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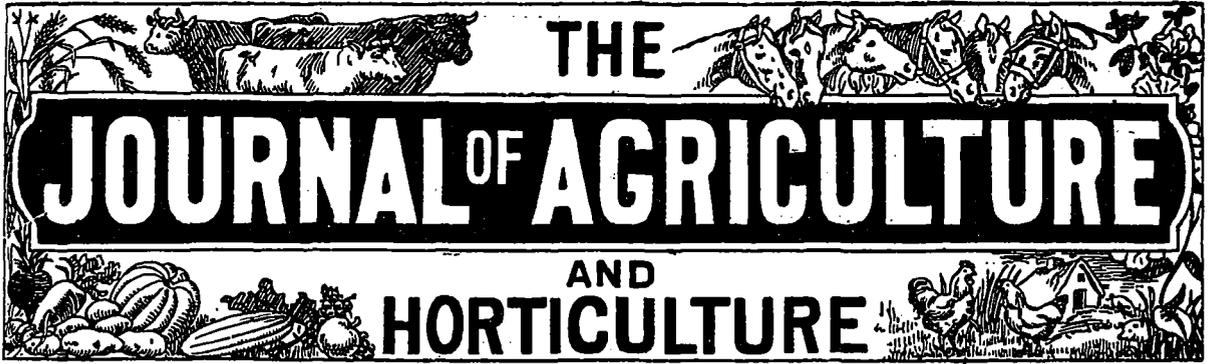
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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

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JULY 15th, 1899

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Notes by the Way.

STE-ANNE DE BELLEVUE.

State of the crops.—It is really very sad to look over the fields and orchards in this neighbourhood. No rain has fallen, to speak of, since the middle of May; there is actually no clover at all, either new or old; the pastures are bare, oh! very bare; the apple-trees have been devastated by the caterpillars; there is no water, except in the streams, for the cattle; the grain-crops,—barley and oats—are very thin on the ground and coming into ear—such ears!—and the only thing that seems to thrive is the wild mustard, or, as we call it in England, the charlock, cadluck, or kilk. Even the timothy is poor, very poor. Fortunately it is not too late to sow some of the fodder-crops of which Lord Aylmer spoke in the last number of the JOURNAL: Hungarian grass, the mixture of tares and oats, and that neglected treasure, *rape*, would prove of great value to many a farmer, even if they only produced enough stuff for pasture for the cows in the latter end of September and in October. Corn too, sown thickly, would do something; but, altogether, the prospects are very disheartening. As our good friend, Mr. Peter Macfarlane, whose article we have just received, very truly says: It is too late in the season to hope for any great improvement.

Late turnips.—There is, however, plenty of time to grow a fair crop of late turnips. Drill in green-rounds, or some other white turnip, in rows 18 inches apart; when up, harrow them severely across the rows, if you cannot space time to thin them out, and they will help the young stock along. A couple of hundred pounds of super-

phosphate, or three hundred of bone-dust will not be wasted on an acre of them; sown broadcast and harrowed in before the seed.

Charlock-spraying.—At the Yorkshire Agricultural College, a large meeting of farmers of the county attended a demonstration of the new method of destroying wild mustard by spraying with sulphate of iron and sulphate of copper. The crop was oats and the charlock was very high and strong. The results shall, if received in time, be given in our next. (Not settled yet).

Dairy-implements.—Our friend Mr. Lister, of Dursley, Gloucestershire, has been exhibiting his new turbine separator at the Royal Agricultural Society's show, at Maidstone, Kent.

The weather in England has not been propitious to the growth of crops. The cold returned in the week ending June 17th, just as the wheat was earing. The hay-crop is light; swedes have been re-sown in many places, owing to the first lot having been eaten by the fly; mangels are not thriving, and pastures are short, which is not to be wondered at after the absence of rain for more than four weeks.

The fly.—The turnip-fly (*haltica nemorum*) is rather a beetle than a fly. The best cure for it is a spraying with a solution of 4 lbs. soft soap, 4 gallons of paraffine, and 40 gallons of water, but this is too costly for general use. In some parts of this country, Sorel for instance, we have never seen any damage done by the fly; whereas, in the neighbourhood of Joliette we never succeeded in getting a plant to stand, though we tried sowing at varying periods from the middle of May to the middle of July, year after year for four years.

The better the land is prepared—that is, pulverised—for the seed, the better chance have the young plants to grow out of the fly's way. Sow thickly—3½ lbs. of swedes and 3 lbs. of white turnip seed to the acre, at 24 inches between the rows. Frequent horse-hoeing disturbs the fly and must be beneficial.

Price of meat, etc. in London.—

Milch cows	£15 to £23 a head
Scotch fat beasts, 720 lbs. to 760 lbs. (carcase)	\$1.20 per 8 lbs.
Fat cows98 “ “
Southdown sheep, 60 lbs. to 64 lbs. (carcase)	1.36 “ “
Lincolns	1.20 “ “
Fat down lambs	1.50 “ “
Ewes96 “ “

Wool still keeps very low in price. Downs, 15 cts.; Kents, 12 cts.; half-bred, 13 cts. a pound.

Hay; best meadow-hay, \$20.16 best clover-hay, \$23.40 per load of 36 trusses weighing each 56 lbs. = 2,016 lbs.

(A large margin between \$23.40 and \$4.00! the price of clover-hay here last winter; but then the farmers near London know how to make hay of both kinds—thus: the meadow-hay is pulled about half a dozen times a day; the clover is allowed to make itself, with one turn after the mower, cocked, and carried to the stock from the cock *with the leaf on*.)

Hams and bacon are low in price on account of excessive shipments from Denmark.

Butter is rather dearer, at 94s. per 112 lbs. for best Irish creamery, and English Cheddar cheese (new) is worth 60s. for the finest quality.

Sheep-shearing machine.—Papers speak very highly of the “Barton-Gillette” machine at work. A pedal-machine, worked by one man with two shearing appliances. One advantage is the adaptation of one of the fittings as a grindstone for the sheers.

THE DARBY DIGGER.

The Darby Digger has been completely transformed. It is now a triangular implement attached to an ordinary 8 h. p. traction engine, supported on its own wheels, by means of which it adapts itself to irregularities in the surface of the soil. In place of the old digging forks there are disc cultivators which have a screwing as well as a rotary motion, enabling them to enter the hardest land, which they pulverise thoroughly. The implement digs 11 ft. 6 in. in width, and from 2 in. to 10 in. in depth. It can be constructed by lengthening the shanks of the screw diggers, so as

to dig up to at least 18 in. if required. A very compact tipping-lorry and traction engine combined is exhibited by Messrs. Mann and Charlesworth.

One of the most notable novelties is the fruit tree sprayer brought out by Messrs. Weeks and Son. This is a horse-power machine, holding 75 gallons, and fitted with 3 in. gun-metal pumps and gun-metal valve boxes, large air vessel, adjustable shafts, side throwing-out gear, copper strainers, and four lengths of armoured hose, terminating with five-nozzle sprayers. Four men walk behind the machine directing the spray, and when it is necessary to stop the horse to spray large trees, the action of the pumps, we are informed continues for about five minutes.

The Maryland System of Fumigation.—The method of fumigation for the destruction of the San Jose scale in Maryland, as carried out under the direction of the State entomologist, is worth notice, because it may be applicable to various insect and fungoid diseases of hothouse plants. The nursery plants or trees to be treated were placed in a large room tightly closed. Into this chamber a jar containing water was introduced, and some sulphuric acid was first dropped into the water, after which some cyanide of potassium was added, and the operator hastily withdrew, as the white fumes of hydrocyanic gas began to arise, these being fatal to the life of any man who inhales them for a few minutes. It is important to be precise in the quantities of the ingredients of the mixture, as too much of the cyanide might injure the trees or plants; and these should not be left in the fumes for more than half an hour without the house being ventilated. The proportions found by experiment to be satisfactory are one-fourth of a gramme of the cyanide for each cubic foot of air space in the fumigating room, with 50 per cent. more sulphuric acid, and 50 per cent. more water than acid. For example, in a room containing 300 cubic feet of space, 50 grammes of cyanide of potassium, 75 grammes of sulphuric acid, and 112 grammes of water are used. There are 28½ grammes to the ounce avoirdupois. It is obvious that only skilled operators should use this dangerous gas; but under proper conditions, it might well be tried on an experimental scale for the destruction of pests in hothouses. In one case, described in the *Rural New Yorker*, 10,000 young peach trees

were fumigated at one time. It is clear that if this method of destroying insects in hothouses can be applied without injury to vines, tomatoes, or various pot plants, it would be very much cheaper and less laborious than spraying with insecticides.

Machinery.—We saw it stated, the other day, that an Alderman of Montreal proposed that, in future, no stones should be broken for road-purposes by machinery. This reminds us of the fact, mentioned in Mr. Crabb Robinson's *Life*, etc., that in the year 1816, the Suffolk farmers near Bury, were so terrified by the frequent incendiary fire in their stackyards and farm-buildings, that they brought out their threshing-machines on to the road-sides and broke them to pieces.

We, ourselves had, in 1850, threatening letters in regard to a threshing-machine we were using on our farm in Kent, England; and we well remember, in 1852, iron stubs being driven into the ground in the wheat-fields of our dear old friend Wm. Rigden, with the intention of smashing one of the first reapers that had been imported from the States. But these plots came to naught. Wages are higher than they ever were in the old country, and the farm-labourer there understands well enough that, without machinery, the business of getting in the crops could never be carried out.

By the bye, a Canadian farmer in this neighbourhood told us, last week, that the real reason why the crops on his friends' farms are not so abundant as they used to be, is that they persist in using reapers! "*C'est la vraie cause de l'appauvrissement des terres*," said he; the straw is cut close to the ground, and there is nothing for the crop to feed on!" Fact, we can assure our readers.

Ridding Buildings of Fleas.—A writer in the *Practical Farmer* gives the following method of ridding buildings of fleas:—When I was a boy, father's place became infested with fleas from pigs sleeping at the barn, and they nearly drove me crazy. I heard in some way that salt would kill them. I suppose I used a peck of salt, scattering it freely about the barn and house, and at the expiration of a week we could not tell that a flea had ever been on the place. All gone. Since then I have cleared our home of them several times. One application always does the work. I have also recommended it to others who have used it with equal success. Salt scattered over a

carpet and swept off before it melts will clean it of both fleas and dirt. I am never bothered with fleas now unless I get them away from home. I know there are many people who would willingly spend the price of a barrel of salt to be rid of the pests, and salt is never-failing.

GOOD ADVICE

Teasing of young animals on the farm should never be tolerated. It may be funny to see the young things make use of their tender horns, and stamping of feet, etc., but as they grow older and learn to know their strength, they often become vicious, and then some day in a fit of bad temper they are liable to injure some member of the family, or strangers who may happen to be passing by are very likely to be attacked by vicious animals. Give all animals on the farm kind and firm treatment. Animals should be made to both respect and love their attendants, but this cannot be accomplished if they are allowed to be teased.
—*N.-West Farmer.*

Kansas.—This State is said to have within its confines only 200,000 sheep; but, then, it has 176,000 dogs!

Will sheep eat mustard? Yes they are about as hard on mustard as they are on mortgages, if given a chance.

One reason for the English supremacy in mutton-growing is that there the lambs and sheep are fed always upon the best the land affords, and are not confined to short pastures and stubble fields.

Let us fix in mind that sheep never crop a pasture but to benefit it. Moreover, climb over rocks and ledges where cows would not go, and almost every herb that grows suffices them for food.

Where sheep-men believe more in mutton than in fleece they should show their faith by breeding upto the best mutton rams. When a flock is on this basis it will prove much more satisfactory than when the profit depends wholly upon the idiosyncracies of the wool market.—*Ex.*

A pig feeding experiment.—An experiment has been conducted recently at Nottingham, England, with considerable care, that is worth nothing here. Separated milk was being sold at 2c. a gallon and

whey at one third of a cent, and with this and maize or barley meal tests were made on growing pigs, always in lots of six pigs at a time. Barley meal and skim-milk has always been regarded in England as a model food for producing choice bacon—finishing, of course with pease. The point most distinctly brought out was the food value of the whey. The butcher showed that maize meal, scalded and soaked before being fed, produced thin bellies, too much fat in the back and the carcasses were softer than he liked. The meat from the milk and maize and whey and maize was superior, the difference, if any, being in favor of the whey. The greatest profit was made out of the combination of maize meal and whey, a fact that rather surprised the experimenters.

In a second experiment, in which barley meal was tried against maize meal, the barley meal made the firmer pork, with more lean in it, but the cheaper pork was made from the maize. The English experiments confirm the most reliable tests made here and are besides in exact accord with the best scientific knowledge. The milk is rich in the protein of which the maize is deficient and a mixture of maize and barley ground, and soaked or scalded, produces pork in which quality and profit are always satisfactorily combined.—*Ex.*

Cheshire.—In the cheese-factories in this country a little over ten pounds (10.30) is required to make a pound of cheese, except in the fall, "when the milk has a greater body," and eight pounds will do. The "greater body" must mean—is richer in fat.

The Horse.

THE "UNNERVING" OF HORSES.

All of the horsey world know that the operation of neurotomy exists, though in country districts it is called unnering, but comparatively few know its advantages or disadvantages, and the majority dread it, for the simple reason they have had no experience of it. The prejudices against it are many, and are doubtless based on the history of failures; for like everything else it will certainly be a failure unless managed with care and common sense. Even then success is not by

any means a certainty, but take it all round the "devil is not so black as he is painted."

Many will say that a nerved horse is dangerous as a hack. This is a mistake. They are as safe as other horses, if their action be such as to give them any claim to the title of hacks. Some horses, we know to our cost, are never safe, but a horse which has been a good hack before the lameness for which he was nerved will be a good hack afterwards, unless the lameness returns. Of course an accident may give an indelible though erroneous impression.

Another evil which I have heard quoted as a probable result of nerving, is the loss of the foot. Certainly this may happen in the event of a prick in shoeing, or other injury, which unnoticed at the times, sets up such inflammation, and allows it to gain such an ascendancy that it cannot be allayed. Veterinary surgeons, always, as far as I know, condemn to death a horse in this plight the instant that they learn he has been nerved. When separation of the hoof and coronet has begun, no doubt they are right, yet horses have shed their hoofs before now from acute laminitis, and new ones have grown. It is a question, but one far too deep for me to meddle with, whether the crust would ever be reproduced on a nerved foot. For my own part, I don't think it has ever had the chance.

I have heard men, who think nothing of firing a horse, object to nerving on the score of cruelty. Now an operation which instantly removes pain cannot be cruel. Besides there is always chloroform, which the vet. will administer for an extra charge.

The evils which may follow on the operation are not to be ignored, and we will consider some of them.

First a prick in shoeing, or the picking up of a nail. If ignored or neglected, either of these accidents may cause the loss of the horse's foot, and most likely will do so. But a good attendant should notice an abnormal heat in a horse's foot, even if he do not go lame (but some men cannot see when a horse is ever so lame), and as a matter of fact he will generally be a little lame, and at least call attention to the foot by resting it.

Another evil is in cases of navicular lameness of long standing, that the *perforans tendon* may be strained, then the horse goes lame.

Nimrod, in his "Condition of Hunters," says that unnerved horses in coaches are apt to break

their legs on false uneven ground" That is as it may be. Breaking of legs was a not very uncommon accident among coach horses, even when they had not been nerved; in fact it was the coachmen's accident *par excellence*, just as the broken back is the too common fate of the steeple-chaser, and being staked, of the hunter, so I do not think much of that evil, so-called.

In London nerving has been reduced to such a science, for the benefit of horse-copers, (1) that it is often impossible to detect the fact of its having been done.

I was shown a horse by a job-master once. There was no deception, I was told the state of the case, but even then could detect no outward or visible sign of it with a most careful investigation. Of course sensations return to the foot sooner or later. I think much sooner than the books tell us, in which about eighteen months is given as the limit. Personally, I have known it return in that number of weeks and even less than that. Of course something depends on the amount of nerve excised, but it is no use doing things by halves, and especially this thing. Of one thing I am confident, that horses left unshod regain sensation quicker than others. I consider that sensation has returned when the horse feels a touch on the heel, his eyes being covered at the time. Probably sensation, when regained, is blunted; but that is a question answerable, unhappily, only by the horse.

The lameness for which neurotomy is generally recommended is navicular disease. If taken in time, it sometimes acts practically as a cure, but the heel must not have had time to contract too much, or the frog to shrink and vanish away. If a horse be lame with ringbones, or bad sidebones, he will be benefited, horses in such instances almost always having strong feet. If *laminitis* exists do not risk it. If navicular disease is so confirmed as to make the horse unrideable, even supposing the operation to fail, you will be no worse off than you were before; and very likely you may ride your horse for another two or three seasons.

I am persuaded that half the failures of neurotomy are owing to the horses being worked too soon. There should be perfect rest in a loose box

(1) i. e. horse-dealers of the lowest stamp; though *coper* really means simply a dealer. *Copenhagen*, *Cheapside*, the English family name *Coppinger*, all come from the same word signifying a merchant. Ed.

for at least two months, and then very gentle exercise gradually increasing.

It is better never to operate on a horse with a naturally bad action, and above all things don't nerve a horse who hits himself, or even "goes close" in front. Such animals are nuisances at the best of times, and not worth risking failure with. Besides if they give themselves a rap on the end of the nerve, it is very painful to them, most unpleasant for the rider, and more than all tells the tale to all knowledgeable spectators.

If, when your horse comes into work, you perceive a thickening in the hollow of the heel, you may consider that you have failed. He will soon go lame and get worse; he will do a little harness work, but the end is at hand. If nothing goes wrong in the first nine months, you may consider you have scored a success, but whatever else you do, never let a drawing knife touch your horse's sole or frog. I believe that in an article I wrote more than a year ago on horse-shoeing, I spoke very strongly in regard to this even with sound horses.

Some years ago I remember seeing a horse which had been lately nerved. By order of the operator, the soles were pared thin and a very heavy set of shoes put on.

I was not surprised when enquiring about the animal, a little time after, to hear he was dead.

When resting after the operation, of course the patient should be barefooted, and the toes kept sharp with a rasp. How to shoe him afterwards is a matter of taste.

Now, as an ounce of experience is equal to a ton of theory, it may be interesting to hear of a case or two of nerving which have happened in my experience.

No. 1 was a fair steeplechaser. He came of a family famous for navicular, and was nerved as a five year old on the near fore. He raced and was hunted till he was twelve. He went lame latterly, and was winning a three-mile steeplechase under 168 lbs. when he broke down; the *perforans tendon* being ruptured about the middle of the foot, possibly sawed through by the navicular bone. Of course his career ended then, but on the whole, nerving was a success with him, as he lasted six years after it, and had he been shod in modern fashion might have gone on still longer. But in those days (25 years ago) the horse's sole was supposed to give way to the blacksmiths thumb, which gave a rare chance to navicular disease.

No. 2 was a six year old which had been nerved about a year before I saw him. He was a perfect success never lame through two seasons, and was a good hunter and hack, sold as such, and was not returned.

No. 3 a mare with, according to the vets., navicular disease. She had been nerved eighteen months when brought to my notice, went through two seasons hunting to my knowledge, and sensation returned with no return of lameness.

No. 4 was a mare, aged. She used to fall in her gallop. After the operation, she galloped and jumped perfectly, besides hacking well, but sensation returned very soon. The fatal thickening of the heel appeared, she was lame again and took to tumbling as before. She was a failure. These are personal experiences. But remember two things: "If 't is to be done 'twere well 'twere done quickly," and on the other hand, do not forget when done it cannot be undone.

W. R. GILBERT.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

BREAD MAKING

This ought to be a worn out subject, but it never can be so long as there are people who do not care, or have no ambition to do well.

Flour, and time, are wasted by these people, while others lack the knowledge how to act in a case of emergency. Careful people will carry out rules to the greatest nicety, but still quite forget that every day is not alike, and to ensure good bread attention must be given to atmospheric influences as much as to anything.

One day may be cold and raw, and the dough must be well covered and placed out of draughts. There is no danger of this on a fine summer day, but it is just as well to put it in some corner where it will be free from any mishap. I have known Miss Pussy to find nice warm sleeping quarters on the blanket that covered the dough. If there is no cover to the bread-pan, which should always have a number of holes in the centre to let out the surplus gas, it is well to place a few sticks across to keep the weight of the cloth off the dough. To ensure good bread, there must be a good brand of flour. Fine pastry-flour will not do this alone, but a little mixed with the coarser sort will ensure

a whiter loaf. Before starting the dough, sift, or rub the flour lightly with the hands, at the same time mixing in a little salt, this will disperse any little lumps that may be in it. Now, make a good sized hole in the centre of it and pour in about half pint of luke-warm water; begin to make a batter with a spoon or the hand, keep adding more water, one quart in all as the batter thickens, until about one-third of the flour is used up. Then, pour in slowly mixing all the time one teacupful of good home-made yeast, or 1 cake of Fleischman; continue mixing, drawing in flour all the time, and adding more water, till the flour is all employed and the dough is in a nice waxy state. Only a slight sprinkling of flour is wanted to keep the dough from sticking to the hands. Next, turn the dough out on to the paste board and do the rest of the mixing, wash and grease the bread-pan and there will be no sticking to it the next morning neither will a crust form on the top; cover and mix into loaves in the morning early, dividing the dough up, and put them into well greased pans half filled; set aside to rise till the tins are full and bake in a moderate heat for about one hour. Very little flour should be used in mixing, as it makes the bread taste of uncooked flour. Grease the hands, and in working press lightly on the dough.

HOME MADE YEAST

Two well-cooked mashed potatoes; one teacup of flour; one teaspoonful ground ginger; one level tablespoonful of sugar; mix together. Boil one handful of hops 10 minutes, strain and pour the liquid over the other ingredients, mixing about to ensure the scalding of the flour. When the mixture becomes a fairly good batter, set on one side to cool, then add one teacup of yeast or one cake of Fleischman's; be certain the batter is cool or the yeast will be scalded. Set by to rise once, then set in a cool place. This will keep good for a fortnight if put by in a broad-mouthed corked jar, after the fermentation has finished.

HOME MADE SUMMER DRINKS.

GINGER BEER.

Three gallons of water; five pounds granulated sugar; seven fair sized lemons sliced up; three oz. well bruised root-ginger. Boil one hour; when cool, add three-quarters of a cake of Fleischman's compressed yeast dissolved in half a teacup of

luke-warm water. Pour this on the top of a large slice of toast floating in the beer. Let it stand in a warm place thirty hours, and then strain and bottle for use, corking and tying down each cork. This is good to drink about one day after bottling.

CIDER CUP

Mix together one bottle cider, two bottles soda water, quarter pint of Japan tea, two ounces of sugar, one wineglassful of brandy; a few slices of cucumber, a sprig of lemon verbena. The sugar must be added last. Ice according to taste, with lumps of ice broken up. (*Borage* is always used at the Greenwich "White-bait" dinners, in place of the lemon-verbena. But there is no borage here.—Ed.)

CHICKEN SANDWICHES.

Take half pound cold chicken, without the skin. Two of ham, one teaspoonful parsley, one quarter teaspoonful lemon peel. But these through the mincer, once or twice. Now, mix in one oz. of butter, a little pepper, a very little grated nutmeg, salt, and a small teaspoonful of lemon juice. When well mixed, spread the mixture on slightly buttered bread, and serve in the usual way.

SUMMER GOWNS.

A graceful and simple style of gown for country wear can be made of either serge, brilliantine, pique or linen. The skirt is plain, almost tight-fitting. The waist is bloused, but the fulness at the back is drawn down into the belt. The front of the bodice is especially pretty. It is opened at the throat to show a white chemisette, and has wide revers of white pique or of silk of some contrasting colour.

Another charming model for a light cloth gown is made of cloth of a bright blue or tan. The skirt is trimmed around the foot with two rows of rutching of narrow black taffeta ribbon. The bodice is tight-fitting and made with a basque effect, belted. It fastens over at one side, and has some points about it like the Russian blouse that was worn a few years ago. The trimming of the bodice is also of the ribbon rutching, put on in a fashion very becoming to the figure—with on the shoulders and then tapering in of the waist, with two other bands put on to give the effect of a bolero jacket.

LITTLE GIRL'S FROCKS.

The most sensible plan for an every-day frock for a little girl, is to have it made with gored skirt and bodice something on the plan of a shirtwaist, but without the pointed yoke in the back. With this can be worn merely a belt and collar of bright ribbon, or if it is desired to make it look smarter, a collar of embroidery can be added, with cuffs to match. A bright red gingham dotted with white made up in this fashion often looks smarter than a much more elaborate and fussily-made muslin trimmed with ruffles of lace and ribbon bows.

Wash black calico or muslin in sweet skim milk, diluted with a very little water, using no soap. Rinse in milk, to which has been added a liberal allowance of bluing. Dry wrong side out in the shade; dampen evenly, and iron on the wrong side.

For sunburnt hands use plenty of lemon juice, then rinse in clear water before you touch them with soap.

This paint is especially good for worn kitchen floors that are somewhat rough: Dissolve two ounces of glue in hot, not boiling, water, stir in three pounds of yellow ochre and two pounds of dry white lead. Apply with a paint brush, and when dry, with a clean brush give a coat of boiled linseed oil. If the paint is badly worn off, two coats may be necessary before applying the oil.

Beat a carpet on the wrong side first, and then more gently on the right side. Beware of using sticks with sharp points, which may tear the carpet.

TO BATHE AN INVALID.

How to bathe a convalescent whose skin cries for water, but who is not yet strong enough to bathe herself, is a very simple art, the exercise of which will bring a large measure of gratitude. The tub is, of course, out of the question, so towels and basin take its place. Slip the garments from the patient and cover with a blanket. Begin with the face, washing it carefully with a little alcohol mixed with the water, and dry thoroughly. Next take the neck, chest, and sides; then the arms, one at a time, but be sure to let the towel follow the sponge too quickly for chill to ensue.

Then cover the upper part of the body with a blanket, spread a bath towel on the sheet, and wash the legs one at a time. Last of all, turn the patient on the side or face and bathe the back, giving it plenty of friction. Then dress the patient for either bed or sofa, and you will see a look of relief and satisfaction on her face which will repay all trouble.

SLEEP-INDUCING METHODS.

An article in the *Lancet* gives some points on the inducing of sleep which will be of interest to all victims of insomnia. So vital is the necessity for sleep that any method by which it can be secured is worthy of attention. The means employed is to produce weariness by muscular exercise after retiring. Lying on his back the patient first reaches for the foot and head board at the same time. He then raises his head half an inch; at the same time he breaths slowly and deeply about eight inspirations to the minute, which are counted. After about twenty inspirations the head, which begins to feel heavy, is dropped. The right foot is then raised (the reaching for the boards and counting being continued) and similarly dropped when fatigued. The left foot goes through the same process. The muscles which are used in reaching for the head and foot boards are then relieved, and the body is elevated so that it rests on the head and heels. He then turns on the right side and reaches for the head and foot boards again, and raises first the head and then the foot as before. The same process is gone through on the other side. Thus eight positions have been assumed, and a large number of muscles used. If sleep has not been induced the same cycle is gone over again.

TO KEEP AWAY MUSQUITOS.

A package of gum-camphor is a good thing to slip into one's trunk in summer. It is a hint from an Adirondack guide that a small piece of the gum, about the size of a walnut, burned over a candle so as to produce smoke, but not flame, will drive away for that night at least, all mosquitos in and about one's apartment.



The Poultry-Yard.

FEEDING YOUNG CHICKS.

An incubator may hatch ever as well, and a brooder do its part of the work successfully, yet, if the chicks are not well looked after and fed properly, one cannot expect to be successful in raising them. There is a great difference in the manner of feeding chicks, almost as many different ways of doing so as there are breeders. Nor is there any regular rule for diet that is always carried out, I have decided to give you my own experience with that of other breeders.

It is a well known fact that the chick is excluded without having the least desire for food. Scientists say that the chick has been given by nature the power of absorb the contents of the yolk before being excluded, therefore needs no food for the first twenty-four hours. Some say thirty-six hours after exclusion is soon enough for the first meal, but I have generally fed after twenty-four hours have elapsed, if possible. I leave them in the nursery for a short time, then confine them to the hover until they get used to it, then let them have a free run. In the nursery I put a little bran and hay or oat chaff, so that when they have a desire to eat they have something to pick at ; I give first a little granulated oatmeal and skimmed milk to drink. This meal is kept before them for a week, to help themselves to when they please. At the same time they are fed a week with a cake made as follows : 2 lbs of corn meal, 2 lbs of fine oatmeal, 1 lb. of middlings, 1 lb. of bran, $\frac{1}{2}$ lb. of fine ground bone, $\frac{1}{2}$ oz. of bicarbonate of soda, 1 teaspoonful of salt, $\frac{1}{2}$ oz. of Sheridan's Condition Powder (if in cold weather, or when needed) ; these ingredients are thoroughly well mixed together and kept in something, and placed where it will be keep dry, and away from vermin. When this is done, I use enough of the meal to make a good size cake about $\frac{3}{4}$ of an inch thick. It is either mixed with milk or water, with sometimes a egg or two, to the consistency of a thick batter, and baked until crisp, brown, and dry enough, to grind in a hand-mill in particles $\frac{1}{4}$ size of a coffee bean or even smaller. I feed this every day, the first two weeks every three hours. The third week every five hours, alternately giving chopped onions, cabbage, lettuce and apples, when to be had at a

reasonable price, milk to drink as often as possible.

I have had Black Minora chicks at 36 days old weighing 18 oz., America's White Wonder at 39 days weighing 16 oz. I also, three times a week, feed a little cooked meat chopped very small ; rolled oats, and cracked corn alternately kept before them. Hay or oat chaff is kept on the floor which is first well covered with coarse gravel and sand. Millet-seed, a tablespoonful at a time, is thrown among the chaff, that, with the small seed in the chaff, keeps them in exercise when confined in the brooder house, during cold weather or when it is raining.

If compelled to raise young chicks in a small yard, I put a couple of cart loads of sand in a corner and sow wheat, oats, or buckwheat. When the grain begins to grow or sprout, they will scratch over the sand and eat up the sprouts with great enjoyment, thereby getting exercise as well as green food. The brooder must be kept perfectly clean ; in hot weather cleaned every day, in any case every other day. No bad odors must be allowed in or about the premises. The drinking fountains well cleaned and washed every day, fresh clean water supplied often ; decayed vegetables or tainted meat must not be used at any time, all food must be as sweet and clean as your own.

S. J. ANDRES.

The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

The *Philadelphia Record* says: "Mr. John Parry, of Schuylkill Falls, has the champion rosebush. It contains 9,600 blooms, hundreds of people visit it daily." In Massachusetts, this has not been equalled but they are very numerous, and many of the Crimson Ramblers have hundreds of the most beautiful glowing crimson flowers, and what renders the variety the more valuable is that it lasts longer in bloom than any other outdoor rose; does not appear to be damaged by rain or sunshine, and the bush is perfectly hardy without any protection in winter.

The fruit and other crops in New England.

A drive through that part of the New England states traversed by the Central Vermont and Fitchburg railways, is sufficient to show that the

season is an unpropitious one for the crops. The cold spring was succeeded by a long season of drought, in consequence of which the grass did not grow and in many places the meadows are as bare as in winter. Many farmers have given up all idea of harvesting any hay, and the supplemental forage crops are making poor growth.

The fruit crop, too, may be set down as a failure. Blight and caterpillars have got in their work on fruit and foliage, and the extreme changes of temperature prevent what remains from growing luxuriantly.

Toads.

Very interesting experiments have been carried on for sometime, with regard to the use of toads as insect destroyers. Careful observation of their habits, and examination of the contents of their stomach, have demonstrated that their food consists of 70 per cent of the worst insects that damage our crops. So the ugly fellow, which our forefathers used to look upon as a poisonous and repulsive creature, may prove to be one of our best friends, and if the fabled jewel is not in his head, he can contribute to our welfare by his natural habits and teach us not to judge our friends by outside appearances.

The Angora Goat.

A plan is on foot here, considering the increasing demand for the Angora Goat's hair, to make them a part of the farmer's live-stock. It is said that they are very hardy as regards the cold, and will eat herbage and thrive upon it which cattle and sheep would reject. In Texas, Oregon, and Idaho, there are thousands of them, and they are found very profitable. How would they suit some of the back county farmers of the Laurentian hills?

Hopedale, Mass.

This is a model New England manufacturing town, situated in Worcester county, about 18 miles from Worcester, and the same distance from Boston. The whole township, with one or two exceptions, belongs to the Draper Manufacturing Co., and there are now over 1,500 men employed in their factory, where looms and cotton making machinery are made and shipped to all points of the world. But it is the town itself which is the most interesting, and the public spirit of the proprietors. The whole place is like a pleasure ground. The houses, with the exception of one large boarding-house, are detached or semi-

detached, and are surrounded by a lawn and vegetable garden which the tenants are encouraged to keep in order by annual premiums. These are awarded to those who have done the best work. This gives a healthy change of occupation to the workmen, and to the industrious a supply of fresh vegetables for their families. Every homestead has an abundant supply of water, and a hose by means of which the lawns can be sprinkled; each man has a lawn-mower, and the lawns are all kept regularly cut. One feature that, to my mind, detracts from the picturesque effect is the entire absence of fences. It is true there are no animals to roam about and commit depredations, but fences somehow seem to give a home-like appearance to a country residence, and makes its owner seem not quite so much of a cosmopolite. It is said that cleanliness is next to godliness, but the authorities of Hopedale seem to have placed cleanliness first, for the streets are watered all day on Sunday. There is a handsome Unitarian church opened last year, and a new free public library is in course of erection. No one can help admiring the public spirit which pervades all classes, and they are proud, as they may well be of beautiful Hopedale.

RAISING GERANIUMS FROM SEED.

ELEANOR M. LUCAS.

It is a very interesting operation and may prove quite remunerative. If a new or odd geranium is produced florists will pay from five dollars up for the stock, depending upon the value of the variety as a novelty. The seeds may be bought, or if one has some choice varieties, experiments in hybridizing may be carried on. This is done by using a tiny soft brush and transferring the pollen from one blossom to the pistils of another. To prevent interference of the work by insects bringing pollen from other plants, tie some small pieces of oiled tissue paper over the flowers treated, and allow to remain until the seed vessels form. One often obtains beautiful results from these crosses with characteristics of both parents, or as often again the plant is a failure as far as novelty is concerned. One cross may not bring any apparent result, but by repeated crosses, keeping some distinct object in view—as size or color of blossom, form of leaf or foliage—one may in time approximate an ideal plant.

Having obtained the seed I take a shallow box about 6 x 18 inches and bore in the bottom 6 or 8 holes. The bottom is then covered with an inch of broken charcoal. This is covered with two inches of coarse manure or barnyard litter, rather fresh to produce bottom heat. Four inches of good loam, rather sandy, follows. This is made level and free from stones. On it the seeds are scattered, covered with half an inch of loam and the whole is watered with very hot water, as hot as the hand will bear. It is now covered with a pane of glass and placed in a sunny situation. I usually sow my geranium seeds in April, as they will then be fine plants for winter blooming. In from four to six days the seedlings appear, the soil is kept moist (always watering with warm water) but not wet, and they are well covered at night to avoid the cold. As soon as the seedlings appear, I remove the glass, or they will be weak and spindling. When the plants have developed four leaves, they are transferred to 2-inch pots, filled with good soil. The best soil for this purpose is a leaf mold or a sandy loam, not too light, but at the same time not clinging. Add to it about one-eighth part of manure that is well decomposed. To each bushel of this mixture add a four-inch pot of bone dust and a five-inch pot of soot. Mix well together. Put plenty of drainage in the pots.

Place in a shady spot for a few days until the plants have recovered from the shock of transplanting, then give sun and water in abundance. Encourage a fresh healthy growth by liberal shower baths, and at the end of five or six weeks the pots should be full of roots. Transfer to 4-inch pots with rich soil. Give a dose of liquid manure once a week, and at the end of two months or perhaps six weeks, the pots are again filled with roots. Transfer to 6-inch pots, and continue the treatment. When these pots are about filled with roots, the geraniums will bloom. I nip off all but one flower stalk; this I allow to perfect. If my plants show indications of some beauty or rarity I grow them for winter blooming.

The pots are plunged in the ground, in a sunny situation, and turned occasionally to prevent the plants from rooting through into the earth. The plants are well sprayed, and given a weekly dose of liquid manure. The strong, rank growing shoots are nipped off, likewise all the buds. About the beginning of September they are taken up and out of the pots, repotted into larger pots with

fresh earth, started into growth and on the approach of cold weather brought inside. They make a fine display all winter, and the following spring cuttings are rooted and sold, or the plants are entirely disposed of and a new lot started.

If the plants after the one stalk has bloomed do not promise well, I transfer them to the garden and let them bloom. In our climate, if the geraniums are cut back after the first frost and the roots well protected with straw or leaves, the plants come up in the spring and bloom all the season. These make a fine display and are excellent for seeding purposes. With patience and perseverance it is possible to achieve some excellent results, and the keen enjoyment of success alone will fully repay the trouble.—*New Eng. Homestead.*

AN EXPERIMENT WITH A NEW FOOD.

An interesting food experiment was conducted during March and April at the Kingston Military School with a new vegetable food called "Protein" or "Protose," with a view to testing its efficiency as a military food. Previously experiments had been conducted at Montreal and elsewhere in treating cases of diabetes, dyspepsia, and other diseases of nutrition with marked success.

At Kingston, five candidates offered themselves for treatment from among the men of "A" Battery, Royal Canadian Artillery. These men took absolutely no other kind of solid food, either vegetable, meat or fish, for a period of twenty-one days in one case, twenty-eight in another, and thirty days in the remaining three. At the conclusion of the test the men stated that their hunger had been appeased, their bodily force fully sustained, their general health improved, and they felt no craving for other food during the whole period of the test.

The maximum amount of food taken was seven to eight tablespoonfuls of powder, and two to three slices of Protose bread, or two or three biscuits per meal, the powder being administered in weak beef tea or hot water. The thin men gained from two to four pounds in weight, and those who were over-stout lost some of their corpulency, from which they derived great benefit.

An analysis of the food shows that it contains 85 per cent. of proteid matter, 8 per cent. of water, and the balance mineral salts and fats; experiments carried on for artificial digestion

showed that the food compared very favorably in this respect with beef blood and egg albumen. The Protose powder is said to be six times as nourishing as meat and seven times more nourishing than eggs, in the same quantities.

The discoverer of this new food is an Austrian. He has devoted a number of years to its study, and has obtained a proteid powder absolutely free from starch, which is the solution of the difficulty of nourishing a patient suffering from diabetes. It will keep good in any ordinary place for an indefinite period, and occupies less than one-fourth of the space of foods of less richness and nutriment. A factory for the manufacture of this new food has been started in Montreal.

The Farm.

CHARLOCK DESTROYING.

Demonstration on the Farm of the Agricultural College, Uckfield.

The large gathering of farmers and others interested in the destruction of charlock, or as it is locally known, kilk, attended this demonstration on the 17th inst. Mr. Strawson was present with a complete set of his horse and manual machines, which were shown at work, and which were thoroughly explained by him; as also were the mixing and application of the solution. Some days previously thirty-two plots of corn much infested with charlock had been sprayed with solutions of sulphate of copper, or sulphate of iron, in varying strengths and quantities. The Principal of the College, Mr. W. J. Malden, conducted the visitors round the plots and pointed out the effect of the dressings on the crops and on the weed. Most striking results were obtained. It should be stated that the solutions had been applied by the twin-spray, which had made excellent work for a hand sprayer; though when comparing the spray made by these and the horse sprayers, the superiority and the regularity of the horse machines were very noticeable. There was marked unanimity among those present as to the thoroughness of the effect of the dressings, and the sincerity of their expressions was emphasised by the large number of machines ordered by those present. Perhaps the greatest compliment paid to the efficacy of the

process was made by one or two who suggested that the weed had been pulled, so totally had it disappeared. It may be explained that throughout the plots, whether on oats, tares, or beans, the plots were divided by steps of unsprayed to show them in comparison. Eight plots were sprayed on the tares. Where 50 gallons of a 2 per cent. solution were applied to early spring tares, the rows of which were almost lost in the charlock, the charlock was cleared out, except where one plant had covered up a smaller one, and the tares showed up clearly in the rows, making altogether a thoroughly good piece. Very noticeable was a plot of tares, a very little above ground, in which the charlock was quite young, also being little beyond the butterfly leaf. A 2 per cent. solution had cleared the charlock, and left the tares intact.

Twelve plots of oats were sprayed. The first lesson learned on the oat plots was that where there is a crop some inches high—in this instance about 4 or 5 inches high—a 25-gallon dressing, although useful, was not sufficient; also that a 50-gallon dressing, although weak, cleared the land of the pest; also that a 2 per cent solution of sulphate of copper was practically as effective on the charlock as a 7½ per cent solution of sulphate of iron, while it in no way distressed the crop, while there was some tingeing of the oat blade by the iron sulphate. The most striking feature was the excellent effect of a 1 per cent solution of sulphate of copper at 50 gallons. It fell very little short in its effect on the charlock, and was absolutely unnoticeable on the oats. A general consensus of opinion was that in crops at this stage a 2 per cent solution at 50 gallons, followed by 50 gallons at 1 per cent in about a week, would absolutely destroy the weed, no matter how thick it stood; or a harrowing might be substituted for the second spraying. In either case the following up of the work when the weed was in an enfeebled condition would destroy all, without injury to the crop. It is obvious that where the weed is so thick that the small plants are covered by the big, occasional plants will not get enough to kill them. Even with this the plants left behind were so few that they could be pulled by hand at small cost. The beans experimented upon were on a neighbouring farm, and were practically enveloped in charlock. Very heavy dressings were applied, as much as 75 gallons of 3 per cent solution of sulphate of copper, 75 gallons of 6 per cent sulphate of iron, with the result

that the flat-leaved beans were strongly tinged. The charlock was very much affected. In the case of the beans, as well as in the case of the oats and tares, the plots were left to see the ultimate effects. Altogether previous favorable reports of the operation were quite confirmed, and a most instructive set of experiments instituted. The many visitors were much interested in the grass and other experiments in progress on the College farm, and the experimental fruit garden was much admired.

Cor.

FACTS ABOUT WOOL.

Hair only differs from wool in its physical structure; hence, while wool is the hair of sheep, strictly speaking the hair of certain kinds of goats, as cashmere, mohair and alpaca, and even of the camel, is generally classed as wool.

Some naturalists assume that there are only three original species of sheep, namely, the Ovis ammon, or argali, the wild sheep of Asia and America; the Ovis musmon, native of Southern Europe and North Africa, and the Ovis aries, or domestic sheep, which is the principal English and American variety. But from a more practical point of view there may be said to be no less than 32 varieties, four being found in Europe, 15 in Asia, 11 in Africa, and two in America. Such is the classification made by Archer. All these produce different qualities of wool, distinguished apart by the length, fineness, strength, elasticity, color, curl, of the fibres.

Wool also varies in quality on an individual animal. Thus the best comes from the shoulders, the back, the lower part of the neck and the upper part of the sides. All other parts give an inferior quality. These different sorts are gathered and separated by hand, and the work is called "wool-sorting."

As a rule, wool fibre has a diameter proportioned to its length—the shorter the staple the finer the fibre, and vice versa. The finest qualities of Merino, or cross-bred wool usually known as Botany wool, comes from Australia.

The average length of the various classes of wool may be taken as varying between $1\frac{1}{2}$ and 7 inches, and the diameter from 0.004 to 0.0018 inches. The following interesting data is taken from Bowman's "Structure of the Wood Fibre"—the "breaking strain" stated in grains, the

"elasticity" in percentage of length, the "diameter of fibre" in decimals of an inch.

Klad	Breaking Strain	Elasticity	Diameter
Leicester.....	502	0.284	0.001810
Southdown.....	86	0.268	0.000990
Australian Merino.....	50	0.335	0.000517
Saxony.....	39	0.272	0.500338
Mohair.....	586	0.299	0.001700
Alpaca.....	149	0.242	0.000526

—Country Gentleman.

Correspondence.

THE MODEL-FARM.

COMPTON, QUE., June 30th 1899.

A. R. JENNER FUST, Esq.

DEAR SIR,—Re your note under my article in June 1st No. of JOURNAL, would say, that your last tub of butter was natural colour, no artificial colour in it at all, the colour is even deeper in June but of course does not appeal to the most critical taste or "eye" whichever it would be termed.

Respectfully yours,

H. WESTON PARRY.

Business good, 600 lbs of butter every day from 13,000 lbs of milk. Pasturage scant, weather too dry.

CHATEAUGUAY, July 10th 1899.

My dear JENNER FUST,

Your favor of the 5th instant with a statement of my account, to hand; many thanks.

In regard to the clover trade, perhaps our clover would not bring so much, as the clover grown over there, as loose hay sells in Montreal market, at a higher price than present hay does; but nevertheless, if the people here would cut their clover in time, and cure it as it should be cured, there should be a good trade in exporting to England. One thing is very sure; people will not be bothered much with the curing of clover this year, as there is very little anywhere to cure.

I remain my dear Sir,

Yours very truly,

PETER MACFARLANE.

GROWING ALFALFA.

Two pieces of alfalfa, (lucerne) sown by us early this spring with oats, have come on finely, and the young plants are now two inches high. Knowing the nature of the plant to grow coarse and woody we took the precaution of seeding quite heavily, using at the rate of 30 pounds of seed to the acre.

The oats will be cut for hay when fairly in the milk, and the alfalfa given a chance to develop to its very best.

We are convinced that a hundred farmers ought to try alfalfa where one is doing it now.

A. E. Elford, of Holmesville, Canada, is a successful grower of alfalfa, and gives his method of procedure as follows :

"About ten years ago we determined to try this new plant, we had read so much about in the American papers, accordingly purchased a few pounds, and then made the same mistake so many have made and are making to-day—we mixed it with other grasses, so that if it did not come to anything we would still have something without it. For the first two years it did not amount to much, but as the clover and timothy grew thinner it grew thicker. When we harvested the mixture, the timothy and red clover were of good quality, but the alfalfa was more like small brush wood ; nothing would eat it. It grew in clumps, brittle and good for nothing. This was an object lesson. Alfalfa will not associate with other grasses. Its habit of growth will not allow it ; it is a very exclusive plant. We were not discouraged however with our trial. We experimented again and again, and this is our present method of procedure, which has given us the best results.

We sow with oats, barley or spring wheat, on soil well worked up and at the rate of 20 pounds to the acre. We sow in front of the seed drill, so as to have it covered sufficiently, then harrow and roll well. When we cut the grain the young alfalfa is frequently from twelve to fifteen inches high. It is disastrous to pasture it during the first fall ; in fact it should not be pastured for the first three seasons, if possible not to do so.

Especially during the first winter the young plant requires all the mulch it can have.

We keep several paddocks near the barn for the purpose of soiling our cows. We generally commence cutting the first or second week in May. At that time we frequently have it two feet high.

What we do not use as a soiling crop, we make into hay. For hay we cut as soon as the dew is off. It is preferable to cut no more than can be got into small coils before the dew falls in the evening. We commence to rake up and put into bunches when leaves are wilted ; if allow to lie too long the leaves fall off. Leave in small coil two or three days to sweat and cure. If weather threatens rain, put two or three coils into one. When sufficiently cured, haul to stack and salt lightly."—*Hoard*.

SHEEP WASHING.

A few years ago there was a movement in favour of relinquish sheep washing. The idea gained ground that the shock of an unaccustomed cold bath was injurious to ewes, and sowed the seeds of future ailments. This may be so, and certainly no chance of practice or custom can influence the fact, if fact it be. Having watched the effect of discontinuing the time-honoured custom for two years, I have been unable to notice any lowering of the rate of mortality in a large flock, or any lessening of the ills to which sheep are liable. On the whole, the price of unwashed wool scarcely seems to be compensated by increased weight, and therefore I return to washing. Ewes should be washed before weaning, or they may catch cold in the udder, which is rendered sensitive by distension. A sufficient time also should be allowed to elapse between washing and shearing, to allow the natural grease to rise in the fleece, and at least a fortnight should intervene between the two operations. This conduces to honest weight, for no buyer can object to a fair proportion of the lubricant which is naturally provided. Especially should Down sheep be washed, for the simple reason that they shear out so clean. There is little perceptible difference between a washed and an unwashed Down sheep when stripped of its jacket. To label such wool unwashed of course gives the idea of dirt, but there is none. The lower price therefore hurts the grower, and benefits the buyer too much. In the looser and longer-coated races the wool is dirtier, and grit penetrates to the skin, so that the sheep are difficult to shear, and show sandy on the back. We pay no more for shearing unwashed sheep, and this proves that there is no dirt. The land and the system of keeping must, of course, exert an influence, but when it is observed that the

unwashed wool is practically as clean as the washed, it cannot be right to omit washing, and enter the wool as greasy or dirty. The price of wool is now so miserable, that a serious deduction from the top tells worse upon the grower than formerly, and when it is very clear that the increase in weight from shearing in the grease compensates for the lower prices per pound, it is better to wash.

H O P S.

(By H. H. Cousin, M.A.).

MANURING.

The use of phosphates and of "dung substitutes" are two important branches of hop manuring, which have been carefully studied at experimental centres in Kent and Surrey. The following points have been already brought out, and merit the close attention of hop growers:—

(a) On a soil deficient in chalk. Lime is productive of a large increase in crop, used at the rate of 1 ton per acre in early winter (Farnham Selling).

(b) Gypsum appears to be detrimental both to the quality and quantity of the crop (Yalding).

(c) If dung be used to a moderate extent a special potash dressing is not necessary, and may affect the crop adversely.

(d) If dung be replaced by rape dust, with the addition of artificials containing nitrogen and phosphates, after two seasons a deficit of potash is likely to occur, and a manure providing this plant food should be applied (Marden).

(e) Phosphates increase the yield of hops, and conduce to a high content of preservative resins. On stiff soil 16 cwt. to 1 ton of basic slag per acre has yielded for four consecutive seasons an average increase of over 4 cwt. per acre (Marden). On light, chalky soils use 8 cwt. steamed bone flour and 6 cwt. superphosphate. On light soils deficient in lime use 10 cwt. phosphatic guano or steamed bone flour.

(f) Rape dust and fish guano yield a better return during the current season if applied in early winter (Farnham).

(g) Nitrate of soda and sulphate of ammonia up to 2 cwt. per acre may be used if supplemented with about three times as much super, or other

phosphate. Used in excess they conduce to a bad colour and quality of hop (Wye, Marden, Selling).

WASHING.

Steam, horse traction, or manual power, as the individual circumstances necessitate, are all available for the purpose of "washing" hops. We know of a garden of forty acres reputed to be one of the most productive pieces of hops in the world, which last season failed to yield a single pound of hops through neglect of washing. Such a lesson is likely to make the proprietor a regular and consistent exponent of "washing" in the future. Quassia and soft soap, paraffin, naphthalene emulsions, etc., are in general use, and growers are now past masters of the art of brewing effective washes for destroying "fly and lice." Of recent introductions liver of sulphur has probably been the most valuable. It is the very best means at present available for preventing mould and destroying red spider. The dose has to be carefully regulated to the weather, using 12 oz. per 100 gallons in hot, dry weather, and a maximum of 2 lb. with a cool damp atmosphere.

DRYING.

The use of recording thermometers has enabled the grower to arrive at an ideal curve of temperature for drying his hops, and the prospect of a higher and more uniform standard of drying is now open. The roller-floor enables the hops to be maintained in a whole, unbroken condition, and analysis has shown that such hops are possessed of a higher brewing value than those broken up by careless turning and handling. Various ingenious forms of exhaust fans, re-circulators, etc., are in use, and, when intelligently managed, have resulted in marked improvement in the process of drying, especially under adverse conditions of oast construction and weather.

HOP ANALYSIS.

The day is not far distant when the value of a sample of hops will be based upon the results of analyses rather than on the empirical and imaginative impression of human senses. The aroma or volatile oil is readily estimated by analysis, although the differentiation of the subtle variations of aroma possessed by hops of different sorts and origins is as yet beyond the power of the chemist. The bitter flavour and preservative

properties of the hop chiefly reside in the "soft resins," which are differentially soluble in petroleum ether. These valuable constituents are extremely susceptible to chemical change, and readily lose their antiseptic properties. Cold storage appears to be the best practical method of retarding this change and maintaining the preservative properties of hops in the store.

The space at our disposal does not permit a full discussion of these various points, and we put them forward merely as suggestive of the line of progress which is bound up in the future prosperity of the hop-grower.

STOCK BREEDING.

The inferior quality of stock one sees in passing through the country is plain evidence that the farmer does not consider the laws of breeding in his work and does not know their relation to the practice of agriculture. It has always been so in those countries where cereals grow luxuriantly. In such countries the opinion is frequently expressed that "live stock does not pay." That this is not true was pointed out to the farmers of Rome in the first century by Columella. Early English writers on agriculture also pointed out the same truth. Fitzherbert, in his "Booke of Husbandry (1532) says: "An husbände cannot well thryve by his corne without se have other cattall, nor by his cattall without corne, for els he shall be a byer, a borrower or a beggar." Stock raising must go hand in hand with grain growing to attain the highest success. Agricultural writers and stockmen are of one opinion on this point. Stock-keeping forms the true basis of successful farming. What is known to-day about stock breeding is based on the lines followed by successful stockmen who have found out their knowledge through patient study of experiments, aided by observation. The laws of breeding as thus formed are not theoretical but the result of practical experience, and are therefore worthy the study of the farmer and stock breeder of to-day.

"The object of the art of breeding is the improvement of animals in those qualities that have a definite value, among which are the production of meat, milk, wool and labor." Breeders have found it easier to develop and obtain the highest development of only one of these qualities, because there the combined energies all tend in one direction. Too often one quality has been developed

by breeders at the expense of other good qualities which they did not deem of importance. There are a very large number of breeders who hold that the development of two or more qualities in a marked degree in one animal is not impossible. It is certainly not against the known laws of breeding. It is possible to obtain them in a marked degree. The highest development will always be where improvement is attempted with only one character.

The art of breeding our common farm stock is something that requires more study and thought than is generally given to it. There is not a clear enough conception in the mind of the farmer of what he wants, i. e., of the type of stock he should keep, much less of the means to be employed in obtaining the desired end. Robert Bakewell, of Dishley Grange, Leicestershire, England, seems to have grasped the true meaning of breeding. He was the first man to form a definite idea of the type of animal he wanted to produce. Combined with this he seems to have had a clear insight into the proper methods to follow to obtain his ideals."

GREAT CROPS IN NEW ZEALAND.

If New Zealand farmers can grow such crops as are recorded in the following report, which has appeared in the *Sydney Mail*, it is a wonder that they do not increase their corn acreage: "There are some very heavy yields in the Tai Tapu district, New Zealand, this year. Mr. Cooney, M'Queen's Bay, off 150 acres all-round crop averaged 70 bushels to the acre. Mr. Thomas Macartney had 5,800 bushels of barley off 80 acres, one paddock of 15½ acres yielding 95 bushels per acre. Mr. Taylor-Hunter had 103 bushels of barley per acre on 12½ acres; Mr. G. L. Limbrick had 65 bushels of barley and his yields would have been much better only for the caterpillars. Mr. Thomas Leathem has 100 acres of magnificent crops of barley, wheat and oats on his Swamp Farm, which is estimated to yield over 100 bushels per acre, and on his Greenpark Farm he has threshed 70 bushels of barley per acre off 30 acres. Mr. George Witte has threshed 80 bushels of wheat off his large paddock." Such yields have very rarely obtained even in this country, though we have heard of 100 bushels per acre of Rivett's wheat.

HOED-CROPS AND THEIR PLACE IN AGRICULTURE.

(By the Editor).

(Continued from May 15)

THE SOWING OF THE SEED.

This operation varies according to the state of the seed, whether dry or steeped. In the latter case, the following is the best mode of proceeding: roll the drills, make a shallow furrow in the centre of each, with a stick or the corner of a hoe, not more than $\frac{3}{4}$ of an inch deep; sow the seed in this rut by hand, and after covering it in with a rake, pass the roller again over the drills. Rolling is a most important point in root-growing; by omitting it, a distinguished agriculturist at Lachine lost $\frac{1}{4}$ of his crop in 1888. (1)

The seed-barrow will sow mangels, carrots and parsnips, if the seed be dry. Every time we use an American seeder, we open the distributor two, or even, three holes more than the indicator points to. Of course these tools sow turnips and swede-seed famously, but the roller should always be used after them, and on a light land, it should be a pretty heavy roller.

Try to sow all the seed at the same depth, that it may all come up equally. There is nothing more annoying at singling time, than to find the growth of mangels of turnips uneven.

The steeped seed of mangels, etc., and the dry seed of turnips, will begin to show above ground towards the fifth day—sooner or later, according to the season.

The moment the rows of the young plants are visible, start the horse-hoe. This is the reason why we have so often recommended in the JOURNAL OF AGRICULTURE the drawing of drills perfectly straight; for if they have been well drawn, the horse-hoe can pass along the space between them without hurting the plants, even if, here and there, there is a yard or two of a row not up. (2) Immediate horse-hoeing is most important, and so much do we think of it, that where parsnip-seed, which takes a long time to come up, is in question, we often mix half a pound of turnip-

seed with the parsnip-seed, and the former coming up rapidly, allows the horse-hoe to be set to work the seventh or eighth day after sowing.

THE HORSE-HOE.

If the horse-hoe is properly constructed, that is, if the side blades are made with the right curve, it will cut, or rather pull off the sides of the drills, the second time it is worked, leaving only a narrow piece of earth, from an inch and a-half to two inches wide, for the hand-hoe to do. No *drill-grubber*, can work properly until the *horse-hoe* has thrown down the sides of the drills; after that is done, the former tool is useful enough, though we never could see the use of having two implements where one would do the work perfectly.

THE SINGLING OF ROOT-CROPS.

Mr. Stephens, in his excellent work, *The Book of the Farm*, objects to the deep hoeing of drilled root-crops, on account of the risk run of disturbing the dung. What he thinks a mistake, we think an excellent practice; for the more the dung is intimately mixed with the soil, the more freely will it impart its fertilising juices to the roots of the growing crop. Dung is applied in drills simply for economy' sake. In 1884, we were surprised to see the roots of white-turnips, as big as the stem of a common clay-pipe, running across 24 inch drills and, not content with meeting their neighbours half-way, actually invading their territory. The reason was clear: the horse-hoe had pulverised the middle-space, the hand-hoe had pulled down the drills, and the turnips were floating, so to speak, on a sea of mingled moisture and fertility which offered them every possible liberty in searching after their favourite food. (1) If this is true of turnips, it is ten times truer of mangels and swedes. Of these two, the best attainable crop cannot be grown, unless the drills be pulled down to the level of the dung, and the young plants, after singling, left so naked that an inexperienced observer would think them doomed to perish by drought.

There is no fear of this! Delicate as they may seem, in 24 hours they will be upright again, and all the part left bare of earth will, eventually, be converted into good cattle-food. The more deeply

(1) This season, the drills of the said farm were all rolled down with a heavy roller, and the carrots and swedes are the proof of the utility of the practice.

(2) It would be well if the farmers at Ste-Anne de Bellevue would attend to this.—Ed.

(1) These turnips, grown at Sorel, were *on the table* six weeks and two days after sowing, and most delicious they were.

you hoe, the more completely you draw away the earth from the plants, the heavier will be your crop.

WHEN TO SOW MANGELS.

In this part of the world, mangels cannot be sown too early. If the land is in good order, the first week of May is a good time. After the 25th of that month, we had rather sow swedes. The same may be said of the carrot and parsnip. The *orange-globe* mangels is very superior in quality to the *long-red*, but, in this climate, the yield of the latter is so much greater than the yield of the former, that we dare not recommend sowing the orange globe.

THE CULTIVATION OF FIELD CARROTS.

We now come to the true "Dairyman's crop," the White Belgian carrot. It is white with a greenish-white neck, growing from 3 to 4 inches out of the ground. This is the carrot we prefer, and a valuable root it is; easy to grow, a large yielder, good in quality, and no more trouble to pull than a swede is. It suits itself to most soils, for we have seen 1400 bushels an acre on heavy-land. It yields better than swedes on light-sand, and, in spite of analyses, it is of far higher value for milch cows than the latter, though it must be confessed, its cultivation is a little more costly. It is the best of foods for the production of milk, since to it it gives richness and colour, while to the butter it never gives any bad taste. Is not this what all dairymen want?

HOW TO SINGLE CARROTS.

This may be made a cheap or an expensive job. If the fingers only are used, it will cost a good deal to single an acre of carrots; but we can show you a cheaper plan: that practised at Sorel. First, let us see what will be the best distance to leave between the plants, to get the greatest possible yield from an acre. We must not be guided by the distance left between mangels or swedes, for these plants do not send their tap-roots down so deeply into the subsoil as carrots. We think 3 Belgian carrots to the foot would be a fair average, were we certain the hoers would observe that number; but, unless we did the work ourselves, we are sure we should be disappointed, so we will say, 3 plants to 15 inches.

To single carrots at 5 inches apart, a special tool is required. The one we used was made out of an old scythe; it is $2\frac{1}{2}$ inches wide, and is kept very sharp. A woman cuts up the plants with

great ease, by alternate strokes of pushing from and drawing towards her feet. She is followed by a girl or boy, who pulls out by hand all the carrots but one from the tuft left by the hoer, and thus the operation is finished. The horse-hoe must of course be kept going as often as convenient to the farmer—it cannot be worked too frequently.—As to this point, the farmer must remember that even if the crop of roots is not tangibly increased (though it will be) by this constant stirring of the soil, all hoed-crops, well done by, have a special influence on the grain-and grass-crops that follow them; and although the weeds are destroyed during the process, this is only a small part of the benefit derived from the constant and seasonable use of the horse-hoe. M. Gustav Gylling, who succeeded us in the Lincoln-College farm, told us, and from what we saw during the growth of the crop we believe him, that in 1885, on the 5 acres we had cultivated the previous year in cabbages, swedes, white carrots, potatoes and mangels, the crop of oats yielded 70 bushels and the barley-crop 49 bushels an acre, i. e., 60 and 40 bushels an arpent respectively.

PARSNIPS.

The best of all roots for milch-cows, is the parsnip, but the seed is so dear here, the plant comes up so slowly, the singling is so expensive, and the getting out of the ground so troublesome, that we dare not recommend its cultivation. Steeped parsnip-seed sown by us in 1884, on land thoroughly well prepared, was six weeks before it showed itself out of the ground.

CABBAGES.

Excellent food for all kinds of stock. Towards the end of April or the beginning of May, a pound, or so, of cabbage-seed—St. Denis or Savoy—should be sown in a seed-bed, in the open air, in rows 10 inches apart and thinly. About the 10th June, transplant into well-manured rows, *rolled down heavily*, 24 inches apart, and 12 inches from plant to plant in the rows. Books and amateur farmers recommend 3 feet each way, but long experience has taught us that the distance we advise will bring the heaviest crop to the acre, and that those who follow the directions spoken of above, lose one-third of their land. To those who grow tobacco, it is advantageous to plant a row of cabbages and a row of tobacco, alternately. This leaves 48 inches between the rows of the latter: plenty of room for the man who prunes or disbuds it.

FARMER'S CLUBS.

St. Albert de Warwick's Farmer's Club, (Arthabaska).—*Experiment-field: Effect of artificial manures on wheat.*—An arpent of heavy land in two plots. The first plot, manured with 100 lbs. of super-phosphate of lime (probably mineral. ED.) and 75 lbs. of sulphate of ammonia, was sown with 45 lbs. of White Russian wheat (equal to $1\frac{1}{2}$ bushel to the arpent—about half enough. ED.), and yielded, at harvest, 750 lbs. of grain (25 bushels to the arpent). The standing wheat was from 50 to 52 inches high, and did not go down; the ears were from 3 to $3\frac{1}{2}$ inches long. The unmanured plot received the same quantity of seed, of the same sort, and yielded 365 lbs. of grain ($6\frac{1}{2}$ bushels), the ears being from 2 to 3 inches long, the straw 44 to 48 inches. The straw of the latter plot was not so good in quality as the other, and in comparison would seem to have suffered from bad weather.—AIMÉ LABERTÉ.

Aubert Harbour's Farmer's Club, Magdalen Islands.—The meeting held at Amherst, 14th December, 1898, was not very numerously attended, on account of the bad state of the roads; but there were members enough present to discuss and decide the more important of the questions. The board of directors was elected, and the programme of operations for 1899 drawn up. Among the subjects discussed were the means of inducing the people to take more interest in agriculture. It is by no means easy to break with the inveterate habits of routine. Indeed, up to the present, our people have hardly become used to the practice of farming, and the little work they do on the land is very primitive indeed. Still, I think that with some exertion we shall succeed in persuading the majority to attend more closely to their farms and to improve their methods.

We have organized this year ploughing matches, standing-crops competitions, and cattle shows.

W. J. SULLIVAN,
Sec'y of the Farmer's Club.

(From the French; by the Editor).

(Obs.) As to the quantity of seed sown to the arpent, we cannot help remarking that, in England, where the average yield of wheat last year was 33 bushels to the imperial acre, equal to 27 bushels to the arpent, no one would think of sow-

ing less than $2\frac{1}{2}$ bushels of spring-wheat to the acre on well manured land, and on land in not such "good heart," quite 3 bushels would be given. The later the seeding the more seed is required. It will be observed that no mention is made in the report of the date on which the wheat was sown, as if that was of no consequence, whereas it is most important; if 2 bushels of wheat is sufficient seeding for the last week in April, 3 bushels will not be too much for the last week in May: early sown wheat has time to tiller; late sown wheat goes right up into the seed-stem at once. ED.

Swine.**SOFT BACON.**

A great deal of interest in the production of bacon for the English market has been excited of late in our province. As every one knows, the trade is open to us on account of the superiority of our products to those of the States or Denmark. The farmers of the latter country, by the exclusive use of corn in fattening their hogs, have lowered their credit by sending a lot of soft bacon to England; this does not suit the taste of the English, and, of course, only sells at a very low price. Here, then, is an excellent opportunity, and we have only ourselves to thank if it does not turn to our advantage. The Ontario farmers have seized upon the chance offered, and, seconded and encouraged by their Farmers' Institutes, have of late made immense efforts to oust their competitors and to take possession of the English market.

But the same obstacles that hinder the success of the Dane, threaten to encumber the onward stride of this novel trade of ours. Already we the packers beginning to complain of *soft bacon*. One firm, and that one the leading house in the trade, has stated that 20% to 40% of the bacon sides delivered in May, June, and past of July, was soft! This means that, during last year, a great quantity of inferior bacon was sent from Canada, and, although this was sold on its merits, still it was sold as Canadian, and, as such, did not add to our reputation; besides, the low price it fetched compelled our export-firms to lower their offers. This question, I need not say, is important, and the farmer, who intends to embark in this business, must, if he would succeed, study in the first place

how to produce *firm* bacon, fit to appear on the English market as a "first-class article."

Soft bacon is not necessarily fat bacon. A side of bacon may be perfect in every other point and yet be soft, and this softness may be observable before the salt is applied, but, generally speaking, shows itself during that operation. Sides that are apparently firm before salting, are often flabby after being taken out of salt. The value of a side depends upon its degree of firmness; if it is decidedly flabby, it is hardly worth anything.

And what are the causes of so much flabby bacon being produced? A great many causes have been assigned; the principal ones are the feeding pigs on corn, on clover, and not giving them enough exercise. Still, the opinion of experts on these points is by no means decided. In order to obtain positive data, experiments on pigs intended for bacon, were carried out in 1898 at the Ontario Agricultural College. These experiments embraced all the various forms of breeding and fattening practised, from weaning to marketing. The hogs were then sent to a packing firm, slaughtered, and each group was salted separately.

After the salting was over, each side of bacon was examined by experts, so that no mistake should be made as to its softness or firmness. Although, it must be confessed, the investigations were not very thorough, still the results were not devoid of interest, and, that our farmers may profit by them, we proceed to mention some of the more striking.

1. Although maize has been blamed as being the chief cause of soft bacon, still, if given, at the end of their fattening, to hogs that had had plenty of exercise before they reached the weight of 100 lbs., it does not seem to have produced bad effects.

2. In the case of hogs that had had no exercise, but that had been fed upon skim milk and grain before reaching 100 lbs., corn had no ill effects. Rape, too, used instead of corn, with grain, produced good results.

3. A third lot of hogs, confined in sties without exercise, fed on bran for the first period, and fattened on pease, barley, and bran, with neither whey nor skim milk, produced bacon that turned out decidedly soft.

4. Another group, fed as the preceding one, but with freedom to roam, gave firmer meat than the confined lot.

The results drawn from these experiments are: Whey and skim milk seem to have greater effect

on the firmness of bacon than exercise; in other words, a judicious mixture of whey and skim milk with the grain may neutralise the bad effects of want of exercise. A ration composed of 3 lbs. of milk to 1 of grain produces satisfactory results.

Hogs, whose growth has been rapid, give a bacon firmer than that produced by hogs whose development, from some cause or other, has been impeded.

One fact, encouraging enough to our dairy-farmers, is that continuous rations of skim milk or whey, even without exercise, produces bacon of the best quality. Maize, in these experiments, produced no bad effects; but there is no doubt that had these hogs, during the earlier months of their growth, been fed on grain, the results would have been different. That maize given to young pigs produces soft bacon, has been proved most conclusively in Denmark.—CHARLES MORTUREUX.

(*Trans. from the French by the Editor.*)

FEEDING PIGS

It is impossible to raise swine successfully in large numbers without giving them skim-milk or butter-milk, or a good run of clover, or other suitable pasture when the young pigs are growing. Where pigs are put in pens and fed on grain only from the time they are weaned, a large proportion of them will become sick and go off their feet before they are fully fattened. Hogs should never be given more feed at one time than they will eat clean and still have an appetite for more. Over-feeding keeps the hogs from being active in taking exercise; and that causes them to grow too fat and soft. It is a good plan to feed as much as they will consume and digest to advantage. That will keep them hungry for every meal. Experienced feeders claim that regularity in the time of feeding will cause more rapid gain in weight than when there is irregularity even to the extent of one hour in the meal time. The feed of swine should be reasonably clean. It should certainly never be in a putrid condition.—Extract from Report of Commissioner of Agriculture.

The results of a feeding experiment with pigs have been recently given to the public by the Purdue University Experiment Station, Ind. Two lots of pigs as nearly equal as possible were chosen. Lot 1 was fed equal parts by weight of corn

meal and shorts, while Lot 2 was fed corn meal only. The feed was weighed out and mixed with warm water. The feeding period lasted for 70 days. The pigs in Lot 1 made a total gain of 353½ lbs, or an average daily gain of 1.68 lbs per pig ; while those in Lot 2 made a total gain of 326¼ lbs., or an average daily gain of 1.55 lbs. per pig. The pigs in Lot 2 did not always eat with as good an appetite as those in Lot 1.—*N.-W. Farmer.*

STATE OF THE CROPS. — NOXIOUS WEEDS, ETC.

To the Editor of the JOURNAL OF AGRICULTURE :

DEAR SIR, — In my last notes I made mention of the drought. It is now the end of June and still we need rain very much. There has been very little fall since April. Small fruits, hay and late sown grain are suffering for rain, and even if it should come copiously, these crops would not benefit much by it. The season has got so late.

The tent caterpillar that has disappeared flourished in the dry weather. So, now, we have the potato-beetle to keep us from idleness. A Mr. Hughes, of Montreal, gives it as his opinion that we shall be again visited with the caterpillar this fall. I hope he is mistaken in his prophecy, but time will tell !

A gentleman, who does not believe in draining, said, when I was putting in a tile drain some three years ago, in the orchard at home, what are you draining that land for ? I am sure, water will never do any harm there, it is too dry now. I replied : very true, but if my land is properly drained it will stand the drought better when it comes. He smiled a very knowing smile, and went away thinking there was something wrong in my upper-story, but if he could visit me now, he could see for himself. But it seems hard to make people understand, especially if they do not want to. But this is wandering from my text.

Wheat.—Doing fairly well, because sown early.

Oats.—Last year, lots of grain was eaten with a grub, but there does not seem, to be any damage done this year from this cause. Early sown grain looking fairly well ; late, very uneven and will be a very light crop.

Barley.—I saw the first piece headed out the 23rd June, not much sown, doing fairly well for the season.

Pease.—Very little sown, doing fairly well. (1)

(1) Pease are the only crop between Ste-Anne and Montreal that looked well on the 4th July. Ed.

Buckwheat.—Only just sown, too dry to come up very evenly.

Corn.—This is just grand corn weather, dry and warm, doing exceedingly well, and quite an acreage of it, too.

Potatoes.—Are looking remarkably well, but rain is needed, or they will be like the Irishman's : put up in blessed mouthfuls.

Other roots.—Are suffering too with the dry time.

Apples.—There will not be a very big crop this year, not over half an average. In many sections where the caterpillars got their full swing, the trees are now sending out another crop of foliage.

Small fruits.—Not a very good crop ; perhaps gooseberries will be an average yield.

Hay.—The hay crop in this section will hardly be half a crop ; very thin and short, though of very good quality.

Clover.—Very little except on new meadows.

Pastures.—Are beginning to dry up, so cows are shrinking in their milk.

Weeds do not seem to be affected by the dry weather. Wild mustard, sweet clover, couch-grass (chiendent), and daisy, all seem to be doing well. From the beautiful yellow fields of mustard that are growing, oh ! if it only were gold, many would not need to go to the Klondike. Farmers beware ! try sowing clean grain or clover instead of weeds, and see the difference in your pockets at the end of the year.

Butter.—There has been a great increase in the make of butter. The shipments from Montreal to Great Britain are some 20 odd thousand boxes ahead of last year, and the price is better too. As high as 18 cents and over having been paid for the June make.

Cheese.—The shipments are some 100,000 more than last year, and must be nearly equal to, if not ahead of 1897. The prices are and have been 1 cent per lb. better than last year, making about a million dollars more for the receipts of butter and cheese alone than last year up to this time.

The price of *hay* has also gone up at least one-third since last fall. Those who held their hay did well. I never would advise anyone to hold their produce except in a case like hay, last year, when it was away below its value.

Perhaps this is enough for this time. (1)

Yours truly,

PETER MACFARLANE.

Chateauguay, 30 June 1899.

(1) Never too much, at any rate. Ed.

Clover-hay was bought largely at Ste-Anne de Bellevue, for \$4.00 a ton, last winter. At the same date, best clover hay was fetching in the London market £4. 17. 6. per load, i. e. 2016 lbs; nearly six times as much! Ed.

The Dairy.

CANADIAN BUTTER TRADE.

Exports Increase about 1,000 Per cent in Six Years.

What Should be done to Secure the Principal Business with Great Britain.

Some six years ago British butter importers, those of London, especially, looked askance upon shipments of Canadian butter, and, in fact, it was a matter of difficulty to find any one who had a good word to say for it. To mention Canadian butter to a London importer in a large way was to touch upon a grievance, and complaints and attendant queries induced were many.

'The butter was of a distinctly inferior quality'; 'the tubs in which it was packed were ill-suited in every way for the trade, when compared with the 56-pound cube boxes in which butter was sent from New Zealand and Victoria'; 'the packing in paper was a bad system, and, in a great many cases, further deteriorated the quality of the butter'; 'only fit for confectionery purposes'; 'will not handle it at all, except on order'—all these and many more remarks were uttered in the autumn of 1893 by wholesale butter merchants of first standing in London to a Canadian newspaper man who was interviewing them on the subject. The importers further asked what the Canadians were about that they did not see the natural advantages they possessed for manufacturing a good article, and also why it was that Canada, having worked up such a trade in cheese, should not do the same in regard to butter.

Mr. William Gunn, of the firm of Campbell, Shearer & Co., butter importers, of London, who is at present in this city, in speaking to a *Witness* representative on the subject of the Canadian butter trade, alluded to the great changes in the same which have taken place since the period above mentioned.

'The increase,' Mr. Gunn remarked, is a won-

derful one. From 36,000 packages of butter exported to Great Britain by Canada in 1893 the quantity had increased to a total of some 350,000 packages last year—nearly ten times the export in 1893, while up to the present this year the quantity of butter already exported shows a material increase over the quantity exported up to the corresponding date of last year.'

It may be parenthetically remarked that every one interested in commercial matters is aware that this great increase in the export of Canadian butter is due to the inauguration of a better system of manufacture, the establishment of a refrigerator service for transportation by both sea and land, careful selection and supervision of the cows, well-appointed dairies, and the use of up to date appliances that in 1893 were conspicuous by their absence. Mr. Gunn, however, who is in a position to know all the ins and outs of the trade, while admitting this all round improvement, does not think that this country has yet done all that it can do in the matter.

'I must say,' continued Mr. Gunn, 'that the quality of Canadian butter is far from being perfect as yet. The Canadian product at present compares very favorably with that of Australia and New Zealand, and in some instances is not to be excelled, realizing in the English market prices equal to those given for the very best Danish. The uniform quality, however, must be raised.

'For some years past no less than £6 000,000 annually has gone to Denmark for butter, whereas although the export of the article on this side has increased no less than 1,000 per cent, the amount the Dominion receives for it is considerably under £1,000,000. There is no reason whatever why Canada should not take as good a place in supplying butter to Britain as she has done in regard to cheese. Both in quantity and quality Canada is able to rank first in the United Kingdom, and she possesses every possible advantage that can enable her to achieve this end, a good climate, a splendid soil, and an excellent water system.

'Australia, on the other hand, has to contend with inequalities of climate and meteorological caprice. Every now and then that country suffers from terrible draughts, and the recurrence of these prevents uniformity in its butter output. For instance, the output four years ago was no less than 13,000 tons in the year. Since then, owing to the prevalence of drought, the shipments have diminished fully one-third.'

'You have, I believe, Mr. Gunn, visited Australia and New Zealand, and have seen the system of butter manufacture in vogue in those countries?'

'Yes, I have, and I have also visited a number of dairies in operation in this country, and I am glad to say that those of the Dominion compare most favorably in every way with those I have seen in Australia and New Zealand.'

'Great Britain imports largely from the Continent. Is not this trade, by reason of cheaper transportation owing to shorter distance, government assistance and cheapness, too firmly established for Canada to compete with?'

'By no means. Great Britain can buy every pound of good butter that Canada can export. There is at present a vast quantity of oleomargarine used in Great Britain both in its ordinary condition, simply colored, and mixed with butter, in which latter case it is put up like butter and sold as such.'

'There is at present a bill before the House of Lords which will, when law, by forbidding the coloring of margarine, its admixture with butter, and its being sold after being thus mixed as butter, greatly diminish the sale of margarine in the United Kingdom, and thereby increase the consumption of pure butter. There is no likelihood, as far as I know, of any opposition to the bill, which will, no doubt, become law in due course.'

'I would say, then, that it is the duty of this country to try and be at the head of butter-exporting countries, as it is at the head of cheese-exporting countries. To do this she must aim at securing a uniform good quality and endeavor that export shall not merely consist of the best grade in a few isolated cases, and the bulk of a medium grade, but that the whole be of a very high standard of quality. In order to attain to this pitch of perfection, the animals must be above even the suspicion of disease, the sheds and stables must be always scrupulously clean, and the pasture and water both of good quality. Under these circumstances, with the other advantages the country possesses in respect to transportation, appliances and cold storage facilities, there is no reason to doubt that the export of Canadian butter to Great Britain will continue to increase, and that ultimately the trade will take the same relative position in respect to the same trade of other countries as that of cheese has done already.'

Witness.

CARBOLIC ACID FOR SPONGING COWS.

Kindly let me know, through the medium of your valuable paper, what proportions of carbolic acid and water I ought to use for sponging cows with to prevent abortion. How long ought they to be kept isolated after they have aborted? Would the same proportions of carbolic acid and water do for washing them with before turning them with the others.—CONSTANT READER. [Half an ounce of carbolic acid dissolved in two ounces of glycerine and then added to a pint of warm water is good for sponging cows both before and after abortion. After aborting, a cow should be isolated at least three or four weeks, and as much longer as any discharge from the vulva is observable.—A].

Treatment of milk fever by injections of Iodide of Potassium.—R. B.—In treating cases of parturient apoplexy (milk fever) by injecting iodide of potassium into the udder, the milk must be thoroughly withdrawn, then the outside of the udder and teats washed with a desinfectant, and $\frac{1}{2}$ oz. of iodide of potassium dissolved in about 16 oz. of water injected in the udder through the teats, using about one-fourth into each teat. The usual precautions as to keeping the patient warm, and well packed up with straw, etc., so that she does not get on to her side must be followed up, but the administration of medicine by the mouth is considered unnecessary, neither is bleeding permitted. The injection may, however, be repeated at half strength in twelve hours if necessary.—*Ag. Gazette.*

POTTING BUTTER.

"T. C." asks for directions for potting butter, and those already given are good as far as they go. But "An Old Hand" may be permitted to supplement with a few hints that may prove useful. In the first place the crock demands attention. It must either be absolutely new or so well preserved that neither crack nor chip can be seen in the glazing. It must be carefully scalded with thoroughly boiling water the day before it is wanted, and then filled up with cold till just about to be used. It should then be poured dry and sprinkled round the sides with powdered salt. When the butter has been made in the usual way, or perhaps even more carefully than usual, to free it from the buttermilk add to it at least $\frac{1}{2}$ oz. of salt, ground

very fine, per lb. ; work this well in, using the wooden spoon or clapper, and put away till next day. Then with the butter-worker roll it till dry and well mixed, otherwise the salt is apt to make it streaky, and pack very firmly, putting in one or two pounds at a time according to the size of the crock, and running the finger round the sides at every filling to make sure of no air getting in. After filling quite to the top, let it stand a day or two days, then slice off 1 or 2 lb. ; put this in a basin and stand it in the oven until quite melted. Allow the sediment to remain at the bottom of the dish (and perhaps some experienced and excellent butter-makers will be surprised to see how much there is) and pour the fine, pure, liquid butter on the top of the crock. Being freed from casein and other perishable constituents, this never goes rancid, and forms a fine top to the crock ; keeping absolutely fresh and preventing the air getting to the butter below ; a piece of thin muslin may be laid over to keep out the dust.

A. L. O. S.

TO THE MISTRESS.

Unlimited advice has been freely offered to the lady *domina* of our households as to the care she should bestow on the various departments under her charge. The parlour, the guest chamber, the kitchen, the pantry, the scullery, have all in turn been passed under review, and her duties, towards each and all, been severally pointed out to her. But it has been left to an "Idle fellow" full of "Idle thoughts" to say to the women of our homes, *House keep thyself!* Is not the hint a timely one? "My dear lady" he says, "you may polish your furniture till it shines again, but the most valuable piece of furniture in the whole house is going to rack and ruin for want of being seen to. Pause and look within. Do you not see that while your house is in apple-pie order, you are making everybody wretched?"

It is indeed too true. Are there not thousands of women in the world who are willing to spend and be spent, toiling in the kitchen from morning to night, and yet, as our author says, "render the whole feast tasteless for want of a ha'porth of salt ; for want of a soupçon of amiability ; for want of a handful of kindly words ; a pinch of courtesy?" Truly in labouring much for the meat that perisheth we forget to look after the

things that endure. In studying to please the senses, as if the world were made up of eating and drinking, and bodily comfort, we forget to appeal to sentiment, and fail to remember that "a dinner of herbs where peace is is better than a stalled ox and hatred therewith."

The true home, where "the children rise up and call the mother blessed" ; and the husband, with a grateful heart, declares that "a good wife is from the Lord," is not entirely made up of food and raiment and a never-ending sweeping and dusting, but in the brightness shed around her, who has its happiness in her hands, to mar or make—to frown on every pleasure or with kindly, sympathetic heart to seek to sooth every sorrow and make the bitter sweet.

Add this is no small task. It has been well said that it is easier to die a martyr than to live a saint, and the woman who manages to live above the petty cares and daily annoyances of a household, to endure patiently the contradiction of sinners, in the shape of unruly children and careless servants, with perhaps a cantankerous lord and master to study and keep in tune, would need to be a saint indeed, and be continually exercising restraint over herself and guarding against those too ready ebullitions of temper that leave such a sting behind ; bridling the tongue, and ruling the spirit "as one that keepeth a city."

As J. K. Jerome well puts it, "A little less care of your pots and pans madam, a little more of yourself, were wiser ; you had a pretty wit once, a pleasant laugh, a conversation that was not confined exclusively to the shortcomings of servants ; the wrongdoings of tradesmen. Try a little less scolding of Mary Ann, and practise a laugh once a day ; you might get back the dainty curves. It was a pretty mouth once." But enough ! Let me advise my lady friends, who have not the volume, to get it, and study the whole chapter. It is headed "On the Preparation of Love Philtres." Not the philtres the young sigh for to stimulate some "laggard in love," but the philtres that can keep evergreen that love when the charms of youth are past ; when the grey hairs and the sunken cheek, and the furrowed brow are merged, and lost sight of, in the graciousness of age and experience ; and the beauties of a mind at peace with all the world, itself, and Him, who is "the author of peace and lover of concord."

A. L. O. S.