder is caused

by want of variety in food, or by too green food. Garlic fed once or twice a week is excellent for colds.—*Gardener's Magazine.*

SAVE THE BEST FOWLS FOR BREEDING.

It is the worst possible policy to kill all the best and handsomest fowls, and save only the mean and scraggy ones to breed from. This is precisely the way to run out our stock; for like tends to breed like, and the result is that by continually taking away the best birds and using the eggs of the poorest, your flock will grow poorer and poorer every succeeding year.

It would seem as though this was too plain to be insisted upon, but, in fact, "line upon line" is needed. It is this crying want of poultry upon the farms the country through—this careful and intelligent selection of the best for breeding.

Nothing is lost by a little self-denial to start with. The extra pound or two of poultry fees that you leave on its legs, instead of sending it to market, is as good seed, and will bring forth tenfold in your future broods. Save your best stock for breeding.—*The Poultry World.*

THE DRY EARTH PROCESS IN THE POULTRY HOUSE.

The dry earth process can be applied in a way peculiarly valuable to the farmer and gardener. In this country, poultry are kept by everybody who owns land, from a rood to a run. And how few of us have an idea of the value or the quantity of manure that can be made from poultry. I have a pile now, I should say it weighs over two tons; and all this has been gathered out of the poultry house from some 50 fowls, 17 ducks, and 29 geese, young and old, since August last. It was made in this way:—Five loads of dry, good black soil, were dumped into an empty stall in the stable during last summer—in June, I believe. This earth is used for various purposes about the house. It very naturally came into use in the fowl-house, to keep down the ammonia that can be smelled at some distance during wet weather.

Next it was found that it was easier to spread a few shovels of earth over the floor of a morning than scrape up a place as we had been doing all these years. The idea that we were making a very rich compost—something very like guano—followed some time after the earth spreading commenced. Then we laid on the earth as quick as it was necessary to keep the place perfectly dry. The change is something to be surprised at, and it pleases everybody concerned with the poultry. Fully one-half of the dry-earth has been absorbed there, and in turn it has absorbed everything it came in contact with. The mixture has no smell whatever, and after being broken and chopped with the spade is a greyish powder. As I have said, the heap is over two tons, and is sufficient, if I am any judge, to manure an acre of wheat, barley, or oats.—*Morgan, in Queenslander, (Australia.)*

Recipes.

A VALUABLE RECIPE.

The *Journal of Chemistry* publishes a recipe for the destruction of insects, which, if it be one-half as efficacious as it is claimed to be, will prove invaluable:

"Hot alum water is a recent suggestion as an insecticide. It will destroy red and black ants, cockroaches, spiders, chintz bugs, and all the crawling pests which infest our houses.—Take two pounds of alum and dissolve it in three or four quarts of boiling water; let it stand on the fire till the alum disappears; then apply it with a brush, while nearly boiling hot, to every joint and crevice in your closets, beds, pantries, shelves, and the like. Brush the crevices in the floor of the skirting or mop boards, if you suspect that they harbor vermin. If, in whitewashing a ceiling, plenty of alum is added to the lime, it will also serve to keep insects at a distance. Cockroaches will flee the paint which has been washed in cool alum water. Sugar barrels and boxes can be freed from ants by drawing a chalk mark just around the edge of the top of them. The mark must be unbroken or they will creep over it, but a continuous chalk mark, half an inch in width, will set their deprecatations at naught. Powdered alum or borax will keep the chintz bugs at a respectable distance, and travellers should always carry a package in their handbags to scatter over and under their pillows in places where they have reason to suspect the presence of such bed-fellows."

Three Days of Happiness.

{ Boreham, Sussex, England,
June 2nd, 1874.

On Saturday last, we were in the midst of the bustle, noise and throng of the city of London, near one of the finest railway stations in the world, about to depart for the country. We casually turned our head as a lady stepped out of one of the business establishments in the city. Our eyes fell on the lady; the next moment our hand was extended, which she clasped, and a sweet embrace ensued. This was our only sister. We had not seen each other for 20 years. Neither of us expected to have met the other, but knew each other at the first glance. We arranged to accompany her to her husband's, took our seat by the side of herself and two nieces in a train bound for Battle, in Sussex. The country through which we passed appeared more picturesque than any other through which we had travelled. On arrival of the train, a carriage awaited us, into which we were invited, and after a drive through the prettiest part of England, we arrived at Boreham, a small but neat, clean and well-kept village. Our time passed in unspeakable bliss. Nothing could possibly surpass our feelings of pleasure and delight. We write this seated in an arbour in the garden, in front of which is a well-kept croquet-lawn. Adjoining is a meadow of newly cut hay, emitting its fragrance. The scene beyond is a succession of rolling country, beautiful valleys, woodlands and cultivated fields, dotted here and there with farm houses and buildings. The wheat fields are waving now and again like the motion of the sea, as now and then a wind sweeps over them. In the fields may be seen four horses, hitched one before the other ploughing a summer fallow. The cattle are grazing in some of the fields; in others they may be seen lying below the wide spreading branches of some of England's oak trees, which are so peculiarly handsome, with very large spreading tops and short trunks. The lark is sending forth its melodies, soaring in the air above; numerous birds are chirping and singing in the fruit trees and shrubbery close by, even now and again flying into the bower in which we write. Upon turning round and looking through the arched foliage of the lower, we see a beautiful and well-kept garden. A bower of roses faces us; standard roses on trees about four feet high flank the walk with a profusion of flowers of such large size, rich and varied colors, the perfume of which is now and again wafted by us. The scenery beyond is another succession of beautiful farms. In the distance the barques and steamships are seen passing to and fro along the sea coast. At a distance of half a mile apart are seen the cold, stern towers erected for England's defence. But what is still more enchanting is the fond, endearing conversation of our only sister, for whom we always had the greatest love, respect and attachment, being near the same age, and not having seen her for 20 years, and the present being the anniversary of the death of our dear mother. We take walks or rides with her, or her and husband, or nieces, sometimes all together. As we pass the hedges, we must stop to pull a Canterbury bell, the honeysuckle, the wild roses or ferns, and numerous other wild flowers and plants that decorate these beautiful hedges, and

are such reminders of our young days. In some fields we saw partridges, pheasants, hares and rabbits, this being one of the finest shooting districts in England, where the game is protected. We shall never have the same in Canada. Everything is so green; the flowers here last, whereas with us in Canada, they blossom and die in a short time. The weather is quite cool and pleasant. An overcoat is not needed, but a good, thick undercoat is not too warm.

In this vicinity some of England's greatest battles have been fought. The remains of several castles are in this district. We have visited four of these old castles, the dates of construction of which are rather uncertain. One house we visited, called the Standard House, is said to be on the spot where William the Conqueror planted his first flag-staff in England. The house is now over 600 years old. The two lower stories are handsomely furnished with all the comfort of modern times, but the upper part is not used. It is one of the most remarkably constructed ancient dwellings we have seen, much of the timber is apparently as sound as ever, although the floor has been much worn and worm-eaten; but there remains pieces of wood on the outside of the building, on which may be

Fall Wheat.

When in England, we examined some of the growing crops. One of the finest pieces of wheat we saw there was a piece of Australian wheat. The heads were long, the straw was stiff and stood well. The wheat was bald, the grain not being sufficiently advanced to tell what it would be, although from its appearance we should judge the crop would yield sixty bushels per acre. This was growing on a farm in Kent. We also saw on this farm winter oats. They are sown in the autumn, and are not affected by the frost. We hope to introduce both of these varieties to you for trial. Of course, we shall only get a small quantity. The wheat, which is the most important, we shall not be able to procure in time for this fall.

In York Township, there has been another variety of wheat introduced, which appears to be doing very well. A small quantity was brought from the States last autumn. Some was sown in Oct. It was ripe the 25th of July. This is also a bald wheat; the chaff is red, the grain is white.

A company has been formed in Montreal for exporting fresh meat from Canada to England, capital two million.

THE GREEN FLY.

If slugs and snails are the terror of gardeners in reference to their culinary crops and other productions near the surface of the ground, the numerous tribes of aphids are equally obnoxious to the well-being of his trees and shrubs. They also thrive with provoking fecundity in frames and green-houses. The present season is distinguished by the ravages of the minute creatures, who do injury in various ways. They do not eat up the plant on which they dwell, but they constitute a sad incubus on its power of life, both by their own pressure and by the gummy excrement they so plentifully discharge. Gardens are so generally infested by these insects, and the damage they do is so well known, that any contribution to the modes of counteracting their influence must be acceptable.

It is well known that tobacco smoke, when properly applied, effectually clears the plants in the frame of the greenhouse from the aphid, but the same agent when used in the open air is almost useless, for although a puff of smoke will dislodge the enemy it will not kill it—it is only intoxicated for a time, and will speedily return to its predatory attacks.

Having myself a collection of roses scattered rather plentifully over an acre of ground, and all much disfigured with green fly, I therefore commenced operations with gas water. After having then diluted

it with six times its bulk of water I plentifully syringed some climbing roses trained against the wall, but to my vexation the insects were unmoved either by the smell or the taste of the dose. What followed I relate as a warning. If the aphid was unaffected by the gas water, other things were not. Despairing of cleaning my trees by any solution or decoction, I resolved to have recourse to the labor of the hands, and recklessly to crush the bodies of those I could not poison. I went over the bushes and drew my fingers up the shoots infested, thus slaying thousands in a minute. In this way I pressed to death all that I found on the rose buds. The operation is very disagreeable, but it is more effectual than any other I know. As the juices of the insects thus destroyed form a sort of gum on the branches, they must be well syringed with water as you proceed. By this mode I have brought the enemy under, although he is far from being quite destroyed. As the aphides begin to move when the branch is



GARDEN OF THE TUILLERIES.

plainly seen various Scripture texts. This house is over 600 years old. Some of the castles date back between one and two thousand years. In some parts the walls of the castles are 25 ft. thick. The mortar and stone appear to be almost impervious against time, so tightly are they bound together. The ivy claims the walls as its inheritance, and beautifies their rugged tops and sides. Our space will not allow further descriptions or thoughts about these old bulwarks at the present time. No description or painting can do justice to the beauties of reality.

Garden of the Tuilleries.

We present above one of the beautiful places we visited while in Paris. In a future number we will give some more Parisian sketches, with descriptions.

PRIMULA JAPONICA.

D. T. Fish, in the *Gardener's Chronicle*, calls this exceedingly valuable plant the King of the Primroses. It has proved itself hardy in England, having stood the past winter in Suffolk County, and also in Scotland. It is grown readily from seed, and does not sprout. It is becoming a great favorite, and deserves to be in general culture in any flower garden.

Ploughing Match.

An international ploughing match is on the tapis. The Toronto and Washington boys are making the preparations. We hear a car or more will be sent from Canada to convey the plow horses and men to and from the place of trial. We hope these international exhibitions may increase. We may learn something from the Americans. We do not fear but Canada can hold her own in regard to ploughing. Such meetings tend to awaken a friendly feeling between both countries.

THE Durham stock still appears to be advancing. We thought that America had carried off the palm as regards the highest prices; but England has eclipsed them, eight thousand dollars having been paid there for a Durham calf. The highest price paid in America was seven thousand dollars for a calf. We would all like to receive such prices, but few only can afford to attempt to reach the highest priced animals, many will fail in the attempt.

A plague of grasshoppers has visited Southwestern Minnesota. The ground is said to be literally covered with them, and the destruction of all vegetation in that section appears inevitable.

disturbed, I think the shoot which is covered with them should be held over a basin of water, and then gently brushed so that the insects may fall into the basin. These modes of procedure may appear very tiresome, but it is to be understood that a well-regulated garden is only made so by tiresome processes.—EX.

GRASS WALKS.

The *Country Gentleman* advises grass garden walks. A correspondent spaded up all his walks, added good soil enough to raise them to a level with the adjoining beds, raked and rolled them till they were firm and even, and then sowed them with mixed landgrass seed, scratching in with a rake. "In three weeks I had the pleasure of walking on green velvet instead of gritty gravel, and with the help of the lawn mower have no further trouble with my paths. Always green and pleasant to the foot and eye, never wet, being above the garden level, they are a 'joy forever' and the perfection of garden walks."

GRASSHOPPERS IN IOWA.

We learn from the Council Bluffs *Globe*, that the grasshoppers by the million are destroying the growing crops. In some sections they are sweeping everything before them. Unless they soon develop their wings and are carried off by wind, the scourge will become general.

August

What V

This is a to ask. W of late year prospering who a few their farm pared their same term who has th to lend it. It is there of some h work for h which mak on safe sec by good an

For this readers no commending we ourselves sacti.n.s. Investment London.

The star institution conducting and safe. has been in and straight shareholders

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J. T. C. quires in Digger, we two years, as being th at work. season if y R. Dennis them.

FROM

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What Will You Do With Your Money?

This is a very pleasant question to have to ask. We are very happy to know that of late years farmers generally have been prospering, and that a great many of those who a few years since had to mortgage their farms to raise money, are now prepared themselves to lend money on the same terms; but it is not every farmer who has the money who understands how to lend it carefully and advantageously. It is therefore well that he should know of some institution which will do this work for him—some kind of a company which makes a business of lending money on safe securities, and which is governed by good and reliable business men.

For this reason we think we do our readers no injury, but much benefit by commending an institution with which we ourselves have had many money transactions. We refer to the Agricultural Investment and Savings Society, of London.

The standing of the Directors of this institution is excellent, and the mode of conducting the business both economical and safe. Within the few years which it has been in existence, its record is clear and straightforward, and profitable to the shareholders.

Money may be either invested in its stock, which stands high and pays good dividends, or deposited in its Savings Bank, which pays 5 to 6 per cent. Their stock has so far paid 8 per cent., and according to present appearances, will rule much higher; and as the money is all lent on first mortgages, and that, too, at low valuations, it is as safe, if not safer, than any other banking institution in the Dominion.

By placing your money in this manner, you avoid all the trouble and annoyance of taking mortgages, looking after debtors, re-investing your money, &c. All you have to do is to receive your dividend every six months, and the officers of the institution attend to all the details.

J. T. CARLTON.—In reply to your enquiries in regard to Walmsley's Potato Digger, we have used it on our farm for two years, and can safely recommend it as being the best digger we have ever seen at work. It will pay for itself in one season if you have five acres to dig. Mr. R. Dennis, of this city, manufactures them.

FROM THE HANDY HORSE BOOK.

"A saddle should be made to fit the horse for which it is intended, and requires as much variation in shape, especially in the stuffing, as there is variety in the shape of horses' backs. An animal may be fairly shaped in the back, and yet a saddle that fits another horse will always go out on this one's withers. The saddle having been made to fit your horse, let it be placed gently upon him, and shifted till its proper birth is found. When in its right place, the action of the upper part of the shoulder-blade should be quite free from any confinement or what saddlers call the 'gullet' of the saddle under the pomel when the animal is in motion. It stands to reason that any interference with the action of the shoulder-blade must after a long time, indirectly if not directly, cause a horse to falter in his movements.

"Girths.—When girthing a horse, which is always done upon the near or left hand side, the girth should be first drawn tightly towards you under the belly of the horse, so as to bring the saddle rather to the off side on the back of the beast. This is seldom done by grooms; and though a gentleman is not supposed to girth his horse, information on this as well as other points may happen to be of essential service to him; for the consequence of the attendant's usual method is, that when the girths are tightened up, the saddle instead of being in the centre of the horse's back, is inclined to the near or left-hand side, to which it is still farther drawn by the act of mounting, so that when a man is mounted he fancies that one stirrup is longer than the other—the near side stirrup invariably the longest. To remedy this he forces down his foot in the right stirrup, which brings the saddle of the horses back.

"All this would be obviated by care being taken, in the process of girthing, to place the left hand on the middle of the saddle, drawing the first or under girth with the right hand till the girth-holder reaches the buckle, the left hand being then disengaged to assist in bracing up the girth. The outer girth must go through the same process, being drawn under the belly of the horse from the off side tightly before it is attached to the girth-holder.

"With ladies' saddles most particular attention should be paid to the girthing."

Patrons of Husbandry.

Since our last issue the Grangers have been pushing ahead, notwithstanding its being the busy season with farmers. From the letters we receive we are satisfied that just as soon as the fall and winter arrive, Granges will be organized by the hundred. The manufacturers and dealers are making liberal offers to the members—so liberal that if they were made known every farmer would see the necessity of joining immediately—but all offers from manufacturers, &c., are secrets of the Order and cannot be divulged.

Granges organized since last report: 22.—PLYMPTON WIDE-AWAKE GRANGE.—James Armstrong, Master, Uttoxeter, P. O.; Thomas Dougherty, Secretary, Uttoxeter P. O.

23.—PROTECTIVE GRANGE.—William Cole, Master, Sarnia P. O.; S. Mills, Secretary, Sarnia P. O.

24.—LAKESIDE GRANGE.—Thomas Blair, Master, Kincardine P. O.; William Miller, Sen., Secretary, Kincardine P. O.

25.—VICTORIA GRANGE.—Johnson Palmer, Master, Meaford P. O.

26.—GRANGE.—John Waddell, Master, Sarnia P. O.; John McWhorter, Secretary, Sarnia, P. O.

27.—NORTH NORWICH GRANGE.—H. S. Lossee, Master, Norwich P. O.; B. J. Palmer, Secretary, New Durham, P. O.

28.—EAST WILLIAMS GRANGE.—W. J. Anderson, Master, Fern Hill P. O.; Wm. McCallum, Secretary, Fern Hill P. O.

29.—MAPLE LEAF GRANGE.—John McGlashan, Master, North Pelham, P. O.; Peter Wetter, Secretary, North Pelham, P. O.

30.—DARLINGTON GRANGE.—Jesse Trull, Master, Bowmanville; Wm. Wilson, Secretary, Oshawa.

31.—GRANGE.—Wm. S. Campbell, Master, Brantford; F. P. Strickland, Secretary, Brantford.

32.—MUTUAL GRANGE.—John H. Little, Master, Lambeth; Eli L. Davis, Secretary, Tempo.

33.—SMITH GRANGE.—Alex. White, Master, Collinville P. O.; James Alexander, Secretary, Collinville, P. O.

Co-operation appears to be successful in California. The Grangers of that State have chartered fifty vessels, and expect to send all their grain to market on their own account this year. They have also started a bank with a capital of \$5,000,000, which will enable farmers to borrow money on as good terms as merchants or manufacturers.

LONDON DIVISION GRANGE.

Delegates from the various Granges in the vicinity of London and the surrounding districts met on July 21st, for the purpose of forming a Division Grange.

The Grange was organized by Bro. T. W. Dyas, Secretary of the Dominion Grange.

The officers elected were—Worthy Master, John Little; Worthy Lecturer, Fred. Anderson; Worthy Steward, Gen. Jarvis; Worthy Secretary, W. L. Brown; Worthy Treasurer, Benjamin Payne; Ceres, Mrs. Dyas, Pomona, Mrs. Jarvis; Flora, Mrs. Brown.

Committees were appointed to confer with the different branches of trade, consisting of Bros. Burgess, W. Weld, Jarvis, McDougall, Levi, Elliot, Payne, F. Anderson, Beattie, Bruce, J. W. Anderson (East Williams), S. Weld, James Little, Saml. Hunt and Hector McNeil.

The next meeting of the Division will be held on the 12th of September, in the Forest City Grange Rooms.

DO AWAY WITH LAWYERS.

Do our brother patrons know how easy a matter it is to settle a dispute between them-

selves without going through the soul-harrowing, red-tape and expensive process of law? Money was never so literally thrown into the fire as when given to fee a lawyer or pay the expenses of a court. At best it is a toss game. Mere chance and musty precedents decide the case, and the contending parties are of the same opinion still.

Every Grange has from one to half a dozen sound men in it—men who are conscientious, wise, and, withal, firm. This man, or these men, are better fitted to settle disputes than any judge before whom they may be brought.

New the best plan for two Patrons who have difficulties to settle, is to decide upon an umpire, and place it before him (how often I have heard lawyers and judges say that any man who will falsify in telling what should be a candid story, will do the same under oath) and let him decide the rights of the case. If the referee is properly chosen, the case will be decided properly. I have seen this tried, and I believe it to be the correct way of settling questions between honest men. Where there is a rogue in the case, of course that changes the matter.

I know an instance where one Granger sued another for fifty dollars. The two men just met and talked over the matter, and decided to leave it out to a brother Granger. This was done—the quarrel was settled amicably, and no fees paid to lawyers. I am of the opinion that all Patrons will find this the best and wisest manner for difficulties to be settled, thus saving much anxiety and time and cost. PATRON.

HORTICULTURAL ITEMS

THE NORWOOD RASPBERRY.

A new hybrid variety, which is claimed to be better than any of the black caps in quality, and also perfectly hardy.

THE CLARK RASPBERRY.

This variety is pronounced a failure by the New England Farmer. It does not stand the winter, and its small quantity of fruit renders it worthless.

THE MANGOSTEEN.

A tree of the Mangosteen, which produces the most delicious fruit known, is thriving at the Royal Gardens at Kew, London; but it is not known whether it will bear fruit or not.

PYRUS MAULEI.

Is the name of a new and very beautiful shrub, that resembles the Pyrus Japonica. It has orange flowers, and these flowers bloom out late in the season. This shrub is hardy in England, and considered a valuable acquisition, especially as it bears oblong, yellow, ribbed fruit of good flavor. So says a well known correspondent of the Gardener's Chronicle.

WATERING PLANTS.

Plants set against walls and piazzas frequently suffer from want of water at this season, when even ground near by them is quite wet. Draw away the soil around each plant so as to form a basin; fill in with a bucket full of water, allowing it to soak gradually away, and when the surface has dried a little, draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If the water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes, the easier it dries; and the result is, the more water you give the more is wanted.—Gardener's Monthly.

PINCHING VINES.

The leaders of squash, melon and cucumber vines, etc., should be pinched when they have acquired a length of from six to twelve inches. Pinch only the extreme tips. They will immediately throw out laterals. Amateur cultivators sometimes pinch the laterals when these have grown say two feet. Others, again, who desire extra fine fruit, pinch the laterals on which the fruit is borne, leaving a bud and leaf beyond the fruit after it is set, continuing the system in extenso. Still another plan is to allow each lateral to bear two or three fruits, stopping all beyond this. By this system the vines will bear stimulating strongly with manure, liquid is best since by this plan the stimulant cannot expend itself in the undue expansions of vine.

HEDGES.

It is one of the essentials of a permanent prosperous hedge, that it must be at least as wide at the base as it is high, and that it must be trimmed with a flat or gently curved surface to a point at the top. The light then has a chance to play directly on every part of the leaf surface, without which it is impossible to have a hedge long in order. For that part which receives the greater share of sunlight, will get stronger, and that which gets the least gradually grows weaker, till a thin, poor base is the final result. This is one great object in pruning to remedy. Another strong point to be gained is to weaken the strong upward tendency which, every one knows, is the weakness of hedge growing. Nothing weakens a plant more than to have its leaves taken off while young, just after they push, and before they are fully mature. If, therefore, the shoots towards the top of the hedge are taken off about the first week in June, while they are yet soft, that part of the hedge will be weakened, and the base, which for some months we leave cut, will be correspondingly benefited thereby.—Gardener's Monthly.

SET CABBAGES.

Not long since, I read a recommendation in the agricultural papers to raise cabbages as a fodder crop. It was indicated that thirty-five tons of fodder could be raised from an acre. The Early Winningstadt was recommended. I am satisfied that the quantity, weighing stumps, leaves and heads, would not be difficult to raise. I would recommend, however, a better and sweeter kind; not merely as fodder, but for fattening beef.

Two years ago I tried the experiment of feeding a fattening cow on the sweet heads of Green Globe Savoy and other cabbages. The success of the experiment, as to the thrift of the animal, the very juicy sweetness of the meat, and the cheapness of the process, was most gratifying. I think twenty tons of sweet cabbage heads per acre would not be difficult. When my cow, spoken of, was before the butcher, he said it was the fattest beef he had seen that year, and when told that it was the result of cabbage feed, with hay, only one bag of meal being given just before killing, he expressed astonishment.—Etc.

THE CANKER WORM.

It has been discovered that the canker worm that has been spreading so rapidly throughout the Northwest for the last few years, destroying the foliage of apple trees, and making the orchards look as though fire had swept through them, can be exterminated, and that, too, with very little labor.

The female canker worm rises out of the ground in the spring, as soon as the frost is out, and crawls up the trunk of the tree (as she is wingless) and deposits her eggs under old bark or in rough places which hatch in May or the fore part of June into small loop-hole caterpillars, or so-called measuring worms, which soon spread over the trees, destroying the foliage.

Many plans have been tried to prevent the worm from crawling up the tree and with some success. But to "wipe them out" completely, so that there shall not be one of them left to tell the tale, is by the use of Paris green in water applied with a large syringe—a table spoonful of Paris green to a patent pailful of water.

When the worms are all hatched as near as can be judged, give the trees a good wetting down, and if afterwards it is discovered that they were not all killed put on more, but usually one wetting will answer.

We know orchards that in 1872 were covered with this worm, the foliage and fruit crop completely destroyed, that were treated as above, last year, with perfect success—the worms killed, and the orchards produced fine crops of apples.

This liquid will not only destroy the canker worm but the myriads of insects that are too small to be seen by the naked eye, that are preying upon the foliage of the trees. One party says that after using it last year in his orchard, the foliage made such a luxuriant growth and so dark a green that it was almost black. It can be used just as safely in the flower garden, destroying the insects that infest the shrubbery, as in the orchard.

The canker worm has already made its appearance in some sections of the country, and therefore must be looked after at once. The above is a very simple remedy and very easily applied.

Garden Orchard and Forest.

THE APPLE WORM.

The apple worm (Carpocapse pomonella, L.) is the most widely distributed enemy of the fruit from which its name is derived. The annual loss of apples and other pip fruit caused by its insidious working are enormous, amounting during some years, and in certain sections of the country, to fully nine-tenths of the crop. Like many other of our most noxious pests, it is a foreign insect, having been introduced into this section of the country from Europe about the beginning of the present century, and having increased with the spread of horticulture, till at last it is found in the Western territories and on the Pacific coast, where a few years back the apple-grower enjoyed a blessed immunity from its injuries.

The parent moth is prettily marked with bronze, brown, and grey, and is seldom noticed on account of its shy, nocturnal habits; or, when noticed, seldom recognized by the orchardist as the source of his windfalls and wormy fruit. I have proved incontestably that which was very generally surmised by practical men, but doubted by many authors, viz.: the double brooded nature of this insect over a large portion of, if not throughout the United States. The first moths made their appearance with the bursting of the apple blossom, and place their eggs almost invariably at the calyx-end of the young fruit. The greater part of the worms which hatch from these eggs leave the fruit during the month of June in the latitude of St. Louis. These spring up and the course of two or three weeks produce moths which, in their turn, lay eggs, but not so invariably in the calyx end. The worms (second brood) from their eggs leave the fruit, some of them as early as the first of September, others as late as Christmas. In either case they spin their cocoons as soon as they have left the apples, but do not assume the pupa state until towards spring—the moths from the late matured worms appearing almost as early as those from the early matured ones.

When young the worm is whitish, with a black head and a black shield on top of first joint. When full grown, it acquires a flesh-colored or pinkish tint, and the head and shield becomes brown. It may be distinguished at any stage of its growth from all other worms that bore into apples, by its having six horny legs under the middle of the body, and two at the anal extremity. When mature, the larva makes its exit from the fruit and seeks a convenient shelter under which to spin its cocoon. The latter is oval, white within, but disguised outwardly with particles of the substance to which it is attached. Inside of the cocoon the insect changes to a yellowish brown chrysalis, in which state it remains from twelve to eighteen days, at the end of which time the moth issues. In no case does the worm enter the ground.

Our knowledge of the habits of this insect clearly indicates that it was vulnerable only in the larva or chrysalis state. It is obvious that when the eggs are once laid, nothing can save the fruit, and it is equally certain—as careful and repeated experiments have proved—that the moths cannot be lured to destruction to any great extent by lights or quid sweets which prove attractive to many other species. The habit of the worm of spinning up under the first convenient shelter that it finds has, however, suggested a method of trapping, by which the orchardist may practically become master of his foe. This method consists of encircling the trunk of the tree with some bandage which shall form an inviting retreat to the worms. As to the kind, each one will, of course, be guided by what substance he can most cheaply obtain. Of several different materials I have used, the following may be enumerated in what I consider the order of their merit.

1. Paper Bandage.—Common straw, wrapping paper, 18x30, can be bought for 60 cents a bundle. Each bundle contains 240 sheets, and each sheet folded lengthwise thrice upon itself will give eight layers, between two and three inches wide, and be of sufficient length to encircle most trees. It is easily drawn round the tree and fastened with a tack, and so cheap that when the time comes to destroy the worms, the bandages containing them may be detached, piled in a heap, and burned, and fresh ones attached in their places. If eight bandages are used to each tree during the season the cost will be just two cents per tree, and the owners could

well afford to treble the number of sheets and keep three on each tree, either together or in different places.

2. Rags.—These have very much the same effect as paper, but are more costly and difficult to get the requisite length. Where they can be had cheaply, they may be detached from the tree, scalded with their contents, or passed through the clothes wringer and used again.

3. The Wire-trap which has been figured and described in the Tribune, and which consists of pieces of shingle screwed to the tree, is perhaps the next convenient, but both the cost and time to destroy the worms are greater than the first two methods, and with traps on the side of a tree can never be so efficient as those which encircle it.

4. The lath-belt, consisting of strips of old sacks, four inches wide, and lined on one side with pieces of lath tacked on transversely and at such a distance from each other that when brought round the tree, they form an almost complete wooded ring, is the very best of all traps, so far as efficiency goes; but it is placed fourth on the list, because of the greater cost and trouble of making, and of destroying the worms when captured.

GLADIOLUSES AND DAHLIAS.

There are few flowers so easily raised, and withal so cheap, and that make a more brilliant show in the garden than gladioluses. They may be bought for from three to five dollars per hundred, mixed sorts, if one is contented to grow the old and better-known sorts—and these are really as fine as any of the newer ones, and they will give as great a diversity of color as can be wished, light and dark red, crimson, scarlet, purple, and so through the lighter shades of red to pure white. They are very effective planted in groups of five or six together, or in beds eight or nine inches apart each way.

They should be planted from early in the season until the middle of June for succession, although the intermediate plantings are apt to have their blooms injured by the sun unless shaded at the time of blossoming. The early and late plantings are, however, all that could be desired, and the ease with which they are kept over winter, in dry sand in a cellar exempt from damp and frost, should commend them to every lover of flowers. They thrive and bloom best in a moist (not wet), rich, sandy loam, but do well in any good garden soil. If very sandy, cow-manure is the proper application to give consistency and enhance the bloom. If thoroughly watered about the time of blooming with water in which a little ammonia is mixed, it will materially enhance the vividness of the bloom.

Dahlias are of the easiest culture and should find a place in every garden. They require a deep, rich, warm, soil, and, if planted the first week in June, will give abundance of bloom during the latter part of summer and through the autumn until frosts come. When planted, a strong stake should be set to each plant to which it should be tied as it increases in growth, and, if the soil is dry, liberal waterings should be given and the ground thoroughly mulched.

These, once obtained, may be kept indefinitely with but little trouble. All that is required is to lift them after they are killed by frost, dry them and pack in dry sand and keep where they will neither be frozen nor become damp. They will continue to give enjoyment thus, year after year.

EVERGREEN TREES IN ORCHARDS.

You are aware, Messrs. Editors and readers of the Prairie Farmer, that I have a long time objected to belt planting as a protection to orchard of fruit culture, and that I have advocated the planting of evergreens here and there in and among the orchard. Now I have no desire to place myself in antagonism with or against any advocate of the belt system, but I do know that the influence of an evergreen extends to just about double the distance of its height; and that when placed along there is an ameliorating influence obtained in temperature, both summer and winter; and I also know that a thick belt of evergreens, while it has a sheltering influence for a certain distance, has also an influence tending to draw moisture and miasmatic disease of tree and foliage within a near radius, and especially when the southern line of heat comes most strongly upon it. I could make quotations to prove my position last named, but I have no desire

for controversy, and only seek to induce planting of evergreens in and among orchards indiscriminately, because, when once a fruit-grower has done it, and waited ten years to see its results, I know he will thank me for the suggestion of a good and reliable protection in the matter of orcharding.

F. R. ELLIOTT, in Prairie Farmer.

ORCHARD GRASS.

The seeds of orchard grass weigh about twelve pounds to the bushel, and used in connection with other grasses in seeding, from three to five pounds are used. It comes to maturity early, being in blossom with red clover, and if sown with clover in place of timothy, the result would be that both would be in condition to cut at the same time, making a very superior hay. Grown for hay it needs to be cut from the 10th to the 15th of June. While there can be no doubt that it makes a very palatable and very nutritious hay (Prof. Way, the distinguished agricultural chemist of England, having found by an analysis of twenty-three varieties of grasses, that orchard grass exceeded all others except two in albuminous or flesh forming principles) it is as a pasture grass that it is best known, and as such it has characteristics which give it very high rank for its purpose. It succeeds well in the shade, is a very rapid grower, and bears close cropping. All who have had experience with it unite in saying that it produces more pasture than any other grass. It starts very early in the spring, therefore affording a reasonable grazing spot for stock in case the farmer is short of hay, and nearly approaching meadow Fodder in this respect. Dr. E. Ware Sylvester, of Lyons, N. Y., states in a communication to the Farmers' Club of the American institute, that he has cut tufts of it which were growing in warm situations that would average nine inches in length, while the remnants of snow drifts were still in sight; and tufts from the same location cut early as June, and before the seed had commenced to form, measured four feet nine inches in length, timothy at that time being not half grown. Fed off by cattle it springs up immediately, those who have had most experience with it say it makes good pasturage after one day's rest. Some of our Maine farmers tell us cattle do not like it as hay, and that they will eat June grass in preference to it—but they are either mistaken in the grass, not being orchard grass at all, or if so, it is late cut and woolly, and of course not relished by cattle. A steady increase in the demand for the seed has been observable by our seedsmen during the past few years, the Messrs. Libby of this city having sold large quantities of it. To sum up what we have said in regard to it in few words we will again repeat:—Orchard grass starts very early in spring, stands drought exceedingly well, grows very rapidly, bears close cropping, is very nutritious, is very much relished by stock, and will make a continuous meadow.

We are aware the above statements contain nothing new about this now much talked of grass, but if any of our readers have had sufficient experience with it to give an opinion or any new facts about it, we should be glad to hear from them.—Maine Farmer.

GRAPE CULTURE IN OHIO.

Of the vineyards on the lake shore and islands, full seven-eighths are Catawba and I should say that nine-tenths of the wine manufactured is of this variety—though there is a considerable amount of Ives and Concord wine made at Cincinnati and other towns in Southern Ohio, and some at Cleveland, Sandusky and Toledo; also, small amounts of Delaware and Norton.

The business of wine making is now carried on with much more of capital and skill than formerly, and, consequently, the product is of better quality and commands readier sale and better prices. This improvement in the domestic wine trade causes an increased demand for good grapes, independent of the fruit markets, and prevents all feeling of discouragement in the minds of those who own vineyards in favorable localities. At the prices paid by wine makers for the fruit, four or five cents per pound, the crop is found to pay better than the average of any other for which the lands are adapted. For table use, also—where the facilities for transportation are good, by

steamboat or freight cars—the grape crop has paid quite well, even at the low average price for the past three or four years.

Some vineyards have entirely failed, as was to be expected, for want of intelligence or care in the choice of land, of its preparation and planting, or in the selection of the varieties of grapes and the management of the vines. It will be seen, by the statistics, that the aggregate is only about one-half as many acres as are planted each year—the balance being offset by vineyards destroyed or abandoned.

Much injury has been sustained, especially by the Catawba and Delaware vineyards, for allowing the vines to overbear; this was particularly the case in the fruitful seasons of 1870 and '71, when many vineyards were allowed to bear as much as five or six tons of fruit to the acre. This so weakened the vines as to induce disease of the foliage, and thus they were unfitted to endure the severe cold of the winter of 1872-'73, which caused destruction of the wood in many vineyards, and the buds in the majority, so that the crop of the past season was not over about one-fourth of the usual average for the entire State, or one-third to a half in the most favored localities.

The Sulphur Remedy.—Much interest was excited at the late annual meeting of our State Horticulture Society, by reports of recent experiments with the use of sulphur on Catawba vineyards at the islands. It was stated by one of the grape-growers from there, that sulphuring the vines had been practiced to some extent for several years past, and that, when judiciously done, it was found a certain preventative of mildew and rotting of the fruit, and also of the blightiness of the foliage; and where this was practiced in 1872, the vines ripened their wood so well as to suffer but little damage from the winter, and thus produced a half crop, while vineyards not sulphured bore no fruit at all. These facts will cause a very general use of sulphur hereafter, and much improvement is expected therefrom.

The practice is to mix sulphur with an equal quantity of fine air-slacked lime, and apply the powder with a bellows, of which they manufacture a very cheap style for the purpose. The first application is made as soon as the blossoms are off in June, and repeated once a month or so during the summer.

The labor and expense are quite small compared with the benefits; and the practice is recommended to grape-growers generally, especially for varieties that are subject to mildew or blighting of the foliage. Let us give the experiment a trial and report the results next year.—M. B. BATEHAM, in Horticulturist.

HORTICULTURAL SOCIETY.

At the summer exhibition of the Toronto Horticultural Society, the quality of plants shown was of a high order of merit, and the number of exhibits must have been highly gratifying to the Committee. It is a great pity we have not had these flower shows more frequently, for what is more enjoyable than to witness a good floral display.

In England every encouragement is given to the cultivation of flowers. Small cottage gardeners hold their fortnightly or monthly shows and in the large cities, especially in London, several exhibitions are held, at which the residents of the crowded courts and streets of the big city, exhibit plants that they have reared in their closely packed homes; they take a pride in these small local exhibitions which is most pleasant to witness. There is scarcely a house, or rather window, in the crowded courts of the poorer parts of that great metropolis, but where flowers may be seen nearly all the year round in great profusion. Surely something might be done in the way of holding small exhibitions in the towns and villages in this country, and whereby a taste for flowers would be cultivated to a greater extent than at present.

CHERRY TREE APHIS.

Will some one please tell us though the Prairie Farmer, what is known concerning the little black eggs or lice, which are found on the under side of the cherry leaf, causing it to curl, and injuring the fruit on our trees. Cherries in this vicinity have been very much injured by them for several years past, and none of our neighbors have found a remedy. We have not as yet discovered any of the lice this season, but expect them

every day and wish to be prepared to receive them. An early answer will much oblige an old subscriber.

F. AINSWORTH.

North Amherst, Mass., June 4, '74.

REMARKS.—The lice which injure your cherry trees can be killed by a strong wash of whale oil and soap suds, if you can get it on them, which is quite difficult, as they are pretty well protected by the curl of the leaf. Another way would be to clip off the ends of the twigs with a long-handled pruning shears, and then crush the lice under foot. This might be more practical than the wash, as the lice commence operations on the ends of the twigs where the leaves are most tender. A few years ago, the cherry tree in this vicinity were nearly ruined by these black lice, but, for the past year or two, they have not been very numerous. Perhaps you may escape this year. Nearly all insects have their parasitic foes, and it is not improbable that these cherry lice have been reduced by some such enemy.

CLOVER AS A FERTILIZER.

Dr. Voelcker, the able chemist to the Royal Agricultural Society of England, by a series of the most exhaustive analysis of soils and of plants, has discovered and established the fact that an immense amount of nitrogenous food accumulates in the soil during the growth of clover, especially in the clover roots and tops, to three and a half tons of nitrogen per acre; equal to four tons and a third of ammonia. These results, verified and proved, came almost like a new revelation in farming. Dr. Voelcker says that the farmer who wishes to derive the full benefit from his clover hay, should plough it up for wheat, or timothy, as soon as possible in the autumn, and leave it in a rough state as long as is admissible, in order that the air may find free access into the land, and the organic remains left in so much abundance in a good crop of clover, be changed into plant food; more especially that the crude nitrogenous organic matter in the clover roots and decaying leaves may have time to become transformed into ammoniacal compounds, and these in the course of time into nitrates, the form in which nitrogen is assimilated by cereal crops.—Massachusetts Ploverman.

PACKING PLANTS TO TRAVEL LONG DISTANCES.

In packing plants for transmission to distant places, Dr. Thuber says there is more danger from too much than from too little moisture. The best packing material is sphagnum or bog moss, and this should be just so damp only as to be elastic to the touch. Plants packed in this, if not too damp, will remain for weeks uninjured; that is, if the plants are at rest. Another thing is to pack close. If sending by post, take a piece of strong brown paper; lay the just wet—not damp—moss upon it; put the plants upon the moss, and more moss over the plants. Then begin at one end of the paper and roll up hard, secure with a string, and then put another paper over for directions. So, in packing in boxes, use the moss just damp, and have the box full and crammed down hard, so that there can be no possibility of moving or shaking in transit.

LUCERNE.

The editor of the American Farmer, Baltimore, thus briefly gives his experience of the value of Lucerne:

"We staked off a patch of this, less than one-sixth of an acre, and had it cut and fed to one horse and cow, the one cutting supplying the two head for fourteen days. The average height of the Lucerne was about thirty inches, and though we have had no rain since, the height, as we write (prior to the first of July), is about ten inches.—We cut our Lucerne last season, which was a dry one, three times—in this respect not coming near our correspondent, who cut his crop seven times in one year."

A HEAVY FLEECE.

The Colonial Farmer, Frederickton, N. B., says:

"A farmer at Lower Gagetown, Queen's County, possesses a flock of sixteen grade Leicesters that averaged ten pound of wool per head. The sheep were highly fed for six weeks or so, before going out to grass, the food consisting of grain and potatoes.—Mr. Fox, the owner of the flock, considers it judicious to change the food frequently. Not bad for New Brunswick.

Notes of the Garden and Farm.

ORIGINAL AND SELECTED.—S.

CURRENT WORMS.

We see recommended the following recipe for this pest of the garden:

"Two teaspoonfuls of potash to two gallons of rain water, sprinkled over the currant bushes twice a day for a few days, will effectually rid the bushes of the currant worms. For the potato bug the same remedy is effectual."

For years we have effectually waged war against the currant worm, and have always had a superabundant fruit supply even when there was none elsewhere in the neighborhood. My remedy was hellebore sprinkled on the bushes as soon as the worm made its appearance. It never failed of destroying them, and at no time was it of the slightest injury to bushes or fruit. To have the very large crops of currants thrive some little trouble is necessary. In the fall I prune every bush, dig a trench around it, which I fill with rich, strong earth or compost, and in spring mulch with wood ashes.

The Western Advocate regrets that the Agricultural "Associations almost altogether ignore the cultivation of the soil in their competition for premiums." It is not so in the home country. We have taken part in awarding premiums for the best plowed fields, the best crops of roots, of cereals, and of flax, and know what a valuable stimulus to good farming was the awarding of such premiums. In a section of country by no means remarkable for its natural adaptation to successful agriculture, we have seen fields of turnips yielding from 40 to 45 imperial tons to the plantation acres; mangold wortzels a still heavier crop; oats from 17 to 20 barrels (the barrel of oats the same weight as a barrel of flour); potatoes nearly 23 tons, equal to 800 bushels.—This was model farming. Not a weed was to be seen; the stones were crowded out of sight in the best place—the drains; there were no waste corners. The reports of the farms lately obtaining the premiums were only on a larger scale, and in a better farming locality, but not otherwise better.

VITALITY OF THE SEEDS OF PLANTS.

"I never use in my garden such manure as that heap till after a year's preparation," said E., pointing to a pile of the droppings of cows that had been roaming and grazing at will over the commons. "For some time," he continued, "I used it without any preparation, but experience has taught me a lesson on the subject also. The seed of white clover eaten by the cattle on the common remains perfectly sound in their droppings, and when used on the land the following spring, it grows with such tenacity of life that I cannot keep my seed beds or flower knots clean."

So great is the vitality of the seed of white clover (trifolium ripens) and of many other plants, that the saliva, the heat of the stomach, and the rumination of cud of chewing animals are powerless to affect it. When such is the vitality of seeds so small and apparently so easily injured, what must be the power of endurance of the acorn and chestnut and others protected by strong, hard shells.

The length of time that some seeds must have lain in the earth before they had the opportunity of germinating, sometimes lead to the inquiry: "Whence came those plants so alien to the place?" We can scarcely believe that for so many centuries as must have elapsed since plants of the same species could have grown there, the seeds could have been stored in the earth with all their vital powers unaffected by time or any of its vicissitudes.

The writer had at one time the opportunity of witnessing a rare and remarkable instance illustrating this wonderful endurance of vital power. On the south-west coast of Ireland there is a long, low range of mountains—low when compared to McGillivuddy's Reeks and other mountains in the vicinity. There was no grass growing on the mountains, no clover in the entire neighborhood. More than once has the writer reclined, not "beneath the shade of the leafy beech tree," but on the fragrant heath, while bees in thousands gathered their winter stores of honey from the many colored blossoms of the heath and wild thyme that

were the only occupants of the soil. Mr. M., desirous to improve a portion of this mountain, had it manured with sea sand and shells from the shore. Such was the effect of this manuring that the heath and thyme disappeared when it was applied, and a sward of white clover sprung up and flourished, the dormant seeds awakened into life by the lime of which the shells were composed. How long must those seeds have lain beneath the turf, bearing for untold centuries nothing but heather and thyme on that mountain side?

MANURING LIGHT AND HEAVY SOILS.

In light soils a good application of farm-yard manure actually, in time, adds bulk to the soil and creates more land, owing to the large amount of humus and other organic matters not taken up by the plant. In stiff lands dung may be carted on the land and spread without any fear of a loss of manuring matter, even though it be plowed in for some time. Clay has very marked powers of absorption, and as the rain washes the soluble material into the soil, it is held there by the clay, ready for use when required by the next crop. This property of clay ought to be borne in mind, as it will enable you to clear your farm yards, provided you are going to dung some clay land.—Prof. Catchside, at Dunbridge Wells, E.

THE GRAPE VINE WITHOUT ARTIFICIAL SUPPORT.

In the garden of the Rev. Mr. Hablen, of Penetanguishene, a Clinton vine was allowed to run wild over the ground. The effect was very remarkable. The vine not only bore profusely and ripened its fruit as early as the others of the same kind, but the grapes were much finer, both in size and flavor—so much as to be like quite a different fruit.—Agr. Report, Ontario.

PERFORATING POWER OF ROOTS.

It is indeed wonderful how easily the roots of plants and trees bore through hard, impacted soils in search of nourishment.—They use for this purpose a sort of awl, of immense power, situated at the end of the roots, and capable, with the aid of the other root machinery, of thrusting aside heavy weights and getting through almost any obstructions. Yet the awl consists only of a mass of microscopic absorbent cells formed by protoplasm or vegetable mucus—the fluid in which vital action is first set up.—The roots of the elm and the maple will bore through the hardest soils of walls or streets, enter drains, twine about water pipes and penetrate through the seams of stone and brick structures.

The roots of some plants have been known to pass through eighteen inches of solid brick work and make their appearance in a wine cellar below. Plants have a vast power in overcoming obstacles, when foraging for food. They are like a hungry animal which no fences can restrain when there is food beyond. The movements of roots in soils proceed on certain principles of utility in connection with the welfare of the plant. Some need much more moisture than others, and the roots will drive through rocks to obtain it; others need silicious food, and will penetrate through a clay bank to reach the desired foraging ground. The urgency with which nature drives plants and animals in pursuit of food is almost irresistible.—Journal of Chemistry.

The farm of Auchlochbrach, at Glenrimmes, near the forest of Gleniddoch, in Banffshire, it is hardly necessary to state, is in the Highlands of Scotland. It is situated in a romantic glen, which is now become historical by reason of the great success of the splendid black polled cattle which are there produced. It was from this glen that the polled ox came, which, in the Smithfield show of 1872, beat every other breed, shorthorn included, and that at the early age of three years, at which tender period he weighed 2,400 pounds. Recently, Mr. McPherson, "of that ilk," sold six two-year old beasts of this breed for \$152 each. Besides this, the average price of two-year olds from the whole of this Highland glen for several years past, has been from \$100 to \$140. Mr. McPherson possesses the only pure polled cattle in the glen, hence the greater value of his stock. Plenty of milk to begin with, good grass, turnips and straw are the main materials of which this fine

two-year old beef is made. Surely this is creditable to this not inelegant—if black and hornless—stock.

STORING POTATOES FOR SEED.

The method of storing potatoes for seed deserves our serious consideration. Potatoes that have been inadvertently left in the ground when the crop is taken up, if so deep as to escape being frozen, are always found fresh when turned up in the spring, and they are known to germinate more freely and have a stronger growth than potatoes stored in cellar or root-house. To preserve potatoes fresh for seed we would dig them with care as soon as ripe, let them dry for a few hours in the sun and pit them, not putting straw on them, but a soil; then, after a few days, cover them lightly with earth, and afterwards, before the hard frost sets in, put on as much additional earth as will secure them from the frost. In spring they will be found as fresh as when taken up out of the hill, and in the very best condition for the table as well as for seed.

SELECTIONS FROM OUR HORTICULTURAL EXCHANGES.

The "Gardener's Monthly" says, in reference to the transplanting of the Arborvitae:—Arborvitae is transplanted in this part of the world all through the summer season. The earth has to be tightly packed round the root; and this tight packing is not merely a light performance by heel and toe, but a ramming, as if one was setting a post. If the weather be dry, or likely to be dry, water is given with the plant at planting. Unless the season be a very extraordinary one, they do as well at any season. There is some risk in all.

THE JAPAN PEA.

The London "Garden" thus writes:—"We claim the honor, says the "Mobile Register," of having started a new interest in Japan Peas, and we are proud of it, for the Japan Pea is undoubtedly one of the best things for our climate. It is easily raised, will grow on almost any soil, and yields enormously. As food for man, we think it is no equal in the pea or bean way. What is Japan Pea? [We hope in the fall to be able to answer this question of the "Garden." We had the pleasure this season to present to our subscribers small samples of the Japan Pea, and we expect their value will be fully tried.—Ed. F.A.]

It is only by slow degrees that one becomes acquainted with the manifold diseases to which plants are subject, and when these depend either upon very obscure or minute moulds and insects, the progress is necessarily very slow. We have long since been acquainted with certain small excrecences on peach roots, which ultimately become more or less confluent and decay, but we have been quite at a loss to account for them. The excrecences which are so common on pear leaves have at last brought to light an extremely minute four-footed acaroid, belonging to the same category as that which is so destructive to Nuts and Black Currants, and one of which is well known as inhabiting certain gall-like tubercles on Lime leaves. This bids fair to explain a host of affections to which the leaves of various trees are subject. We have now before us an explanation of the peach root excrecences. Mr. G. F. Wilson, to whom horticulture is so much indebted, has, in conjunction with Mr. Joshua Saunders, just sent to us from the Rev. J. Heyworth's, Westbury-on-Trym, some roots attacked by a minute insect which is clearly very closely allied to the Phylloxera. The way in which the roots are affected is almost precisely that in which the vine roots are attacked. The insect either alone or in company, settles upon the roots, the tissues on either side swell from hypertrophy, and there is thus a little nidus for the insect which lives upon the juices. The little nodes gradually decay, and the whole root eventually becomes highly diseased. The insect is yellow, like the young Phylloxera, about one thirty-fifth of an inch in length, and two-thirds as much in width in the broadest part, with six legs and two three jointed antennae, which have two very minute bristles at the tip. How far this may be constant it is difficult to say, without an opportunity of examining the matter on the spot, for the insect does not travel well, and out of eleven pieces of root one only could be found bearing the little pest after very diligent search. Apparently the insects have just lost their activity, and are now gradually entering upon the cocoon state, like the Phylloxera, for one or two specimens occur twice as large as the rest and much stouter. Further opportunities will doubtless occur of studying the insect, the discovery of which, especially considering its close resemblance to the Phylloxera, is of some importance.

On Board the Circassian.

This is one of the Allan Line of steamships which carry the British mails. The Allan brothers have now twenty steamships plying between Europe and America. This is one of the best of this Line, although they own some that are larger. The Circassian is 375 feet long; her engines are of the latest pattern, and have a combined power of two thousand, seven hundred horses.

She left Liverpool on Thursday, the 9th of July, having about 400 passengers, 57 of which were cabin, 40 intermediate, and the remainder steerage. The price of passage is \$90, \$75, \$35, and \$15 to \$17.50. The wind being favorable, the sea smooth and the weather fine, she arrived at Quebec on the 21st of July; she would have made the trip three days sooner, but on the second day from land she broke one of her connecting rods, which delayed her nearly a day to temporarily repair it, and when mended the engineer deemed it unsafe to use much more than half her power.

Captain Wylie, who, by the way, is one of the most gentlemanly and obliging captains we ever met, is respected and admired by passengers and men; he has been in this service for twenty years, as captain, in that time he says he had never a better opportunity for making a quick passage than at the present trip.—The sea was as smooth as a river; nearly the whole journey hardly any one knew what sea sickness was.

The cabin passengers are tempted, five times a day, with the greatest delicacies to please the appetite, and every requirement and attention is paid to their comfort in every way; the intermediate passengers have not as great an advantage beyond the steerage passengers as they expected, the greatest advantage being that their company may be a little more select and refined. The steerage passengers are well supplied with good, plain, wholesome food, and appear well satisfied; the only reasonable complaint we heard from many of them was that it would be better with more air below decks.

There are always some strange affairs occurring that astonish us. We will relate one or two:

Many years since a man of the name of Rouland worked at Mr. Rowland's grain ware room, in London, Canada. He moved to Ottawa and engaged in his business, brick making. His father resided in Yorkshire, England; the father and son had not heard from each other for more than twenty years; they had both moved from their former residences. Mr. Rouland's wife had occasion to go to England; when there she searched for her husband's father, and after going to eight different places, she found him, and prepared to take him to his son in America. She gave the old gentleman but two hours to make up his mind whether to go or not; he consented. The next day his daughter-in-law sold all his effects, and before ten o'clock telegraphed to his friends in different parts to meet them at a railway station at one o'clock, at two o'clock they were on board the train for America. The old man is 76 years of age. He is now living with his third wife, who accompanies him; she also has been married three times. The son in Ottawa does not know that his father is living; there will be a meeting and a greeting. Seventy-six appears an advanced age to emigrate at, but the old man looks as if he will outlive a great many on board that are not half that age.

Another strange circumstance:

An emigrant is on board named Joseph Wright, of Sautry, in Huntingdonshire; he married twenty years ago, he and his wife at that time made up their minds to come to America, and have been saving all their surplus funds since then for that purpose. His wife, he says, is as good in the harvest field at binding as he is himself or any man; they have always been industrious and frugal, and have

only just now accumulated sufficient to defray the expenses of their passage comfortably. They go to Rock Island, Ill. They have five children.

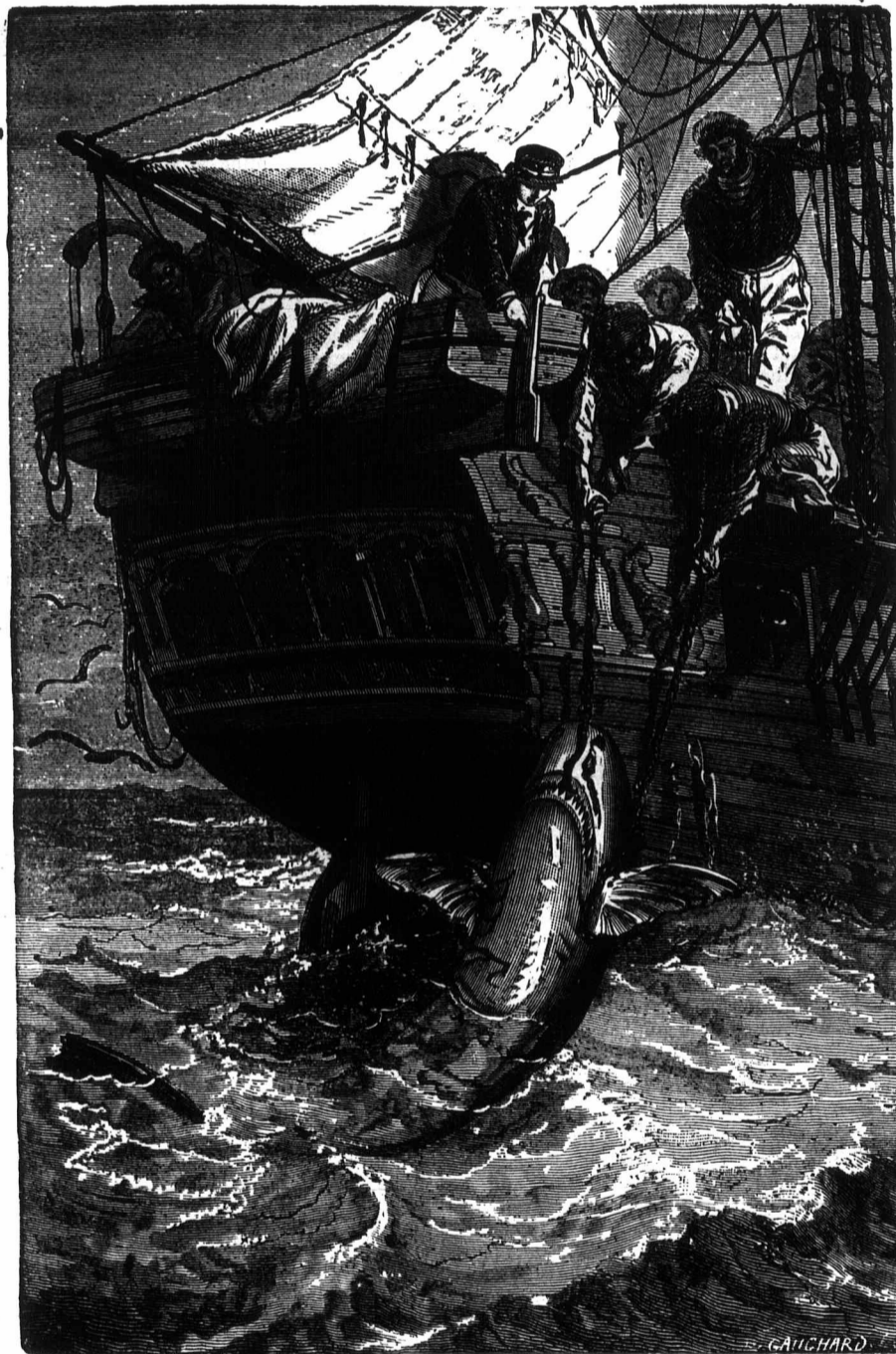
This shows the great difficulty there has been in England for those desiring to come to America to save sufficient to enable them to do so. This man and his family are just the class that are wanted; they are sure to succeed, whereas, those half gentlemen counter-hoppers and city birds, will, with few exceptions, do no good for themselves or Canada.

Another case:

A Mr. Jas. Bell, from Cavan, aged 64, who has a wife and child with him, is going to Omemece, in the County of Victoria where he has four sisters settled; they had written for him to come.

All we would suggest is that the accommodation of the intermediate passengers be improved, as that is the passage that the farmers of Canada are more likely to patronize; a little more attention might be afforded that class of travellers. There is more profit had from them now than from the first class passengers. We did not travel in the intermediate, but we made enquiries of all classes on board.

The greatest pains are taken by the Allan Co. to secure the best men. The sailors feel proud of their Line, and say they are better fed and better treated than on any other Line that runs to Liverpool. This company was unfortunate at first and lost several steamers; latterly they have been very fortunate, not having lost a vessel for nearly two years.



SHARK FISHING.

He did not wish to move, and would not write to them, although they sent letters to him. They sent a person to fetch him, with money to defray his expenses; finally he yielded, and is now on his way there.

The cabin passengers are principally merchants, and military or naval officers, who are travelling for pleasure; one farmer, and very few of other occupations.

We are pleased to hear that the Allan Line is gaining in favor. The ships are strong and comfortable; the last one launched costs £150,000 sterling, or \$750,000. This Canadian route is a much shorter ocean route than any other, and the beauties and sights of the coast from Belle Isle to Quebec are much more pleasant than three days at sea.

Shark Fishing.

During our trip to England we now and then whiled away the time by chatting with the sailors; the above engraving illustrates one of their yarns. Here is Jack's description. One bright morning a shark was observed following in our wake, and we sailors, who are very superstitious, felt that if we did not catch him he would catch some of us, as we think that if a shark follows a vessel, and is not caught, it is a sign that some one on board will die, and thus give him a meal.

We got out our line and baited it with a piece of fat pork, and it was no sooner dropped into the water than Mr. Shark made a grab at it, turning over on his back to catch it, but he caught more than he anticipated, for there was a hook within the meat by means of which he was soon landed on board the vessel.—

**AGRICULTURAL.****GRASSHOPPERS IN MINNESOTA.**

A despatch dated May 27th from St. Paul, Minn., says that Governor Davis, in response to circulars forwarded to different points of the State, has received answers to the effect that large numbers of young grasshoppers are being hatched in the following counties in the southeastern part of the State:—Lyons, Martin, Jackson, Nobles, Watonwan and Cottonwood, all of which have heretofore been among the finest wheat-growing counties on the line of the St. Paul and St. Croix Railway. The reports received are substantially agreed, and it appears from them that the hoppers came last year full-grown from the southwest. In some places there were a few of the eggs hatched last fall, but otherwise the eggs remained in the ground all winter, hatching out early this spring on the light soil with warm exposure, and continuing since to hatch out daily until the ground is covered by them.

It is noticed that on ground which was plowed over they had not yet hatched out, and it is possible the eggs were covered so deep by plowing that they may not hatch out. On their first appearance the young grasshoppers make for the tenderest shoots of grass and the tops of young vegetables, eating everything above ground. Generally the growing grain is not seriously injured by them, though many fields have been stripped bare, but, with favorable rains, these will be likely to grow again.

The insect, which has been noticed as destroying the eggs of the grasshoppers, is not larger than a grain of wheat, and, under the microscope sight, appears to be a spider, with legs and teeth to match. Its instinct is to bore into the ground and destroy the eggs. The grasshopper country is also supplied at this season with immense flocks of pigeons, black birds, etc., which are feeding almost entirely on grasshoppers.

THE CLOVER CROP.

Probably no other crop is so badly managed as the clover crop; none is put in the ground in a more careless manner, and none is used so hardly; for it is pastured in the spring, up to the moment, then cut for hay, and then again for seed, and again pastured in the fall, until winter stops its growth, when it is left to be frozen and thawed and exposed to every change of weather until it is time to plow the sod, or what is left of it, for corn.

It is not at all strange that when this crop is so used its full value is not appreciated, although the fact it survives all this, and finally, in its last stage, helps to make a crop of corn, is not the least of the many proofs we have that its value is greatly underrated. Again, its mismanagement does not stop here, but when it is cut for hay it is very rarely that this is done in such a way as to secure the full value of the crop.

When clover is in full blossom it is at its point of greatest value for feed. It then contains a much greater amount of nutriment, and much less of indigestible matter than when fully ripe.—*N. Y. Times.*

The "Garden" gives the following, which seems more practical than anything we have seen before:—

"Sulphuret of calcium dug in around the roots of vines is considered to have a powerful effect in destroying Phylloxera. This gives rise to a true sulphuric acid, in consequence of the moisture of the soil and the gentle disengagement of carbonic acid. It serves also equally well to destroy caterpillars and other injurious insects which are frequently so difficult to remove from vegetation."

SCOTT WHEAT.—The demand for this wheat was so great last year that we could only supply the first orders, and some were obliged to take only the second quality. We can now supply first quality at \$3 per 100 lbs. We believe it to be the safest and most profitable wheat to sow. Those requiring it should send their orders early, or disappointment both in time of delivery and quality may ensue. Car loads at lower rates. Address Agricultural Emporium, London, Ont.

HEAVY VERSUS LIGHT IMPLEMENTS.

Many people appear to be unaccountably stupid in regard to the most economical and convenient weight of implements and vehicles, and especially the weight of one-horse and two-horse vehicles. A large proportion of the four-wheeled and two-wheeled vehicles in use are sufficiently heavy and strong to bear three times as much, with entire safety, as they usually carry. The two-wheeled coal and dirt carts are often sufficiently heavy for a single horse without any load on them; and the huge four-wheeled express waggons are almost always built sufficiently heavy to carry with safety all that four or six horses ought to draw. There is great need of an improvement in regard to the weight of almost any kind of implements and vehicles. A horse of ordinary size will draw, on a smooth road, one ton anywhere, with ease, besides the vehicle of suitable weight for one animal. In hauling earth of any kind, or stone, one horse would take 2000 pounds with no more fatigue than he now feels when he draws only seven or eight hundred pounds on a large lumbering cart, many of which will weigh from ten to twelve hundred pounds without any load. It is truly surprising that intelligent men do not perceive this fact. By reducing the weight of an implement six hundred pounds, which could often be done with sufficient strength, the team would be able to haul six hundred pounds more of earth or stone at every load by exerting only the same strength. The same principles hold true in the construction of hand tools. A labourer shovelling earth with a shovel only one pound heavier than a neatly made light shovel, will exert strength to no purpose sufficient to throw up one pound of earth at every shovelful, which would amount to several tons in a short period of time. Many excellent teams are well nigh ruined in consequence of a ponderous vehicle, as most teamsters are apt to be governed by the number of pounds that is placed on the vehicle as a load, rather than by the weight of the waggon or cart, and the load in the aggregate. When farmers are hauling material of various kinds, they are not always aware of the unnecessary weight they require their teams to haul to and from the field.

Hay riggings are frequently made more than one hundred pounds heavier than is necessary. If only made as light as consistent strength would admit of, a team might haul one hundred pounds more of hay and grain just as well as to draw the same number of unnecessary pounds of rigging.

Ploughs are frequently made twenty pounds, or even more, heavier than is really essential to secure the necessary strength of materials. Every good ploughman knows that an addition of twenty pounds to a plough that is already as heavy as it ought to be, greatly augments the fatigue of the team, and renders ploughing far more laborious for the ploughman than if his implement were as light as ploughs might be made for ordinary work. Farmers should study the strength of materials for the purpose of ascertaining, as nearly as practicable, how light every implement may be made consistent with strength.—Colorado Agriculturalist.

DEPARTMENT OF AGRICULTURE REPORT, UNITED STATES.

The June report of the Department of Agriculture, concerning the condition of the growing crops, is out quite promptly.

Wheat.

The breadth of wheat, both winter and spring, has been increased. The indicated aggregate increase is 107 per cent.

The reduction of acreage in Vermont and elsewhere in New England, is owing to the lingering of winter in the lap of spring, which caused a portion of the land intended for wheat to be planted in other crops.—The increase of area in the South is due to a realization of the necessity of growing home supplies on the part of a few planters. The remunerative prices of the past year have had a stimulating effect on grain-growing in the West.

The condition of wheat is better than the average of a series of years. In some instances rust has attacked the stalk and destroyed the heads, but generally is confined

to the leaves. In North Carolina depredations of the chinch bug are reported. While the average in Texas is not high, the quantity of wheat will be largely in excess of former supplies, and in some counties the yield informally reported is very high.

In West Virginia, and in all the North-Western and Pacific States, an increased acreage is reported. In West Virginia wheat, in some quarters, stands drought better than any other crop. Several counties anticipate the finest crop for years. In Russell, Ky., rust has spoiled a splendid crop; in some other counties drought has prevented the filling of the grain, but the general condition is 25 per cent. above average. North of the Ohio River the crop was considerably winter killed. The chinch bug is reported as injurious in some counties of Illinois and Wisconsin. The prospect is below average in all these states except Illinois, which reports

Rye.

In most of the states the acreage in winter rye is fully equal to, or surpasses that of last year. The comparative aggregate area is 101.

Oats.

The breadth of oats is increased two per cent. The condition of the crop is slightly below average.

Almost the only variety of oats successfully grown in the South is the "red rust proof," which has been cultivated twenty years in a single locality without rusting.—The testimony is general, almost universal, to its exemption from rust. In a few cases some signs of rust are reported. Drought in May, after long continued rains in April, has been a prominent cause of inferior condition.

in the Old Home, Merrie England. In the green woods and the shady lanes, fragrant with woodbine, and the rich pastures and meadows, what a pleasure to take a summer mooning's ramble with old friends!

SUPERPHOSPHATE.

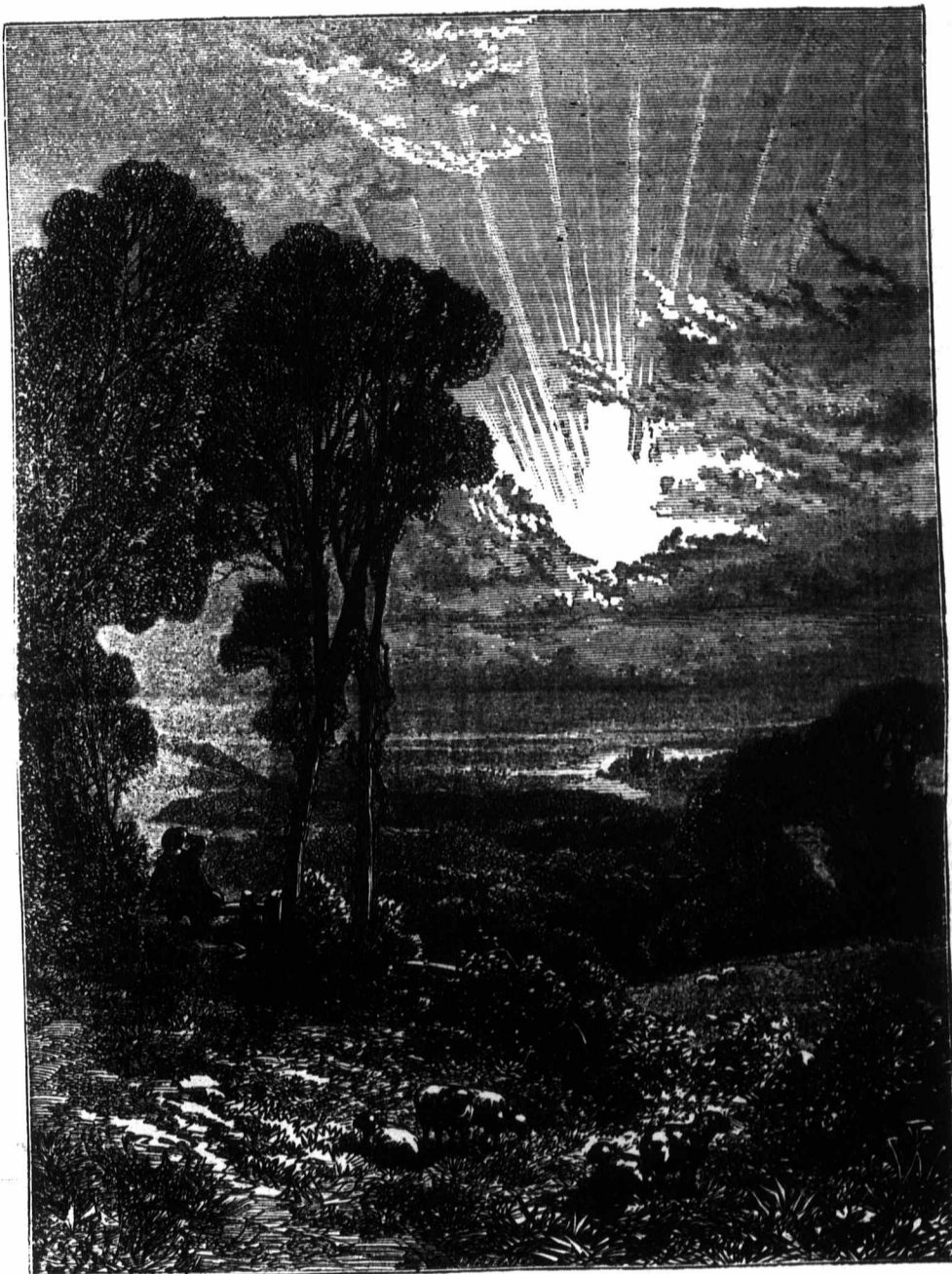
The discovery of the use of superphosphate of bones as a powerful manure was made by Sir James Murray in the year 1809, and he subsequently used it on a large scale on his own farm at Pointfield, near Belfast. In the year 1812 he presented to the Belfast House of Industry, a waggon load of monster "murphies," grown on a field which had been frequently visited by the members of a Belfast Board of Guardians, "to see potatoes growing over vitriolized bones."

One of the collateral advantages of the superphosphate of bones is the rapid decomposition of the bones and their liquefaction which enables the farmer to apply just enough of the manure as is needful for the one crop for which it is intended. Crude bones are many years in giving out their chemical components—in other words, in dissolving, as the following case will show. A friend of mine, in applying the bone manure to a field intended for wheat, found that there would be a considerable quantity more than he expected, and told his foreman to lay on a larger dressing on the rest of the field. The man immediately began to give a double dose, which, as it was impossible to rectify the error, was passed over. Eleven years after this the field was again under wheat for the third time, and having a friend staying with him he took him round his farm. On coming to the field in question, he requested his friend to take particular notice of any difference he saw in the crop. Coming to a certain part of the field—"How is this?" he asked; "the wheat here is several inches higher than the rest of the field." He then told him that eleven years previously he had given that part of the field a double dressing of bone manure, and that the fertilizing materials were not yet exhausted. This is easily accounted for by an analysis as follows:—One pound of bones contains phosphate enough for 23 pounds of wheat. A crop of wheat of 5 qrs. per acre, at 60 lbs. per bushel, weighs 2,400 pounds. Divide this by 23, and it gives rather less than 100 pounds of bone for a crop. Bones were formerly dressed with one ton and a half per acre, which was enough for 42 good crops of wheat if properly managed. Superphosphate of bones has changed all this, and the farmer, by good management, can put any amount of bones on his land he chooses, and in a state prepared for immediate absorption by the crop.—Mark Lane Express.

CAMPOR ON SEEDS.

Some curious and all but forgotten experiments, of much interest to agriculture and gardening, observes a London paper, have lately been revived by a German savant. Very many years ago it was discovered and recorded that water, saturated with camphor, had a remarkable influence upon the germination of seeds.—Like many another useful hint, the

stupid world took no heed of this intimation; but a Berlin Professor came across the record of it, and he appears to have established the fact that a solution of camphor stimulates vegetables as alcohol does animals. He took seeds in various sorts of pulse, some of the samples being three or four years old, and therefore possessing a very slight degree of vitality. He divided these parcels, placing one moiety of them between sheets of blotting paper simply wetted, and the other under strictly similar conditions between sheets soaked in the camphorated water.—In many cases the seeds did not swell at all under the influence of the simple moisture, but in every case they germinated where they were subjected to the camphor solution. The experiment was extended to different kinds of garden seeds, old and new, and always with the same result of showing a singular awakening of dormant vitality and a wonderful quickening of growth. It also



SUNRISE.

Sunrise.

What a glorious hour this? how fragrant the flowers, how fresh the grass borders and every herb and plant in the garden? It seems another spring, with more than a spring's luxuriance. But yesterday at noon every green thing was wilted, and seemed withering away. There was no song from the grove; the cattle found no delight in the pasture, but sought the grateful shade.—Now all is life and animation, and every tree gives forth its song. Let us away to the fields;—there all things are flourishing. It is said the greatest growth of all plants is at night. Let us think differently. When the sun, at his first rising, adds to the refreshing dew the life and light of the early morning, then all vegetation starts forth with a vigor only then experienced. Such are the mornings and such the scenes the Editor of the FARMER'S ADVOCATE has been enjoying

winter wheat 117, and spring wheat 108.—

In some counties of Minnesota there is a tendency to introduce winter wheat. The grasshopper is at work in Steele and Fairbault counties. In Iowa, Missouri and Kansas the chinch bug is threatening extensive injuries; otherwise the crop is generally very promising. The dry weather in some localities has greatly shortened the straw, but the heads were filling rapidly. In Kansas chinch were more destructive on upland crops. The Rappahannock and Fultz wheats are generally well reported. The Touzelle succeeds in some cases; in others it is a complete failure. Dry weather in the fall reduced a superior prospect of winter wheat in Nebraska to about an average. On the Pacific coast there has been a considerable increase in acreage; the condition is above average. In some localities excessive rains have injured the crops, but the conditions of growth are generally favorable.

CULTURAL

IN MINNESOTA.

dated May 27th... Minn., says... Davis, in regulars forwarded... ate, has received... e hatched in the... southeastern part... artin, Jackson, ... tonwood, all of... among the finest... the line of the... lway. The re-ally agreed, and... e hoppers came... e southwest. In... few of the eggs... wise the eggs re-... venter, hatching... e light soil with... ining since to... ound is covered

ound which was... et hatched out, ... were covered so... may not hatch... rance the young... tenderest shoots... ound vegetables, ... ound. Generally... ously injured by... ave been stripped... rains, these will

PROSP.

so badly man-... one is put in the... manner, and none... is pastured in the... then cut for hay, ... d again pastured... tops its growth, ... n and thawed and... of weather until... or what is left of

at when this crop... not appreciated, ... ves all this, and... ps to make a crop... many proofs... reatly underrated. ... at does not stop... or hay it is very... such a way as to... e crop.

lossom it is at its... r feed. It then... amount of nutri-... ndigestible matter... Y. Times.

e following, which... anything we have

ug in around the... to have a powerful... oxera. This gives... d, in consequence of... d the gentle disen-... d. It serves also... terpillars and other... e frequently so dif-... ficult."

demand for this... ast year that we... first orders, and... ke only the second... upply first quality... e believe it to be... rofitable wheat to... should send their... ointment both in... quality may ensue. ... Address Agri... ndon, Ont.

appears from the Professor's researches that the young plants thus set shooting continued to increase with a vigor and vivacity much beyond that of those which were not so treated. On the other hand, when pounded camphor was mixed with the soil, it appeared to exercise a rather bad effect upon seeds. The dose in this latter case was possibly too strong. At all events, there is here a line of inquiry well worth following up by seedsmen and gardeners; and even farmers might try how far wheat and barley would profit from the strange property which seems to be possessed by this drug over the latent life of vegetable germs.

DEEPER CULTIVATION.

More than thirty years of attentive, practical, and theoretical observations have confirmed the views I at first expressed that the land of Britain as a whole is not half farmed, and that its produce and acreable capital might be profitably much more than doubled; and this may be said also of the landowner's investment. I am not so Utopian as to expect the long-established practice and opinions can be suddenly changed, although it would be only reasonable to hope that the marvellous novel conditions affecting agriculture as well as manufactures should greatly modify and alter antique agricultural practice. Agricultural and mechanical science, must, however, ultimately react upon agricultural practice; therefore as well-wishers to their country should support and encourage agricultural agitation. There are certain safe and profitable basis for agricultural investment, which are, as a rule, absent and wanting in agriculture—viz., draining and deeper cultivation. These I proved to my own satisfaction more than thirty years ago, and to these I will add a third, I mean steam power; and that I have used for twenty-six years, and wonder how and why farmers with capital can do without it; but I shall confine my present observations principally to deep cultivation by disturbance of the hitherto unmoved subsoil. The more I prove practically after thirty years' trial, and read or reflect theoretically, the more I become convinced that those that depreciate a deeper disturbance of the soil are doing a great agricultural mischief, preventing improvement and profit. Liebig, who new more of the practice of agriculture than any other man then living, and who, for the first time, laid open the secret of nature's agricultural laws in relation to the soil, the plant, and the food of the plant, gives us in his grand work, *The Natural Laws of Husbandry*, unmistakable reasons for disturbing and aerating the under-soil. P. 9. "The root fibrils will always extend in that direction in which they encounter the least resistance. Of the cereals, wheat, with a comparatively feeble remification of roots in the upper layers of the soil, still forms the strongest roots, which often penetrate several feet down into the subsoil. On the length of roots few observations have been made. In some cases it has been found that lucerne will grow roots 30 feet, rape about five feet, clover above six feet, lupine about 7 feet in length." "A proper knowledge of the radication of plants is the groundwork of agriculture... therefore, to secure a favorable result to his labors, he should prepare the ground in a proper manner for the development of the roots." In the second half of the period of development the roots of the turnip plant having penetrated through the arable surface deep into the subsoil, absorb more potash than in their preceding stage. If we suppose that the absorbing sponges of the root reach the stratum of soil poorer in potash than the upper layer, or not sufficiently rich in that material to yield a daily supply commensurate with the requirements of the plants, at first, indeed, the plant may appear to grow luxuriantly; yet the prospect of an abundant crop will be small, if the supply of the raw material is constantly decreasing, instead of enlarging with the increased size of organs. The vigor with which cereal plants send forth their stalks and side-shoots correspond to the development of the root. Schubert found as many as 11 side-shoots in rye plants, with root 3 to 4 feet long; in others, where the roots measured 1½ to 2½ feet, he found only one or two; and in some, where the roots were but 1½ feet, no side shoots at all." P. 88. "The true art of the practical farmer consists in rightly discriminating the means which must be applied to make the nutritive elements in his field effective, and distinguishing these means from

others which serve to keep up the desirable fertility of the land. He must take the greatest care that the physical condition of his ground be such as to permit the smallest price to reach those places where nutriment is found. The ground must be so cohesive as to prevent the spreading of the roots." P. 89. "All these observations tend to show the great importance of the mechanical disposition which impart fertility to a soil not originally deficient in the means of nourishing plants; and that a comparatively poorer but well tilled soil, if its physical condition is more favorable for the activity and development of the roots, may yield a better harvest than rich land." Combined with deeper cultivation we should have that which facilitates—I mean drainage. Liebig says in his *Natural Laws of Husbandry*, p. 290, "The influence of a proper physical condition of the soil upon the produce can hardly be more convincingly proved than by the facts which agriculture has derived from the drainage of land, under which we comprise the removal of the subsoil water to a great depth, and the quicker withdrawal from the arable of the portion circulating in it. A great many fields, unsuited by their constant humidity for the cultivation of cereal plants and the superior kinds of forage grasses, have been reclaimed by drainage, and made it fit to produce food for man and beast. When the farmer, by means of drainage, keeps within bounds the amount of water in his fields, he controls its injurious influence at all seasons; and by the speedier removal of the water, which soaks the earth and destroys its porosity, a path is open for the air to reach the deeper layers of the ground, and to exercise upon these the same beneficial influence as upon the surface soil." My 20 odd years as a practical farmer have convinced me that the profit of farming, especially on soils like mine, naturally wretchedly poor, depends a great degree on draining, a deep disturbance and manuring of the soil and subsoil, plenty of fat stock manure, no weeds, and not too much seed—combined with the absence of trees and fences, and with the presence of a steam engine.—*Cor. Mark Lane Express*

TREATING SANDY SOIL.

My observation of the treatment of sandy soil has shown me that it can be successfully done, and without any unusual efforts. I myself have treated such land, and seen it done to a considerable extent on the borders of the North Woods, particularly on the John Brown Tract, where the soil is of a yellow or grayish sandy nature, appearing to the view to be all sand. Yet the forests that have grown upon it show that there is something more than sand. They have furnished the soil with some humus; and there is some clay. Your correspondent's (R. H.) land was probably of a similar nature, containing some vegetable and other material necessary to grow, else it could not have grown "scrub oak" and "pine."

Such soil is treated successfully simply by the common means of improvement, barnyard manure, green crops and other fertilizers. There is a sufficient clay with the sand for a basis. The manure applied acts chemically upon the sand, releasing plant food, besides pushing forward the crop. The main point is the mode of application:—in no case plow under the manure. The point is to keep it where the plant is, which on a sandy soil, being loose and porous, is difficult. If not taken up by the plant in a given time, it (in its downward course) will be lost. It is folly then to put it down at once by the plow, which is aiding its disappearance. Neither will it do to apply it in the fall, particularly if done early, and leave there till spring, when the crop is sown. Some of the strength will wash down and get beyond the reach of the roots; the latter growth will have but little left to benefit it. If a heavy coat of manure is given, there will be more growth, also more loss. The point is to apply the manure when the grain is sown, mixing manure, seed and soil with the harrow being preferable.

To seed to grass or clover, the same rule holds. It will not do so well as to apply the manure in the fall, either with the wheat crop sown, or for land, than prepared and sown in the spring. Timothy may be sown with wheat if put in early, or better in the spring as early as the manure can be applied and the land sown, to be harrowed in high ly. Never omit to cover seed in sandy soil. The seeding started, it can be kept growing

by early applications of top-dressing till a good sod is established. Sheep will help to do this. The sod turned down lightly, not exceeding three inches or three and a half being better—a crop of grain can be raised, with or without additional manure. But the year following manure must be added without grain is sown on the land or put to grass or clover, light plowing being continued so as to keep the fertility at the surface. It must be kept there as much as possible always in a sandy soil. The principle is too obvious to be misunderstood. And sod is an excellent material for this being well disturbed through the surface soil, and held there longer by the time occupied in its decomposition. For this reason, also, raw manure has an advantage, letting loose gradually its substance.

In this way the land can be worked right along profitably, and improved all the while, with but little of the fertility lost that is applied. A heavy dressing would lose more of the manure. Hence light and frequent application is the true theory. I find it also the practice in sections I have visited where the land is leachy. Parts of Steuben county N. Y., are of this character, where I first got my ideas of the treatment of such soil.

But the attention to the land must not be remitted, else it will soon go back to its original state, when trees or deep-rooting plants alone can retain a footing. It is however easy to keep up the land after the start is well made. All that is necessary is to cultivate shallow, and feed the soil at the surface. The advantage of such land is, besides its perfect drainage, that it can be worked early, thus getting the benefit of the winter moisture, and of an early growth, so as to shade the ground, and thus protect it from the hot sun and the drying winds, which otherwise would deprive it readily of its moisture, it being less capable of withstanding drouth than other land. I have been much gratified at the sight of land in the town of Salisbury, and bordering on the North Woods, where crops of grain, grass and clover rose dark and thick, and on soil that no many years ago was barren. It is made really profitable, and continuously so. There is another advantage that may be realized in the improvement of light sandy soil that may be mentioned here. It is the use of compost, in which a large ingredient is soil, and that soil clay. If clay is accessible, it may be used largely—three or four or more parts to one of manure. This will retain all the strength of the manure, make a superior dressing to mix with the topsoil and hold the fertility. A few heavy dressings will give permanence to the soil, and in the long run it will be found to pay.—*Country Gentleman*.

VALUE OF MANURE.

The farmers of this country need many lessons upon this subject; and we are always glad to here of agricultural clubs discussing it. It will be found that in almost every instance of a farmer who has become forehanded from good husbandry, the has been a liberal user of manure. John Johnstone, who is perhaps, the best wheat farmer in the State, not long since, when asked in what his success chiefly lay, said: "Manure and plenty of it." He perhaps, nearer than other men, has applied English practice in American soil, with only such modifications as were necessary in the changed circumstances. The *Country Gentleman* relates a recent conversation in which Mr. Johnstone mentions purchasing 50 acres of a neighbor who had so little faith in manure, that a ten year product lay in the barn-yard, and the seller remarked that manure did no good on his land. But Mr. J. said "the manure paid every cent for the farm." On that same fifty acres, in a bad season, when the average crop of the neighborhood was not more than five bushels, he raised on a large field twenty-nine bushels per acre.

The Germans made the production of manure the first necessity of the farm, and they are able to keep as much stock upon twenty acres as we do upon 100 acres. It is with manure as with feeding, the pay is best with most liberal allowance. The soil of our oldest State is by no means exhausted. It has been impoverished only in a few elements; and these elements are all represented in barn-yard manure. The barn-yard manure contains the residuum of all the elements taken from the soil in the crop harvest. The true policy, then, is to keep as much stock as possible and carefully husband the manure for replenishing the soil. This has

been the plan pursued by Mr. Johnstone. He has regarded the manure so valuable that he could afford to feed all his coarse grain, and buy largely of corn and oil-meal to increase the value of the pile. He goes on the plan of full seeding and full manuring. The above illustration is as strong as any we have ever remembered; when he could take the pile of neglected manure upon a farm, and by its effects upon crops, on the same farm, produce a surplus sufficient to pay the market value of the land.

Thorough Culture.

But the greatest effect can only be obtained when manure and thorough culture go together. Mr. Johnstone is also a most skilful manipulator of the soil. If the soil is poorly worked, the best manure cannot be distributed, and therefore the crop cannot use it. Underdraining of heavy soil is a part of thorough culture. Without the water can pass off readily, the soil will remain cold and unsuitable for the growth of plants. The best possible manipulation of soil is thrown away without it is sufficiently dry to pulverize. So manure will have little effect on an adhesive soil, which is permanently saturated with water. One great disadvantage that American farmers labor under is want of capital to thoroughly till and manure their excess of acres. They usually own and try to work two acres where they are only able to work and manure one. The reforms needed are more manure and better culture.—*Live Stock Journal*.

TO IMPROVE THE QUALITY OF HAY.

It is a noticeable fact that the hay crop as generally stated is far behind what it should be in point of quality. If soil is so ill-adapted to grass that a heavy yield cannot be obtained, there is no excuse for having an inferior grade. An exchange, and we regret to be unable to say what one, gives the following on the subject:—

If his land is not naturally fitted for grass, there are two ways in either of which the farmer may succeed in obtaining good results. The first and, as far as the present results is concerned, the easiest way for him is to obtain the seed of some of the varieties of grass which, while making first rate hay, are also adapted to his land may be wet and cold, filled with bog or sedge grass of miserable quality.

Now, if the owner will turn over the turf and let it rot (meanwhile obtaining a crop of corn, oats, or some other grain), and then seed down with Alsike clover, red top or even fowl meadow grass, he will not only greatly improve the quality of his hay but also increase the quantity. Even timothy can be sown on wet land, and for a few years produce good crops. The tendency is, of course, for the old wild grass to supplant the improved kinds, although the clover, being natural for wet lands, is said to hold his own a great while even in cold and poor land. If this course is pursued it is probable that the process will have to be repeated every four or five years in order to maintain a first rate quality of hay.

This system, as we said above, is the easiest and, as far as present results are concerned, without any regard to future comfort or profit, the most profitable method to pursue. But if the farmer looks to the future, as all men ought, and endeavor to provide not only for the present but also to prepare for the future, he naturally desires some method of improvement which shall be successful in its present results, and also be a permanent value to himself and to his farm. This method is found in a system of thorough drainage and high manuring. It is objected that these things are too expensive? Remember that everything of value is expensive. It costs to improve it, but the improvement is a perpetual benefit. Every year it pays something towards the expense. Suppose a case:

A farmer has a meadow containing ten acres of good land with the exception of being cold and wet. Because it is wet it is cold, and because it is wet and cold both, it will produce only a very inferior quality of hay. It is not suitable for other crops. All that he does with the land is to mow it once a year. He obtains about a ton of hay per acre and when well cured it is worth about ten dollars. The land he calls worth about fifty dollars per acre. Now let him dig large ditches to take off the surplus water; let him expend in this way two hundred dollars on the lot.

The dirt thrown out of the ditches will be worth at least fifty dollars—probably

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more—to put into the barnyard for compost. This will leave one hundred and fifty dollars as the cost of the improvement of the ten acres. The land will now be in condition to bear grass or any hoed crop, and will be worth one hundred dollars per acre. It will produce from one to two tons of hay per acre, and the labor of obtaining the crop will be much less than it was before the land was drained. Now apply manure, and large vegetable crops will be obtained. The increased value of the crops will in two or three years pay for all the work, while the land will be worth double the price it would sell for before it was improved.—Ohio Farmer.

HOW TO APPLY MANURE.

Observation and experience should determine the mind of the farmer in regard to the best plan of applying manure, whether to plow it under deep, or leave it on the surface. The advocates of surface manuring speak against manure being turned over too deep, while the advocates of deep manuring charge surface manuring with fertilizing the atmosphere.

But there is a medium course, and each theory is supported by plausible arguments. However, there are true philosophical principles against burying manure too deeply in the earth. The loss of the saline matter of the manure, by solution and infiltration, will be great in porous soil, and the evaporation, to which so much loss is attributed by those holding opinions adverse to surface manuring, would be only a small drop in a bucket compared to the loss by salination. In porous soils it is well known that manure will penetrate to a great depth, and much animal matter may descend beyond the reach of surface growing plants.

Humus is formed by the decay and decomposition of vegetable matter, which, in the philosophy of nature, is manipulated on the surface; hence, the rule in the application of manure should be taken from the indications of nature and science. The decay and consumption of one crop for the nourishment of another, the droppings of animals, and the defoliation of trees and plants, are all left on the surface.

This seems to contradict the idea of loss by evaporation. It will therefore be best to adopt the plan of deep cultivation, but keep the manure and vegetable matter as near the surface as possible. There is always some loss by evaporation, but much less than by infiltration. It should be a leading idea with farmers to be close observers of such natural operations, in the growth of spontaneous and cultivated vegetation, and accommodate their practice so as to imitate nature as nearly as possible.—Agricola, in Journal of the Farm.

THE BIRDS THE FARMERS' BEST FRIENDS.

More than the soil is included in the farmer's realm. He has dominion, also, over the birds of the air. While they cheer his labors with beauty and song, they reduce the excess of insect life, which would otherwise become pestiferous in its great profusion. The disturbance of the proper balance between the feathered and insect tribes is fraught with incalculable mischief, affecting the food, the health, and the life of man. The weakening of a single link in the chain of being is often productive of great loss.

It is estimated that there are thirty species of insects injurious to garden vegetables; to the apple tree, seventy-five species; to the shade trees, one hundred species; to wheat and to other grains, fifty species. This, Mr. Palmer maintains, "is the result of our improvidence. It is," he says, "because man has destroyed their natural enemies, that insects have become a pest, and they will cease to trouble him only in proportion as he shall restore the balance, of which nature shows the necessity."

That the loss of this balance is owing in a great measure to the destruction of birds, is patent to every observer. Swallows feed upon flies, grasshoppers, butterflies and beetles. Bradley says that a pair of sparrows will destroy 3,360 caterpillars for a week's family supplies. The fly-catchers do not lie in wait, but hunt for their prey, follow the plow for insects, glean the flies that are found molesting cattle, and swarms that breed on the margin of stagnant water.

Wilson says a blackbird will destroy fifty grubs daily; even in winter its food is partly chrysalides and spiders. A family of plovers will destroy myriads of grasshoppers, taking

them in at an early stage of their existence. Woodpeckers are constantly seeking insects in the bark of trees. Wrens, creepers and tom-tits hop from branch to branch, in search of their favorite food. The robin and red-winged blackbird obtain their food almost exclusively from the ground; jays, crows, night-hawks and whip-poor-wills destroy immense quantities of beetles—an exceedingly prolific race. The golden robin and black-billed cuckoo feed on the tent caterpillar; they can with justice be called great friends of the farmer, who should take them under his protection instead of destroying them at every opportunity, as many do.—The flicker or spotted woodpecker has actually been seen to probe the gummy hiding places of the borer in the trunk and surface roots of the peach, and bring forth and destroy the pest.

While the farmer suspends his operations in winter, his entomological assistant, the chickadee, heedless of the cold, prospects in his orchard for insects in every crevice of the bark, and the creeper accompanying him further investigates the hidden habitations of worms.

Such instances of special utility might be multiplied, but it is only designed in this article to briefly show the practical relations of birds with man, and call the attention of farmers to a further study of their habits and utility, as important items of domestic economy. Better provisions should be made for their protection, first in the list of which laws should be enacted with stringent provisions, prohibiting the killing of song birds at any time, except by naturalists for scientific purposes; and restricting the killing of game birds to such seasons as will not interfere with their propagation or with their coming into market in an edible condition.

Laws already exist looking to these objects, but in many cases are defective in the time covered by the prohibition, in the provisions affecting the certainty of their execution, in the inadequacy of their penalties, and in other essential respects. Nor will laws of one State answer as models for another of a different climate, owing to the difference in the time of opening of the bird season, time of pairing, etc.

They should be framed by practical, observant men, with the advice of the wisest naturalists; and, when enacted, public opinion should compel their strictest and most impartial execution.

While we try to prevent their destruction the conditions favorable to their increase should be promoted. Actual facilities for shelter and nesting should be afforded, their accustomed food and haunts preserved, and practical invitations extended to the most useful to settle on the homestead near the farm buildings. Those that are wont to occupy our gardens and fields, as the wren, yellowbird, robin, bluebird, and others should be provided with nesting boxes and trees.

Gardens have often been preserved from the ravages of insects by placing bird houses and nesting places within their limits, when neighboring gardens have been destroyed.—In cherry or berry time some little device may be used to keep them away, such as tying pieces of bright tin or white rags among the branches, when they are inclined to take too much toll for their services. With cultivation insects increase, and so do birds, especially the insectivorous varieties, as the wren, blue bird and swallow, if fairly dealt with.

I think that ornithological notes from farmers and others in different sections, and diffused through widely circulated mediums such as the Western Rural, would do much to increase an interest on this subject, if only to induce an interest in considering the habits and utility of birds in their respective sections as insect destroyers. This would promote observation in this field, as well as entomology, both of which farmers should have a better knowledge of.—C. W. H. in Western Rural.

CORN.

Although the corn crop succeeds remarkably well on the intervals and uplands of St. John River, as well as on light soils, away from the influence of the Bay of Fundy fogs, yet it is doubtful whether it is worth while in New Brunswick to devote more land to it than will supply green corn for family use or for sale during the season. To be sure, the pumpkin crop is valuable, and the pies made on the pumpkin basis with the proper "fixings," are a peculiar and very desirable feature of the dinner

table during the autumn months, yet a heap of straw manure piled up to become fit for use in the fall will produce plenty for domestic purposes at comparatively no expense. Corn is a gross feeder requiring more stimulating manure than any of our crops—nothing but that from the hog pens will suffice for its wants. To supply a luxury to townspeople, its cultivation, like that of strawberries, will be governed by supply and demand, but as an article of food it does not compare with buckwheat. The flour of both grains are only relished when made into cakes or fritters, and eaten warm. We have a great deal of lead in New Brunswick, that appears to be as well adapted for raising buckwheat as other soils in portions of the Dominion are for raising wheat. A slight top dressing of 200 lbs; weight of some of the commercial manures will ensure a good crop of the latter. While land to give corn requires, as we heard a farmer once say, to be stuffed with dung, and the best that can be made at that.

Our climate appears to be peculiarly suited to raising buckwheat and the labor required to produce 100 bushels of either is so infinitely in favor of buckwheat, and its adaptedness for feeding purposes so generally, that there can be no comparison made in the utility of the two grains.—Colonial Farmer.

WASTEFULNESS ON THE FARM.

Few farmers can be open knowingly to the charge of wastefulness. The majority are supposed to err in the other direction. At the same time there can be no question that the annual loss and waste of seed by the injudicious sowing and the want of complete preparation of land for a proper seed bed is something enormous. Nor is it in one direction alone or in reference to any one variety of seed. It is too common. But we wish to speak more particularly with regard to the loss of seed in the methods of seeding down land to grass.

Every farmer knows that losses often occur on newly seeded lands from a failure of the seed "to catch." It is worth while to inquire whether this is owing to influences which are inevitable, such as severe droughts occurring year after year, or to the mistakes so often made in the methods of seeding. Is nature to blame or are we ourselves responsible for it? Let us look at it a moment—Probably in a majority of cases throughout New England the old methods prevail of seeding in the spring with grain. We do not overlook the fact that many intelligent and progressive farmers have adopted the practice of fall seeding, and like it, laying down land without grain. But taking the country over, the old practice still remains.

Now let us see what is the effect of this laying down in the spring with grain. There is no kind of grain that does not draw heavily on the elements of plant food in the soil. The soluble materials that enter so readily into the circulation and growth of plants, helping to build up their structure, are seized upon first and absorbed, leaving the soil in a reduced condition. No matter what the particular kind of grain may be, if it requires materials similar to those needed by the grasses, the effect on the soil, so far as its relation to the grasses is concerned, will be the same.

What is the result? The grasses are deprived of the food essential to their growth. The root is feeble and sickly. The growth of the stalk corresponds to the size and vitality of the root, and this is so jostled and crowded and robbed by the stronger and more vigorous roots of the grain that it cannot and does not thrive as it would if it had the free use and the sole possession of the land. In these conditions a very large part of the seed will die from suffocation and starvation almost as soon as it germinates. The portion which survives this severe ordeal will grow weak, feeble and puny in the shade of the overtopping grain, and it may fight its way along until the grain is cut in the heat of a July sun, and its last end will be worse than the first. It cannot stand the sudden and severe shock, which the cutting of the grain and the removal of the shade bring to it. If it is dry and hot the chances of life are small, and in point of fact a large part of the plants that survive till the grain is cut, never live to attain maturity.

Now this is just what takes place where the small and tender grass seed is sown along with any grain whatever. Much of it

dies immediately after germination from starvation and want of room, and what lives in the shade is so enfeebled that it dies on exposure to the sun. There is undoubtedly a great waste of seed, let the season be what it will, and however much moisture there may be at the time of cutting the grain, but when this happens in a dry and hot time, the chances of an entire failure are very great. Sowing grain and grass seed together is very much like setting out an orchard or a nursery of tender trees and shrubs in the midst of a pine forest; the pines can stand it, perhaps, but it is hard on the shrubs.

It ought never to be forgotten that grass or hay is the one thing indispensable to success in farming in this climate. The grass crop must always take the lead in point of importance. At the same time grass seed is expensive. It is not secured and saved in any considerable quantity for sale in the market, in this part of the country. It is, therefore, clearly for the farmer's interest, after he has bought and paid a high price for it, to manage so as to save and economize it, by giving it the best possible chance of life and growth. But the sowing with grain of any kind, especially with oats, is giving it the least chance in our power. It is choking it at birth, and it involves the greatest waste and consequent loss of seed and of the cost of preparation and sowing, a loss which amounts to something like half a million of dollars a year, in this State alone. Isn't that sum worth saving?

Seeding in August or early in September with grass alone, would save a very large part of this loss, especially if the practice of applying a liberal dressing of manure on or near the surface to which the seed is applied, were adopted. A grain crop along with or immediately preceding a grass crop, reduces the capacity of the soil to an extent greater than is generally supposed.

CONTINENTAL CORRESPONDENCE.

PARIS, June 13.

Dr. Bibard relates his observations on the growth and development of wheat. Either a very low temperature, or a frost succeeding humidity can endanger winter wheat, by upheaving the soil and exposing the roots. At the close of February, when the leaves began to develop, he examined the stem and found that it consisted of five tubes, one within the other like a telescope; a month later the rudimentary ear was visible; a month after the spikelets, and even the flower were discernible. Many farmers in France graze stock on their winter wheat in early spring, and often complain that the practice is sometimes injurious, causing the plant to run only to leaf. May this not be owing to the grazing taking place at too late a period, and when the rudimentary ear has been formed? In June, when the temperature increases, the floral organs develop rapidly; the stamens become yellow, the pistils white, and all enclosed between the tenderness of valves. A temperature of 70° is necessary for the process of fecundation, which is effected in a moment; in the course of three minutes afterwards the valves of the spikelets open, reject their stamina, and then permanently reclosed. When the fecundation, owing to a low temperature does not take place, the spikelet retains not the less its round form, but yields to the pressure of the finger; it is empty, hence one of the causes of a deficient harvest. Before fecundation, no starch is perceptible in the embryo, but immediately after that operation, the iodine test reveals the presence of starch. Ten days suffice to shape when fecundation has taken place, the membrane of the grain which ultimately forms bran; this membrane or case rapidly becomes filled with a solution of starch, and requires a good deal of water to continue its work of development; should drouth issue, this membrane is not well filled, it is thin and shriveled, hence, a second cause of deficient harvest, to which a third may be added, the abortion of two or more grains at the best of the ear—the latter generally possessing from 21 to 27 spikelets.

Nearly all our cultivated plants seem deemed to pass through a series of maladies. In their wild state they are not so affected, at least we do not perceive such. Is it that culture, greater being well being in the conditions of their life, leaves them more exposed to enemies, that the more we care for them the less they appear to depend on their own natural powers of resistance?



MINNIE MAY'S

DEPARTMENT.

Oakland Farm,
May, 1874.CULTIVATION OF
FLOWERS.

Dear Minnie May,—

I think that a few leisure hours may be spent very agreeably and very healthfully in the cultivation of flowers—that we may combine the ornamental with the useful.—Flowers, of all things, are the most innocently simple and most superbly complete objects of study. Flowers unceasingly expand to heaven their grateful odors, and to man their cheerful looks; they are patrons of human joy, soothers of human sorrow, fit emblems of the victor's triumphs and of the young bride's blushes. Flowers are in the volume of nature what the expression "God is love" is in Revelations. What a desolate place would be the world without a flower! It would be a face without a smile, a feast without a welcome.

"I deem it not an idle task

These lovely flowers to rear,
That spread their arms as they would ask
If sun and dew are here;
For simple wants alone are their's,
The pure and common too—
The beauty of refreshing airs,
The gift of liquid dew."

How much flowers resemble the young heart in its bright morning, before it has showed the foliage of its sinless years. A tradition of them tells us they were once like youth, in this: that they loved and talked, and had passions like ours. How often and how fondly the poet revels in the field of flowers. Do they not talk to him? Who has ever heard the soft, low whisper of the green leaves and bright flowers on a spring morning, and did not feel gladness in his heart? Like beauty in the human form, flowers hint and foreshadow relations of transcendent delicacy and sweetness, and point to the beautiful and unattainable. From the garden favorite to the dainty wild flower of the mountain, all have an unexpressible charm, an unapproachable beauty. How sweetly and instructively the flower bows its head to the breath of night or the rude storm; thus the heart learns to bring a holier offering to the shrine of all good.

We hope our fair friends will not overlook the delightful employment of the cultivation of flowers. Every one may have a few, and when the taste is once acquired, it will not readily be relinquished. A woman destitute of the love of flowers seems to us a mistake of nature. The delicate and the beautiful should have sympathy with all in nature that possess the same qualities. The time spent in the cultivation of flowers is not wasted. They contribute to our pleasure; they add to our knowledge of nature; they unfold to us the beautiful, and tend to elevate the mind.

"They in dewy splendor, weep without woe, and blush without crime."

Although every part of a plant offers an interesting subject for study, the beauty of the blossom seems, by association, to heighten the pleasure of scientific research.

Flowers are indeed lovely; yet they are destined for a higher object than a short-lived admiration, for to them is assigned the important office of producing and nourishing the fruit. Like youthful beauty, they are fading and transient; and may our youth so improve the bloom of life that, when youth and beauty shall have faded away, their minds may exhibit that fruit which it is the important business of the season of youth to nurture and mature.

With most people the fuchsia is a favorite plant, and when fashioned in the shape of a tree, we venture to say will not lose any of its attractions. The mode of propagating and training is well understood. In the fall take cuttings from the old plants, previous to throwing them away, and plant them in well-drained, small-sized pots, filled with sand and loam, filling a pot of a sort, and

place them in a close frame until rooted, when they should be potted off separately into No. 1 pots, and kept in that sized pot until side shoots make their appearance, when they may be shifted into a size larger pot, with loose, rich earth—rich it must be, as the object is to have a very strong and rapid growth. They must be frequently shifted into larger pots until the eleven-inch size is attained, which ought to suffice for a plant of any reasonable size. The side branches should be pinched again and again, until you have a compact, bushy plant, when they may be suffered to grow and flower at random.

AMMONIA FOR VERBENAS.

Sulphate of ammonia is an excellent manurial liquid to apply to verbenas and other flowers, giving to the foliage a dark green, luxuriant and healthy appearance. It is economical, clean and easily applied. Prepare it in the evening before using, by dissolving one ounce of ammonia in two gallons of water. It may be applied with safety about once a week.

Yours truly,
CELESTA HEACOCK.

TO PICKLE GREEN CUCUMBERS.

Take small ones of a uniform size, wash, put in a porcelain kettle, cover with cold water, add a little salt; set it on the stove, let it heat gradually, and boil five minutes; then drain off the water; add good vinegar; to one gallon of vinegar add one cup of molasses, one tablespoonful cloves, do. cinnamon; let boil five minutes; remove to an earthen or stone dish; pour over them the hot vinegar; cover tight; when cold they are ready for use. I never use any acids, or cook in brass to make them look green, considering both injurious to the health.

When we prepare them for the winter, I wash and scald my barrel to make it perfectly clean, cover the bottom with salt, wash the cucumbers in plenty of cold water, lay in a layer of cucumbers, sprinkle over with salt, and so continue putting in alternate layers of cucumbers and salt each time of putting into the barrel; cover with cold water, laying on a flat stone to keep them under water; if they are allowed to come to the top of the brine, thereby being exposed to the air, they will rot. These will keep perfectly for one, two or three years, if desired.

When wanted for use, soak in cold water, changing every six hours; keep covered while freshening, as the light has a tendency to fade them; when the salt is all drawn out, prepare as green cucumbers, except to cook them longer.

TO POACH EGGS.

Have a pan half full of boiling water, break into it as many fresh eggs as will lie side by side without touching. Let them remain until the whites are well set. Use a perforated skimmer in taking them up.

TO SCRAMBLE EGGS.

Put a tea-cup of sweet milk in a pan, rub a teaspoonful of flour into a tablespoonful of butter. Add this to the milk; salt to taste. Beat half a dozen eggs light; stir to the milk; when the whites are well set, pour over buttered toast. Serve hot.

SOFT GINGERBREAD.

One cup butter, one cup molasses, one cup sugar, one cup sour or buttermilk, one teaspoonful soda dissolved in boiling water, one tablespoonful ginger, one teaspoonful cinnamon, two eggs, about five cups of flour; work in four cups first, and then add cautiously. Stir butter, sugar, molasses and spice together in a light cream, and set them to slightly warm; beat the eggs; add the milk to the warm mixture, then the eggs, soda, and lastly the flour; beat very hard. Half a pound of raisins, cut, will improve this excellent gingerbread. Flour them well before putting them in.

COCHINEAL COLORING.

The following is a good recipe:

Cochineal, alum, cream tartar, carb. potassa, each three drachms; water, eight oz. Rub the cochineal, alum and cream tartar with eight oz. of boiling water, and when cold, gradually add carb. potassa and strain; pour water on the strainer sufficient to measure eight fluid ounces.

TO PRESERVE FRUIT JELLIES FROM MOULD.

Cover the surface one-fourth of an inch deep with fine pulverized loaf sugar. When thus protected the jellies will keep for years in good condition, and free from mouldiness.

BOILING CABBAGE DEODORIZED.

Throw a few pieces of charcoal into the pot where meats or strong-odored vegetables are boiling, and there will be less complaint "up stairs."

RICE-GEMS.

Soak a cup of cold boiled rice over night in a pint and a half of milk (or water.)—Stir into this enough Graham flour to make a rather stiff batter, and bake in gem-pans.

ENGLISH COOKIES.

One cup of raisins chopped, 1 cup of brown sugar, $\frac{1}{2}$ cup of butter, 1 egg, 2 tablespoons of sour cream, $\frac{1}{4}$ teaspoon soda, cloves, cinnamon and nutmeg.

Dear Minnie May,—

Here are some very good recipes, well worthy of your column:

TO STARCH CUFFS AND COLLARS.

It will make them look as glossy as when first bought. Add to the starch a little gum arabic dissolved in warm water. Iron wet, with a cloth over them. To prevent the iron from sticking, stir a little salt in the starch while hot.

LEMON PIE.

Two teaspoonfuls of flour and one of butter, rubbed together; one cup of sugar, one egg, one tablespoonful of water, and the juice and rind of one lemon. This will make the inside of one pie. Bake in a crust of pastry, either barred across the top or with plain cover.

RUSKS.

Two teacups of sugar, two-thirds of a cup of butter, two eggs. Beat these well together; add one pint of sweet milk and one of good lively yeast, and flour sufficient to make a soft sponge. Set it where it will be warm. Next morning knead in more flour, and let it rise again; then mould into biscuits, and when light bake, them in a moderate oven.

HATTIE HAVILAND.

RENEWING MAROON COLORS ON WOOL.

Wash the goods in very weak lye; then rinse thoroughly in clear water; thus you have a beautiful, even color, although your goods may have been much faded and stained. Though the color thus obtained may not be the exact shade as when new, it is, however, a very pretty one. This may be new to others, as it was to me until accident led me to try the experiment. I have now tested it thoroughly, and feel so much pleased with the result that I send it for publication, hoping that it may be of use to your fair readers. The above will not answer for other than all woolen goods of a maroon color.

To make Water-Proof Cloth out of thick ducking, the following French recipe is given:

Take two pounds four ounces of alum, and dissolve it in ten gallons of water. In like manner dissolve the same quantity of sugar of lead in a similar quantity of water, and mix the two together. They form a precipitate of the sulphur of lead. The clear liquor is now withdrawn, and the cloth immersed one hour in the solution, when it is taken out and dried in the shade, washed in clean water and dried again.

YEAST.

A Minnesota housekeeper furnishes the N. Y. Tribune a recipe, which she says makes the best yeast known to civilized women.—She has kept it three months in the hottest weather and much longer in cool weather, and never had any sour. The flour should be thoroughly dried by the fire before being made into sponge, an important item of which many young housekeepers are ignorant. The sponge should be set at noon, mixed at night and moulded next morning. Stirring the sponge after it begins to ferment makes the bread white. Now for the recipe:

One quart of hops put lightly in the cup, one quart of potatoes pared and sliced, one pint of corn browned like coffee; put the hops in a small bag, add three quarts of boiling water; boil two hours. Strain through a colander, add one cup of white sugar, half a cup of salt, and water to make five quarts of the mixture. When lukewarm, add one pint of the same yeast to ferment it. If that is not at hand, use potato yeast without meal or flour, as that might sour after a while. Half a cup is enough for a baking, large or small. The yeast must be made in tin or porcelain. Let it stand 24 hours in a warm room, then bottle or can tightly and keep in a cool cellar. Half the ingredients will do for a small family.

VOICES OF SPRING.

How sonorous the voices of spring, proceeding from every living thing in the air, and among the reeds of the brook. There is an old bullfrog on the margin of the stream, with one leg in the water by way of a cooler. How he thrums away on his bass viol—"thung-thung-thung-thung-pout-chong!" That little frog opposite plays the treble to a charm, without scarce opening her mouth: "te-weet-te-weet-hirr-irr-te-weet-gosh!"—and down she darts into the water, her dainty little foot terribly mangled by a stone from some cruel boy; but, boy, this is wrong. And there's the old leader—that "green-eyed monster" dressed in yellow breeches, with a white sash round him. Hear him as he stands up so majestically against that reed—"Paddy got droonk-Paddy got droonk-oonk-unk," and down he goes to wet his whistle.

Then flutters a chanting chorister overhead, calling upon his tribe to go and watch their sick mates: "Bobolink-bobolink-stingy; go and see Miss Philesey-Philesey-so sweet-sweet; she'll die soon—oh! dear." "Pshaw-pshaw-chuck" thrills the thrasher. "Miew-miew-miew" squeaks the cat-bird. "Who-whip-poor-will," cries one; "Katy-did, Katy-did" thrills another. "Ill come and see—I will—I will—will" sings the yellow bird.

And so sing they all in their unwritten music, without, perhaps, a discordant note, except from some unsoaked bullfrog, who has lain so long out of the water that his pipes are out of tune. A superannuated old mare, who was quietly nibbling the grass nearby, is so much affected by this concert of comical sounds, that she is forced to throw up her head and gallop off a dozen or twenty yards to keep from bursting into a horse laugh.

Goderich, July 7th, 1874.

Dear Minnie May,—

They are talking strongly in this township of starting a Grange, and they want me to join it. What shall I do? Are you a Granger? If so, why so? And if not, why not? Pardon me for being so inquisitive, but there are a great many farmers' wives and daughters who believe that you are working for their benefit, and therefore wish to follow your advice and example.

Your friend,

MRS. ADDIE H. MC—

In reply to Mrs. Mc— and other inquirers, I have much pleasure in saying that I am a Granger. My reasons for being one are: 1st—I believe that they are going to do a great good to the farmers, their wives and daughters. 2nd—Because I wish to receive the advantages of buying what I want at the reduced rates which the Granges have secured, and are now securing for their members. 3rd—Because I wish to meet and know the other farmers' wives through Canada, and have social and friendly relations with them. 4th—Because my husband is a Granger, and I wish to go with him to the meetings. 5th—It prevents the necessity of his keeping secrets from me.

If all these reasons are not sufficient, I can give you as many more. I am satisfied that the Granges will benefit us both socially and financially, and I hope that both Mrs. Mc— and all good and true farmers' wives and daughters will aid in extending their power and usefulness. If there is no Grange in your neighborhood which you can join, obtain the signatures of at least eight farmers besides your husband, and at least three wives or daughters besides yourself, and send the signed paper to me and I will see that it is attended to.

MINNIE MAY.



UNCLE TOM'S COLUMN.

MY DEAR NIECES AND NEPHEWS:

There will be a prize next month of one of Vick's chromos for the boy or girl who sends the best collection of different kinds of oats,

wheat and peas (two grains of each will be sufficient), with their correct names and the way to distinguish them when they are growing, and when and after they are threshed.

This will give you all a chance to study up something which will afterwards be of service to you.

Specimens, &c., must be in by the 15th of September.

The prize for the month after that will be for the best story about boys and girls managing for themselves with bees, poultry or gardening, and telling how it was all done, and how they got along.

This will enable you to get your inventive and descriptive faculties to work. The stories must be in by the 15th of October.

UNCLE TOM.

Dear Uncle Tom,— I will now fulfil my promise of writing to you. My foliage plant is growing beautifully; there are branches all around it, and it is so nice. I would like to get acquainted with some of your nieces and nephews. I have a little brother, and I like him very much, and I am sure he is no humbug at all. Good bye. MINNIE MAY JARVIS.

Willie A. Ruherford sends answers to puzzles, and wants to know if his selections are going in this month, as they did not appear last. As a general thing, if they are not printed the month they are sent, it is not put in all the pieces which are sent to me; some because they are too well known to me; some I don't like them, and some because, although very good, are not good enough. Don't get discouraged, though; send on some more, and you may suit my ideas next time.

259. Though you set me on foot, I shall be on my head. MICHAEL STEELE. 260. In my first my second sat; my third and fourth I ate. M. S. 261. My first is in Tom, but not in Mary. My second is in thorn, but not in berry. My third is in hate, but not in love. My fourth in mitten, but not in glove. My fifth is in speech, but not in talk. My sixth is in stone, but not in rock. My whole is the name of a river. SIDNEY POTTER.

Minnie E. Turner says: "I have no big brothers, or little ones either; I had a little sister and a brother, but they both left me and I am alone." Never mind, Minnie; come into our family and you will have plenty of young relations.

Here are some very easy puzzles: 262. I am composed of eight letters. My 1, 3, 2 is a wriggler. My 5, 7, 8 is a weight. My 7, 6, 2 good to burn. My 4, 7, 2, 5 a young horse. 263. I am composed of four letters. My 3, 4, 1 are not many. My 3, 2, 3, 4 a musical instrument. My whole is what the young men ought to be looking out for. 264. Square word: A piece of furniture; a shape; a true saying; a part in music. CHAS. WITHESSPOON.

265. Square word: A part of the human body; to go in; to make amends; money paid for houses; a lock of hair. JACOB M. SHERK.

Maple Grove, June 13th, 1874.

Dear Uncle Tom,— I am a most afraid to write for fear my letter will go down in that hole in your pocket, but I hope Minnie May has sewed it up for you before this. Oh, by the way, I quite agree with Cousin Stan in thinking that Minnie May is Mrs. Uncle Tom. What a lot of nephews and nieces you are getting, uncle; you keep getting more and more every month. I wonder what is the matter with Cousin Cora; she has not written for a long time.

Oh, Uncle Tom, do you know what I have been thinking about. I think it would be so nice if you would have a picnic some place, and invite all your nephews and nieces, and then we could all get acquainted with each other. I would like very much to get acquainted with Hattie and Cora and Nina and some of my clever cousins. I think you might accept the invitation of Cousin Minnie. I will not promise to give you a swing, but I will let you have a game of croquet instead, but you must remember if you do not bring Minnie May with you, you will not be a bit welcome. Well I guess I must close, for you will be getting tired; so adieu until next month. From ROSE WIDDIFIELD.

Brucefield, June 18th, 1874.

Dear Uncle Tom,— Most of the seeds you so kindly sent me are doing well. The vegetables are all looking very well. I built a 'cairn,' or mound of earth and stones in our garden this spring. I planted a geranium, a petunia and some dew plant on the top of it, and moss and dew plant all round the sides, in the spaces between the stones. I named it "Uncle Tom."

My little four-year-old brother says some funny things sometimes. The other night he was lying on the lounge, and said he "was fearful tired." I told him he had better go out into the kitchen, and I would wash his feet and put on his "knock-down" (that is his name for night-gown). He said he was too tired to walk out. I asked him how he came in, then. He answered "Oh, I just flew in." I said he had better fly out again, then. "Oh my wings broke off," he replied. He calls his pant legs his "foot sleeves." Not bad, is it? I am glad to hear you have got a little son. I hope he is well, and that he will be a credit to his father. Yours truly, LALLIE.

GEOGRAPHICAL PUZZLE.

266 One Sunday morning as I was comfortably seated reading Irving's History of the capital of Ohio, (a city of Maryland), who never gives me a moment's peace, exclaimed: My (island off the coast of Maine) it is high time you dressed for church. The morning was (a state of South America), and I dreaded to go out, but my brother, who is as cunning as a (small island south of Maine), remarked: You know you want to wear your new (town in Scotland to-day). Thus reminded, I was soon ready, and we set out, (a cape east of Massachusetts) throwing a light (mountain in Oregon) over my bonnet to protect it from the (mountains in south Africa). My brother declared that I had never looked prettier, but this I knew was (a cape west of U. S.). When we reached the church, we found the Rev. (town in Illinois) in the pulpit. He is not a favorite of mine, but some people think him a very (city in the north of Russia). The text was from one of the epistles of (the capital of Minnesota). The preacher exhorted us to follow the example of (a bay east of Brazil) and wage war upon them till they were all (a sea in Palestine), and we safe across the (river connecting Great Salt and Utah Lakes). The sermon was so long that it seemed to me it must have covered (a city of France), but the singing was really (a lake between U. S. and British America). As we came out we heard (a bay east of Michigan), and I remarked that we should soon see (a cape west of Oregon), to which my brother replied (a river of Italy), the (island west of Scotland) is too nearly (a cape south of Ireland) for that. On arriving at home, we found (a city of Italy) and dear little (town of Ohio) already at dinner, but I had very little appetite. After taking a little (island west of Africa), I felt somewhat refreshed, and, with the life of (a city in Florida), written by (a sea north of Russia), I retired to my room and made a perfect (island south of South America) of myself during the rest of the day. HATTIE HAVILAND.

HOW IS IT MADE;

During one of the earlier visits of the Royal family to Balmoral, Prince Albert, dressed in a very simple manner, was crossing one of the scotch lakes in a steamer, and was curious to note everything relating to the management of the vessel, and among many other things the cooking. Approaching the "galley" where a brawny Highlander was attending to the culinary matters, he was attracted by the savory odors of a compound known by Scotchman as "hodge-podge," which the Highlander was preparing. "What is that?" asked the Prince, who was not known to the cook. "Hodge-

podge, sir," was the reply. "How is it made?" was the next question. "Why, there's mutton intil't, and turnips intil't, and carrots intil't, and—" "Yes, yes," said the Prince, who had not learned that "intil't" meant "in it," expressed by the contraction "intil't;" "but what is intil't?" "Why, there's mutton intil't and turnips intil't and carrots intil't and—" "Yes, I see; but what is 'intil't'?" The man looked at him, and seeing that the Prince was serious, he replied, "There is mutton intil't and turnips intil't and—" "Yes certainly, I know," urged the inquirer; "but what is 'intil't-intil't'?" "Why," yelled the Highlander, brandishing his big spoon, "am I na tellin' ye what's intil't? There's mutton intil't, and—" Here the interview was brought to a close by one of the Prince's suite, who, fortunately passing, stepped in to explain matters to the Highlander, who opened his mouth with stupid wonder at the possibility that a wise man like himself should not at once have known that it was the Prince.

May 7, 1874.

Dear Uncle Tom,— I have been busy ever since sunrise, for early this morning I said to myself, I am going to write to Uncle Tom to-day, and I've hurried ever since. Now it's all done, and here I be. Uncle Tom, your a jewel—the best of all good uncles! I hope it is not too late to vote; I want to vote for Nina. My brother says he will vote for Kitty. He says he thinks it hardly fair to speak in so slighting a manner of big brothers. He is an awful torment, but he has gone away now. He is going to learn to talk French, and, when he comes back, I suppose he will have grown very dignified, and wear a moustache. Oh! I forgot to ask you do you like weddings? We had lots here this spring. Almost everybody got married. All the widows and widowers, old maids and bachelors, and some of them real old. It was jolly to see them trying to look so awfully sentimental. I hope that you got some wedding cake. It was too bad if you didn't; but never mind, Uncle, the next time there is a wedding in the family you shall have a piece of the cake, and Minnie, and Nina, and Cora, and all the rest of the cousins. Please tell me if one of the family should marry a girl. Don't that give me a right to a title? That's a conundrum.

We have got some house plants, and among them is one very large plant that we call Indian shot. The leaves of it are like the leaves of field corn. I have been told that that was not the real name of it. Could you set me right? Mother says it is time to get dinner, and I suppose you are not sorry, as you get rid of my chatter. Love to all, EMIE.

ANSWERS TO JULY PUZZLES.

249. Rugby. 250. Brighton. 251. Oxford. 252. Humber. 253. Charles Dickens. 254. R O M E 255. H U G E O P A L U R A L M A L L G A O L E L I A E L I A 256. When we want a bar-maid. 257. Because the spring brings out the blows. 258. On account of the quantity of bark they yield.

Uncle Tom's Scrap Book.

I stood beneath a hollow tree; the blast it hollow blew; I thought upon the hollow world and all its hollow crew. Ambition and its hollow schemes, the hollow hopes we follow; Imagination's hollow dreams— all hollow, hollow, hollow.

The hollow leader but betrays the hollow dupes who heed him, The hollow critic vents his praise to hollow fools who feed him; The hollow friend who takes your hand is but a summer swallow; Whatever I see is like this tree, all hollow, hollow, hollow.

A crown it is a hollow thing, and hollow heads oft wear it, The hollow title of a king— what hollow hearts oft bear it. No hollow wiles nor honey'd smiles of ladies fair I follow, Whatever I see is like this tree, all hollow, hollow, hollow.

Dear Uncle Tom,— Allow me to ask three questions: Who was the favorite of the family? You have not told who was honored with the most votes. What are you a-going to name your boy?— If you have not selected, I think it would be no more than right to consult your family. Would you like a patent pocket lock for your pocket; if so, I will send you one. CANADIAN CIFF.

South Granby, P. Q.

A WARNING TO LOVERS.

"Metildy, you are the most good for nothin', triffin', owdacious, contrary piece that ever lived."

"Oh, ma!" sobbed Matilda, "I couldn't help myself— deed I couldn't."

"Couldn't help yourself? That's a pretty way to talk! Ain't he a nice young man?"

"Got money?"

"Yes'm."

"And good kinsfolks?"

"Yes'm."

"And loves you to distraction?"

"Yes'm."

"Well, in the name o' common sense, what did you send him home for?"

"Well, ma, if I must tell the truth, I must, I s'pose, though I'd rather die. You see, ma, when he fecht his cheer clast to mine, and ketcht hold of my hand, and squeezed it, and dropt on his knees, then it was that his eyes rolled and he began breathin' hard, and his gallowes kept a creakin' and a creakin' till I thought in my soul somethin' terrible was the matter with his in'ards, his vitals; and that flustered and skeered me so that I bust out a cryin'." Stejn' me do that, he creaked worse'n ever, and that made me cry harder; and the harder I cried the harder he creaked, till all of a sudden it came to me that it wasn't nothin' but his gallowes; and then I bust out laughin' fit to kill myself, right in his face. And then he jumped up and run out of the house, mad as fur, and he ain't comin' back no more. Boo-hoo, boo-hoo, boo-hoo!"

"Metildy," said the o'd woman, sternly, "stop sniv'lin'. You've made an everlastin' fool of yourself, but your c'ke ain't all dough yet. It all comes of them no 'count, fashionable, sto' gallowes— 'spenders' I believe they calls 'em. Never mind, honey. I'll send for Johnny, tell him how it happened 'plogize to him, and knit him a real nice pair of yarn gallowes, jest like your pa's, and they never creak."

"Yes, ma," said Matilda, brightening up, "but let me knit 'em."

"So you shall, honey; he'll vally 'em a heap more than if I knit them. Cheer up, Tildy; it'll be all right, you mind if it won't."

The other day an aged couple drove into an Indiana city just as an undertaking firm was moving into an old church, which had been purchased for a shop. The old gentleman stood up in his wagon with mouth and eyes distended, as the men silently carried coffin after coffin into the church. At last he turned around to his half and gasped: "Sary, by golly, its the cholera; let's git!" and they got.

"TO MEMORY DEAR."—Enthusiastic Cricketer—"Ah, last season was a good one! I'd both eyes blacked in one match, and two fingers smashed in the return match the same week! But give me 1871 over again. I got the ball on my forehead at 'short leg,' and was senseless for three-quarters of an hour!— [? And ever since.]

A man who fell into a vat of boiling lard and was taken out alive, says that it was not an unpleasant sensation after the first moment, but he thought what a mighty queer shaped dough-nut he would make. CANADIAN CIFF.

A man in stopping his paper wrote:—"I think folks doant ort to spend thare munny on papers. My father never did, an evry boddy sed he was the smartest man in the kountree, and has got the intellygentist family of boys that ever dugg taters."

"I say, Mr. Johnson, did you hear 'bout de catalespy dat befel Phillips?" "Of course I didn't; what was it?" "You see, the doctor ordered a blister on her chist; well as she hadn't got no chest no how, she put it on de bandbox, and it has drawn her new pink bonnet out ob shape, and spile um entirely."

"Remember who you are talking to, sir," said an indignant parent to his fractious son; "I am your father, sir." "Well, whose to blame for that?" said young impertinence. "Tain't me." JACOB M. SHERK.

STOCK & DAIRY

LOOK TO THE LAMBS.

Perhaps not one in ten of those who keep sheep, in connection with their other farm stock, ever think it worth while to examine their lambs either at or after shearing time, to see if they are free from ticks and lice. Both of these parasites will leave the old sheep for the lambs, and the first intimation the farmer has of their existence, perhaps, is in finding the lambs dull and drooping and covered with vermin.

It is surprising, sometimes, how vermin will increase with the advent of warm weather. If the advice we lately gave in regard to dipping the lambs at the time of clipping or shearing the sheep be followed, but little, if any difficulty in this direction will be experienced. If not, the sooner they are attended to the better. Make a wash of one part pure carbolic acid to one hundred parts of water, and, if a part of the lambs are found infested, it will be safe to dip them all.

The tick is, after hatching, supposed to undergo a change before becoming mature, since when hatched they have but six legs, and when mature they are furnished with eight. Therefore it is more than probable that, like the ticks found on Texas cattle, they drop off, the eggs hatch, and, undergoing their change, the ticks again fasten to the sheep and lambs.

Upon this head, the *Veterinarian*, an English journal, sometime since contained an account of a bit of lamb skin covered with ticks, which was placed in a pill box. After a time the ticks were found still alive, and the box nearly filled with eggs. The eggs were placed in a glass tube, corked, and carried in the pocket of the experimenter for a fortnight. The young ticks were hatched, being about the size of pin heads. They had but six legs, from which it was inferred that an intermediate stage is passed through, since, when found on sheep, they always have their full complement of eight legs.

In 1868, during the prevalence of the so-called Spanish fever among the cattle in Central Illinois, we assisted Dr. Gamage for several days in his *post mortem* examinations of affected native cattle. It is well known that Texas cattle are infested with ticks, and one of the theories relating to this infection was that cattle swallowed large numbers of these young ticks and thus became subject to blood-poisoning. While we do not hold to this theory, it was, nevertheless, at first plausible, since we found places where the grass was fairly alive with the young ticks, hatched out from the mature insects that had dropped from the bodies of the Texans which had been driven across the range.—*Western Rural*.

HOW THEY MAKE "GILT-EDGED BUTTER" IN ENGLAND.

"Fortunate is that household which has a dairy as a part of its establishment, especially now, when a housekeeper feels that milk and butter are the most difficult articles to produce both pure and good for the dairy supply of the family, even though there may be every opportunity of getting produce and home-made. It is really seldom that we eat butter as sweet and rich, and fine in flavor as is thought to be, and as it would be if careful and constant attention were paid to the simplest means; but then it is imperative to use all these means, and few will believe that all are necessary; so for convenience sake, or for other reasons or other purposes the room in the dairy is filled, and it becomes a store for many things which ought not to be there, as an experienced nose will soon detect; A close smell appears where all should be fresh as the morning air, an equal temperature being maintained to secure a great quantity of cream rising from the milk, and to confer a better quantity on both; both being scrupulously guarded from any contamination with animal or vegetable matter, often found hanging or placed in a dairy for coolness at this season—at the risk and with the reality of rendering the dairy products less pure and good than it might be.

"The butter-making must be arranged in some degree according to the quantity of cream or the number of cows' milk to be disposed of; but it is always better when made fresh from cream before it comes at all sour. One ounce of sulphate should be put in a tin before the milk is skimmed into it. The tin should hold when full three gallons of cream, which should be stirred twice a day until churned. This will do much to keep it in good condition. In a best butter we have ever eaten was made in a large dairy where a small proportion only of the milk was set to make butter. The tins held three or four gallons, the milk being spread over a surface about six inches deep. When it had been standing twelve hours, the cream was skimmed—the milk in this case was added to the new milk for cream-making, not more than one pound of butter per cow per week

being taken from the cheese. In most or all dairies it might be easily arranged for the cream to remain on the milk for twelve hours. Milk skimmed at these short intervals will be as sweet and good for weaning calves, for us in the house, or for sale, as skimmed milk; and, thus doing, the richness and flavor of the butter are secured, for which the highest price can always be gained. The sweetness and better quality of the milk, for whatever purpose it may afterwards be used, make up for any little less butter obtained than might have been, had the cream remained as is usual on the milk twenty-four hours, instead of the plan thus recommended of skimming it every twelve hours. At this season there is little difficulty in getting the butter to come quickly and well, but in autumn and winter it is otherwise, and much time is lost which may be saved by scalding the cream the evening before it is to be churned by placing the tin of cream in water to warm, which should gradually boil. Keep the cream in it for half an hour after the water boils very gently. Stir it very frequently, and there is a double average, for by this means any disagreeable flavor caused from different kinds of food eaten by the cattle is removed; and for this latter reason alone it is generally a valuable plan to scald the cream as described, for even the least experienced in making butter know that for some causes or other there are times when the butter (made as carefully as at other times when it is perfectly good) has an acid taste. Numbers of causes, reasonable or not, are given, for instance, that it is from the cows eating the cow-food, for its unpleasant taste in butter is just at the time when the butter-cups make the meadows yellow. The best thing to do to cure the unpleasant flavor in the cream is by scalding it before the butter is to be made.

"The mode of making up the butter is often a reason for its not proving good. It cannot be necessary to urge that the utmost delicacy and cleanliness can alone insure good butter, and instead of saying what should not be done, we will describe the plan adopted in making the best butter we have ever eaten, to which we have before alluded.

"As soon as the butter was taken out of the churn, the dairywoman (who must have a cool hand), in a cool place, gently squeezed or worked the butter, by which means the buttermilk was removed running round the sides of the wooden vessel in which the butter was being worked, the dairywoman whipping it up as soon as it runs from the butter. No water for washing the butter was ever allowed to be used in this dairy; a very little working or squeezing is enough to make the butter dry of the buttermilk. Then spreading it over the surface of the bottom of the vessel it has been worked in, salt sufficient for the taste desired was added, and it was rolled and printed in half-pound weights for use.

"Butter that is washed always seems to be tasteless compared to that treated as described in this large dairy. It may seem a little less trouble to wash, and wash, and wash it, and so remove the buttermilk, but, in so doing the flavor and richness, we believe, are very much diminished also, and the keeping properties somewhat less; and we would urge on those who have never tried this plan to do so, and judge for themselves if they do not find the quality of good butter thereby improved."—*English Agricultural Gazette*.

MILK FEVER IN COWS.

The disease is to be feared amongst cows over four years old that are well bred and good milkers, and that receive more than ordinary care and attention. "The system in a vigorous condition, filled with rich blood, and having the elasticity of that of a younger and growing animal, is suddenly subjected after calving, to a reflex of the blood which has been circulating through the system of the calf. The drain upon the mother's system consequent upon the support of the calf's life is stopped, and a great reaction occurs. The parts of the body which have been excited during the birth of the calf suffer from the difficulty, and after weather also increase the difficulty, and after a fit of shivering, which may occur from the first to the third day, a fever sets in, the appetite fails, rumination is stopped, weakness across the loins causes a staggering gate or an inability to rise, the udder is hard, hot, and swollen, the animal groans, looks wild, and frequently falls into convulsions, or becomes frantic and dashes her head about violently. When these last symptoms occur, rapidly following the first, recovery is very doubtful. To prevent an attack of this disorder, the cows should be reduced some time before calving, and only hay and bran gruel be given to her. The bowls should be kept loose by a few handfuls of linseed meal, and plenty of salt should be given. If the cow in good flesh she should have one pound of Epsom salts with half an ounce of ginger a week before her time is up, and as soon as she shows signs of calving in relaxation or looseness of the hinder parts, she should be kept in a quiet and well sheltered part of the stable; a loose box or stall being the safest place, in which she need not be tied

up. If there is a flow of milk it should be drawn from the udder. If the cow has had this fever previously, or her symptoms cause an attack to be expected she should be given twenty-five drops of tincture of aconite three or four hours after calving, repeating the dose every six hours until four doses have been given. If, in spite of all precautions, an attack occurs, she aconite, as previously mentioned, should be given along with two drachms of powdered opium in a bottle of thin gruel immediately. A pound of Epsom salts with half a pound of common salt dissolved in water, with some sugar or molasses to flavor it should be given soon after. Cloths dipped in hot water should be placed across the loins, and the cow should be covered with blankets. All the cold water she will drink should be given as frequently as may be need-d, and she should be kept as quiet as possible. The milk should be drawn every few hours. Pure fresh air is also indispensable.—*American Agriculturist*.

FRAUDULENT BUTTER.

From the outset we have discouraged the manufacture and sale of the so-called "suet butter" as a fraud upon the consumer as well as the dairyman. In no sense can the stuff be called butter, and we are glad to see that at last the sense of the dealers in butter is aroused, and that a demonstration is making against "oleo-margarine," or fat, suet, tallow, or whatever it may be, churned in sour milk and packed and put upon the market as butter. In just so much as this fraud may be perpetrated is the value of butter depressed in the market. Because there is an established market for butter of poor grades amongst poor consumers and bakers in the cities, anything which may dispute the position in the market of this class of butter makes it unsalable and effects the entire market by an accumulation of stock. Therefore factory-men, dairymen, and even makers of the "gilt edged" butter, are directly interested in preventing the stuff from coming upon the market as butter. Let it be sold for what it really is—a preparation of tallow; this the makers of it have a perfect right to do, but when it enters the market as butter of any kind it usurps a place to which it has no right, and becomes a fraud and a thing to be discouraged. The *New York Butter and Cheese Exchange* has at last determined to interfere to protect the interests of their clients, and to obtain such legislative actions as shall enforce the use of proper and distinctive brands upon the spurious article, and to deny it a position of any character whatever amongst dairy products.—*Am Agriculturist*.

MERIT VS. MERE PEDIGREE.

If all that is to be aimed at is obsequiously to copy the herd of some dead breeder who earned a reputation, it would seem more rational to adopt the dead man's method rather than to scramble for what are left of his tools in the condition that he left them. Both the two national benefactors, the late Messrs. Bates and Booth, tried with such power as they had, (and these were large), to establish a distinct type of Short-horn. Both succeeded, and the moulds they left behind are deservedly much prized. But it should be the object of the admirers of each to reproduce the forms of the animals which won distinction for their original breeder, and not to reproduce pedigrees on paper, varying as little as possible from those which their forerunner left. It is quite well known that the animals which most resemble the original Duchesses have been found in tribes crossed with Duchesses blood, but not of Duchess descent, and that cows reproducing the model of Bracelet and the Bl somers, or the four sister Queens have occurred at intervals in very obscure families which have had the advantage of crosses of of Killerby or Warlaby blood. Such reappearances are more to the credit of the owner than animals which, having a pedigree almost a fac-simile of original Bates or Booth pedigrees, are yet weedy or unsightly. Yet the tendency of the recent sales is to encourage young beginners to neglect the former, and to half ruin one another in a frantic effort to restrict the number of the possessors of the latter. It is a matter of common talk that at some not far distant auctions the best butchers' beasts have scarcely made butcher's prices.

No doubt for several purposes "pure" animals have a special value. But it must not be forgotten that the result of "pure" breeding has been that some most valuable families are fewer in numbers now than they were ten years ago. Is this a recommendation to land occupiers to set up for keeping "pure" herds? The object of the land is to feed the people; and the really good stock are they which year by year contribute the largest proportion of the best food for English families. There is a tendency in much that is said and written about Short-horns to obscure the fact that no breed when really in a natural condition, will milk longer, feed quicker, or give more saleable carcases than good Short-horns. The Irish and Scotch farmers (both of whom of late years have bred with greater intelligence than their English brethren) have never

joined in the hunt after this "pure" will-o'-the-wisp, as we must needs regard it. Messrs. Cruikshank offer every year, at Sittytton, not far short of a hundred yearling Short-horns, and eager competitors buy them at remunerative prices to use them to produce beef. Their tribes are not pure, and don't wear out. The Dublin yearling show of bulls is larger still, and all to our gain, find occupation, but not in "pure" herds. The English press should encourage the English farmer to do likewise, and not to join in flattering the owners of "pure" animals in the esoteric sense of the word—which produce a good many more paragraphs than beefsteaks.—*London Field*.

SALTING CATTLE.

On a prairie range, where the cattle are not yarded at night, and which, of course, would be pastured by vari ous herds, we should advise salting three times each week, giving just what the animals will lick clean. Give the salt after the animals have filled themselves in the morning, if possible, or at night before yarding, allowing them to have access to water soon after the salt is given. A small handful will thus suffice for each ordinary steer. If the steers are salted but twice a week, no more should be given than if salted three times, since salt, in large doses, is cathartic. It is thought that cattle will eat rather more salt when fed on tame pasture than on wild or prairie grass, and with considerable plausibility, since it is natural to suppose that pastures have been accumulating the organic and inorganic elements for scores of centuries; but nothing definite is known in this respect. We consider the practice of salting cattle occasionally as altogether improper; as well stint ourselves to regular doses of salt. All farm stock should be allowed to take it at will. In this way they will eat less than if salted occasionally, they will not eat than an ounce usually taken. Indeed, there are many good farmers who hold that salt is positively injurious, fed in occasional doses, and there is no doubt but this is the case, if enough is given to physic them, since it wastes the flesh. A better plan would be for those having cattle on the range to pay *pro rata*, so that all the stock might be furnished daily with what they require.

BEARING STOCK.

One thing must be borne in mind, that to be successful, a steady course must be pursued, and that it runs onward—towards perfection. I will not say to perfection, for that will not be attained by any person in his lifetime. The color and style of the herd should be a matter of study, to breed as hard as may be to a fixed standard of excellence, not only in color and form, but also of health and hardihood; a robust and vigorous constitution should be one prominent object sought in establishing and continuing a herd for profit, not only for the present but also for the coming generation, and so well should the male animal be selected, that no glaring defects should be disclosed in their produce, especially after the herd has been started on a permanent basis for any special purpose.

If the proprietor of such a herd should wish to change his breeding, methinks he had better dispose of his herd to those who wish to keep on in the line in which they were started, and then begin anew for another purpose, if that was thought more desirable to his future prosperity and capabilities of his farm, etc.—In this paper I have said nothing of the different breeds of cattle, or their adoption for special purposes, preferring each farmer should make his own selection, then breed with care, and success is sure to follow in due time. J. T. in *Practical Farmer*.

DISEASE OF CATTLE.

The necessity of guarding our live stock against predisposition to disease, and the contagious nature of the foot-and-mouth disease, are shown in a debate on the subject in the Imperial Parliament. The Earl of Kimberley said there was a great difference of opinion as to whether compulsory slaughter was likely to stamp out the disease, but there was a concurrence of opinion that to be of any use the regulation must be stringent. The experience of other countries showed that partial measures were of no use. As regarded the foot-and-mouth disease, the committee was of opinion that we had no means of stamping it out without the adoption of more stringent measures than well would be put in force in the case of such a disease.

Lord Dumany said he had heard from good authority that a number of cattle which had left Ireland in a healthy state were found to be diseased when they arrived in Dorsetshire. This was attributed to the treatment they had sustained on the journey. Sufficient attention was not paid to the cleansing of cattle trucks, and the supplying of the animals with food and water.

CONTENTS OF AUGUST NUMBER.

EDITORIAL:
 August on the Farm, 113; The International Agricultural Exhibition at Bremen, 113; Union is Strength, 113; Trifolium, 114; The American Potato Beetle, 114.
 Cheese and the Cheese Trade, 114.
THE HORSE:
 How English Grooms Care for Horses, 114; Barley for Horses, 114; Advance in Horses, 114.
POULTRY YARD:
 Breed of Fowls, 115; On Breeding Dark Brahmas; 115; About Raising Ducks, 115; Gout or Rheumatism in Fowls, 115; Gape Worm and its Remedy, 115; To Insure the Hatching of Eggs, 115; Poultry, 115; Save the Best Fowls for Breeding, 115; The Dry Earth Process in the Poultry House, 115.
ILLUSTRATIONS:
 Garden of the Tuilleries, 116; Shark Fishing, 120, Sunrise, 121.
 Three Days of Happiness, 116; Fall Wheat, 116; Ploughing Match, 116; The Green Fly, 116;
 English Capital, 117; From the Handy Horse Book, 117.
PATRONS OF HUSBANDRY, 117.
HORTICULTURAL ITEMS, 117.
GARDEN, ORCHARD & FOREST:—
 The Apple Worm, 118; Gladioluses and Dahlias, 118; Evergreen Trees in Orchards, 118; Orchard Grass, 118; Grape Culture in Ohio, 118; Horticultural Society, 118; Cherry Tree Aphid, 118; Clover as a Fertilizer, 119; Notes of the Garden and Farm, &c., 119.
 On Board the Circassian, 120.
AGRICULTURAL:—
 Grasshoppers in Minnesota, 120; The Clover Crop, 120; Heavy vs. Light Implements, 121; Department of Agriculture Report, United States, 121; Super-phosphate, 121; Camphor on Seeds, 121; Deeper Cultivation, 122; Treating Sandy Soil, 122; Value of Manure, 122; To Improve the Quality of Hay, 122; How to Apply Manure, 123; The Birds the Farmers' Best Friends, 123; Corn, 123; Wastefulness on the Farm, 123; Continental Correspondence, 123.
MINNIE MAY'S DEPARTMENT, 124.
UNCLE TOM'S COLUMN, 125.
STOCK & DAIRY:—
 Look to the Lambs, 126; How They Make "Gilt-Edged Butter" in England, 126; Milk Fever in Cows, 126; Fraudulent Butter, 126; Merit vs. Mere Pedigree, 126; Salting Cattle, 126; Rearing Stock, 126.
THE APIARY:—
 That Bee Swindler Again, 127.
 Advertisements, 127, 128.


MARKETS.

Produce Markets.

The English quotations at latest report showed a fall of 6d on flour; is on red, white and club wheat, and is 6d on corn. Montreal market very unsettled, and prices tending downwards. Chicago was rather higher than at the last market. New York market was slightly firmer. The Toronto market was very dull, and prices slightly weaker in consequence of the fall in England. No sales having been reported, the prices must be considered almost nominal, with a downward tendency.
 Oats—The market for oats continues firm. Some lots were sold at 57c. on the track, and smaller lots as high as 65c., bagged and delivered.
 Barley—Prices unchanged.

London, Ont. Market.
 Receipts are as yet very light, and purchasers seem indifferent about buying any grain except oats, which are in active request for local consumption. Hay is in fair demand; prices for new, \$8 to \$10; for old, \$12 to \$14. White wheat, \$2 to \$2.10; red, \$1.90 to \$2.—Spring wheat, \$2.10 to \$2.15. Barley, \$1. Oats, \$1.65 to \$1.75. Feas, \$1.15. Corn, \$1.40. Eggs, 15c. to 16c. Butter—keg, 17c. to 19c.; rolls, 15c. to 22c.—Cheese—dairy, 10c. to 11c. Oatmeal, per 100 lbs., \$2.50 to \$3. Potatoes—old, per 60 lbs., 80c.; new \$1.
 Supplies of produce of every description are, as may be expected, yet very light, and prices variable and almost nominal. As yet we see not much prospect for high prices.
 The reports of crops, as far as heard from, are encouraging, though in sections of the country where this great drought has prevailed, the potato crop will not be as heavy as was at one time anticipated.

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