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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

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THE
Journal of Agriculture and Horticulture

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Table of Contents

The Farm.

NOTES BY THE WAY.

"Weather in October."—Toronto, November 5.—The meterological department's weather report for October shows that the mean temperature during October was .56 ember 5.—The meteorological department's 59 years, and 5.8 higher than October, 1899. The highest temperature was 83.0, and the lowest 25.8.

The temperature returns for the month of October have just been compiled at the fire alarm department, Montreal, and show that it was the warmest October for twenty years. The mean for the month was 53 degrees, as against 52.01 in 1893, the warmest October since 1880. The mean temperature of other Octobers in Montreal averaged forty.

"Severe fine."—A farmer, named Gowling, was fined £120, i.e., $600, at Birmingham, last month for misrepresenting the age of a bull, whereby it obtained entry into a younger class than the one in which it was entitled to enter; consequently, having won the prize in that class, the animal sold for a far higher price than it would otherwise have fetched.

"The Chrysanthemum Show."—Very satisfactory indeed was the exhibition of the autumn-flower, at the Windsor Hall, Montreal, on the 13th, 14th of November. Anything more perfect than the specimens in

large pots it would be difficult to find, and, though we did not see the show of the Massachusetts Society, of which Mr. Moore speaks so highly in the present number of the "Journal," we do not think our Montreal exhibitors of "Chrysanthemums in 14 inch pots" need blush at any comparison between their plants and those shown at Hopedale.

A very lovely vase of cut blooms was shown by the Wilshires; the same skilful gardeners, who evidently possess great taste in decorations, presented a charming basket of mixed chrysanthemums and roses, and their "25 mixed ferns" were worthy of all praise.

"Forest and stream" exhibited largely; the 6 white and yellow blooms were very fine, as were the palms from the same club.

A magnificent palm, indeed, was that shown by Mr. John Walsh.

That very curious plant, the "Acalepha" ("c" hard, please, as, in the Greek original, the word is spelt with a "k"—"akalephe"), which, as we explained last year is a "nettle," attracted much attention. A knot of school-children on being told that it belonged to the "urticae" or nettle tribe, seemed to be afraid to approach it lest it should sting them! A curious plant, but, in our opinion, more curious than beautiful.

Why people prefer the loose yellow bloom of "Madame Carnot" to the lovely closely packed, incurved white bloom of the charming "Mrs. Robinson," we are at a loss to conceive. There must be some technical, recondite reason for it: the former needs more skill, perhaps, to bring it to perfection.

Mr. McKenna's carnations—four 1st prizes, if we mistake not—were lovely indeed; as was Mr. F. C. Smith's orchids and Mr. C. A. Smith's exhibit of "solanum" capsi "gastrum," with its wealth of bright red berries.

"Mon Chancelier vous dira le reste," as Henri IV used to say; which, being interpreted means: Mr. Alexander Gibb, of the Dominion Square Garden, etc., will describe the rest of the show.

What a price was that for a trotter! Forty thousand dollars! yet it was paid by Robert Bonner, of New York, for poor "Maud S.," once the Queen of the "road," hardly of the "turf," who died last spring, at the mature age of 26 years. Unfortunately, this valuable mare, though put to the horse several times, never would stand: a sore disappointment to her owner.

"Care of horses."—Plenty of walking exercise, a bran-mash every Saturday night, and no going out the next day for fear of catching cold, are the two secrets of keeping that most useful being, the veterinary surgeon, out of your stable. On non-hunting days, many of our best men in England give their hunters six hours walking exercise under a light-weight, and woe betide that light-weight if the stud-groom catches him moving his mount out of a walk!

"Fancy-cheese."—All "soft" cheeses, Brie Neufchâtel, Camembert, or used to be generically known, in England, by the name of "cream-cheeses," though a "cream" cheese is quite a different thing, being simply a lot of cream allowed to sour and become solid without the admixture of rennet.

"Camembert cheese is very good and is easily made; a gallon, or so, of milk at about 85 deg. F., with a teaspoonful of rennet; let it stand for a couple of hours or until the curd does not stick to the finger, then put the curd into tin moulds pierced with holes and fitted with movable bottoms and tops; when dry enough, rub the cheeses with salt and ripen them in a dark, dampish cellar. Fit to eat in about three weeks, when a green mould appears on the outside. We have made many a one and capital ones, too. The moulds we used were 6 inches high by 4 1-2 in diameter.

The following was sent us for publica-

tion ; the first recipe, it will be observed, is not " cheese " at all, but what is known in England as " curds-and whey."

" Fancy Cheeses."—At this time of year the farmer's wife, if she live near town, can pick many a stray penny by the making and marketing of little cream cheeses. They are easily made as follows :

Mix 1 pt cream and 3 cups fresh milk ; add 1-2 teaspoon liquid rennet. Whip the mixture thoroughly for three minutes, then let it stand for three hours, or until it is well clotted and firm. Turn it out in a cloth and spread over a sieve, to drain off the greater part of the whey. After this, tie it up in the cloth and hang it in some cool place to drip, like pot cheese. When it has drained this way for 12 hours, line little cups holding about a gill each with sheer buttered muslin. Season the curds with salt, and fill the lined cups. Put a slight weight on each one, and in an hour they will be ready to serve.

Another cheese is made by taking equal quantities of milk and cream, and for every 3 pts stir in four drops of liquid rennet. Beat all together until very frothy, then set it away to stand for 12 hours. Drain it and tie it in a cloth to drip 12 hours, then press it in cloth into a perforated mold large enough to hold it. After two hours take it out and rub it with salt, top and bottom, and lay it on a clean board in a well-aired place, turning it and sprinkling it with salt every 24 hours. At the end of three days the cheese will be ready for use.

FALL PLOUGHING.

To the Editor of the " Journal of Agriculture."

Dear Sir,—Some two years ago one of your readers found fault with me, that I did not give some hints or rules about ploughing, when I was supposed to give only an idea of the amount done. In this article, I may combine the two, and give some few necessary hints at all events as I see them from my standpoint.

There have been the usual matches held in different parts of our Province, and I also noted there was what might be called a Dominion one held near Ottawa, where there was a very large turnout. I also noticed that the Minister of Agriculture at Ottawa contributed to the prize list. The early part of the fall was too much on the dry side to make nice work ; but, nevertheless, I have noticed that where the land could be ploughed at all, there is usually a much better growth of grain the following year, than if the land had been ploughed on the wet side.

I suppose the frost gets a chance to pulverize the clay, while if the soil is very wet it freezes solid, and the action of the frost is lost.

Most of the farmers have finished their fall-ploughing, although there will be some laggards at all times. One farmer, a few years ago, below Quebec, when asked why he did not plough in the fall, said the land became too dirty, that is he had more weeds than when he only ploughed in the spring.

In my experience, the man who sowed his grain early, was sure of a better crop nine times in ten than he who sowed late. Of course, I will admit there are some exceptions to this rule.

When a farmer ploughs a field very early in the fall, it may grow up some grain and weeds ; but in such a case, another ploughing late in the fall would pay the additional labor, (good). The great trouble with most farmers they do not till the soil enough.

I was pleased, Mr. Editor, in noticing the very neat manner and the good kind of work done by the Indians of Caughnawaga. The ploughing by these Aborigines was better done than by the average farmer, they seem to take a pride in doing the furrow straight, and the shape of the ridge was so that the water would not lie on it. I can assure you it struck me quite forcibly, how I should like to show some of our careless farmers how well these people could do their work.

Some farmers say these ploughing

matches are a delusion and a snare. They claim they never took a prize at a match and they can grow as good crops as any one. Very true, I admit, but usually a man who is a good ploughman is a good farmer. The ordinary farmer, to my mind, never takes time to finish his ploughing as it should be done.

He seems to be in a hurry to turn over as much ground as possible in a day. When starting a ridge, a good ploughman will draw two small furrows and cover them both up, while the other fellow will be satisfied with one only, and then at the finish he never takes out the hinting, or crumb furrow, the most important to my mind. By this means, he argues, he saves a round on each ridge ploughed. He has saved a round, very true, but in what shape has he left his ground? The ridges lie usually flat and no hintings out; his field is covered with water more or less.

In the spring, he is delayed several days, perhaps a week, with the seeding and a very imperfect harvest is the result. Farmers will find out that, like every one else, what ever is worth doing at all, is worth doing well, and usually the better way is the best one in the long run.

I would suggest one thing before I close, and it is this: try and get as much fall-ploughing done as possible, especially in clayor heavy soil; plough when on the dry side, if possible at all; shape your ridges well and roundly; do not forget the hintings, and clear out the cross water furrows, and you may be sure in the spring to get such a field in early, and be assured of a better crop, than if done the other way.

Yours truly,

PETER MACFARLANE.

Note.—The "hintings" are what, in the South of Britain, we call the "crumb-furrow." Nothing surprises a stranger more, on visiting this country, than to see the number of acres everywhere lying all the winter just as they were left after the harvest. Ed.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

ABOUT HATS.

Many little novelties have come in with the winter fashions. One for hat trimming is a mixture of furs, velvet, lace, buckles, and silk, hemmed and tucked, which quill-up and form a pretty and most useful help where a little filling up is needed. Also cock's feathers of the same colour or of any colour suitable to the hat.

The old style of boat-shaped hat is the one most suitable to a girl who has rather a long face from forehead to chin.

Breadth is required for a thin face, hence the old pork-pie shape is by far the most suitable, the hair should be waved and well thrown back, to form a nice back-ground to the hat and face.

A felt hat needs little trimming, a rosette of satin or silk with a couple of quills to correspond with the colour of the hat, will be ample for a young face, which needs very little to adorn it, certainly not the heavy trimming with which some milliners at present delight to adorn a hat, which is very much out of place on a child and often makes her look top-heavy.

Expensive hats for ladies are made of a mixtures of many things and various colours so well mixed that they never show too much of either colour to kill the other.

Faded tints of old rose and brown, with a faint tinge of purplish red, sound rather a funny mixture, but wait till the milliner has plied her art on them; she will so twist and turn them till the eye can scarcely see where one begins and the other ends, she will know too just where to put in a delightful bit of soft lace or chiffon.

If fur is used it is usually to bind the brim.

A curious trimming is worn, made by the is a lining or tiny bolster to be put inside the muff and must have a frill at each end of a colour suitable to the costume worn with it, which frills can be quickly put on

when a change of dress is made. It adds to the many pretty bits of colour about a dress and will look well where a nice warm skirt of a warm tint is well made and suitable for the occasion, for none of these little fads should be thought of, but by those who can make the whole thing perfect, even the gloves and boots.

A curious trimming is worn made by the attachment of an ornament,or kind of tag, at the end of anything which has an end, they remind one of boot laces,only the tags are larger, and are made in many colours, gold, silver, black, and bronze, also gun-metal. These are usually attached to the ends of ribbon or velvet ; a bunch or bow of either is very much worn on the left side of the bodice to which it gives a very stylish finish and the tags help to keep the ends down.

Talking of fashions, we must not forget how very near we are to Christmas, and the young folks will be looking out and wondering what that delightful Santa Claus will bring them this time. The elder members of a family will be studying out the usual problem as to what they can make or do to surprise those who are dear to them. One thing is quite certain, the gift, however small, made by the sender is often more valued than a costly one bought, the former represents love, while the latter often only represents a valuable reminder of the season.

The young folks can find so many pretty things and designs just needing a few hours to make into a pretty and useful gift such as a centre piece for the table which needs only tracing-out with coloured washing silks to look lovely.

One of these in the centre and four smaller ones for the salt-cellars, will make a most acceptable and pretty gift.

Handerchief-sachet-and night-gown-holders, picture-frames, and many other things too numerous to mention, but that can be got at any shop : young folk should choose easy patterns ; make long stitches, and they will show well after the work is done !

A BOILED TURKEY.

A boiled turkey makes a pleasant change from the almost universal fashion of roasting. Hen turkeys are far away the best for boiling, and they should hang from four to six days before they are dressed. In large towns poultry is generally bought ready trussed ; but at Christmas time presentsof poultry often arrive undressed. Therefore I append a few simple directions for trussing a turkey for boiling. Cut the first joint of the legs off, pass the middle finger into the inside of the bird, and raise the skin of the legs, and place them under the apron of the bird. Put a skèwer into the wing and the middle joint of the leg and run it through the body and the other leg and wing. The liver and gizzard must be put in the pinions. Turn the small end of the pinion on the back, and tie the legs together at the end to keep them in place. Having trussed the turkey, wrap it in a clean cloth, and plunge it in sufficient hot water to more than cover it, and bring gradually to a boil, skimming well. Simmer gently for an hour-and-a-half or longer if the turkey is large. When done serve with celery or oyster sauce ; a small quantity should be poured over the bird, and the rest sent up in a tureen.

STEWED STEAK.

Fry about a pound and a half or two pounds of steak in two ounces of dripping; then put in a stewpan with a carrot, turnip, onion, and half a head of celery cut in slices, a bunch of savoury herbs, two pints of hot water, pepper, and salt. Stew gently for about two hours. When tender, place the steak on a hot dish, thicken the gravy with flour, and strain over the steak.

SCALLOPED OYSTERS.

Drain the oysters (for a few minutes only, as it is desirable to leave some of the liquor on them), season well with salt, pepper and mace and throw over them some fine cracker crumbs, tossing them about in the bowl until they are coated with the crumbs ; put a layer of the

oysters in the bottom of a buttered baking-dish, sprinkle over with crumbs, dot generously with bits of butter, moisten with the oyster liquid mixed with cream or milk, and dust lightly with salt and pepper. Repeat these layers until the dish is full, covering the last oyster layer with bread crumbs moistened in melted butter. Bake to a rich brown, cover, and stand for twenty minutes in the heater, that the brown crust may grow soft. The dish, if properly prepared, should be soft, moist and deliciously flavored, neither too wet nor too dry.

A BANANA TRIFLE.

Four bananas, six or eight slices of bread and butter, three or four tablespoonfuls of apricot jam, and one lemon. This will most likely fill a pie-dish holding one and a half pints. Well butter the pie-dish; line it all over inside with neatly fitted-in slices of the bread and butter. Skin the bananas and cut them up in fairly thin rings. Fill the pie-dish with layers of the bananas and jam, sprinkle on each layer a little lemon juice and rind, put a slice of bread and butter all over the top, and bake in a moderate oven till the bread is nicely crisped and browned. Then either serve in the dish or turn out.

BANANA PUFFS.

Make a dozen ordinary puffs, as for cream puffs. When cool, fill with the following: Four bananas mashed fine, with one cupful of sugar, two tablespoonfuls of whipped cream, and a spoonful of lemon juice.

PICKLES.

Spanish onions may be simply pickled. Cut them in thin slices, put a layer at the bottom of a jar, sprinkle with salt and cayenne, and repeat the process till the jar is full. Pour over sufficient vinegar to cover all, cork up, and the pickle will be ready in a month. Some people add boiled beetroot in alternate layers.

Red cabbage is thus pickled: Allow to each quart of vinegar half an ounce of bruised ginger, one ounce whole black pepper, and a little cayenne. Take off the outside leaves of a nice red cabbage, cut it into quarters, remove the stalks, and cut it across in very thin slices. Lay these on a dish, and strew them well with salt, covering them with another dish. Let them remain so for twenty-four hours; then turn into a colander to drain, and wipe each piece with a clean soft cloth. Put them in a jar; boil up the vinegar and spices, and, when cold, pour it over the cabbage. It will be fit for use in a week or two. A little bruised cochineal boiled with the vinegar adds much to the redness of the pickle. Tie down with a bladder, and keep in a dry place.

Coffee is a fairly good air purifier. A little burned on hot coals will purify a sick room, and abolish bad smells. Many physicians think highly of the bracing effects of coffee, taken before they visit cases of infectious disease. The grounds of coffee left after using the liquid are an excellent ingredient to mix with the earth used in flower pots. Our grandmothers' custom was to put it on the surface also, in order to keep the earth moist, and they had roses in bloom all the year round in their windows.

A BAD COLD.

The time to treat a cold is at the very beginning, before it has a chance to be serious, and your first object should be to promote prespiration. The treatment at the very beginning of a cold is simple enough. As soon, then, as you feel that you have taken cold have a good fire in your bedroom, put your feet into water as hot as can be borne, and containing a tablespoonful of mustard. Have it in a vessel so deep that the water will come up well towards the knees. Throw a blanket over the hole to prevent rapid evaporation and cooling. In from five to ten minutes take the feet out, wipe them dry, and get into a bed on which there are two extra bankets. Just before or after getting into bed, drink a large glass of lemonade

as hot as possible, or a glass of hot water containing a teaspoonful of cream of tartar, with a little sugar if desired.

CAMPHOR CAKES.

Camphor cake is a most useful article to have in the house at this time of the year, ing and roughness, and is most easily manufactured at home. You will need two it prevents the hands and face from chapp- drachms of pure white wax, three of camphor, and two of spermaceti, with an ounce-and-a-half of the best olive oil for mixing them. Place everything mentioned in a jam jar, and stand the latter in a pan. Pour boiling water round the jar until it nearly reaches the rim, but is not in danger of entering it, and let the water continue gently boiling until the mixture has dissolved and can be stirred together. Pour it off into small pots or tins, and when cold, it is fit for use.

The Garden and Orchard.

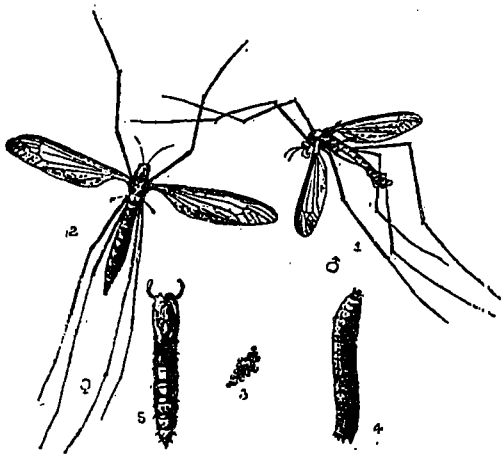
(Conducted by Mr. Geo Moore).

INJURIOUS INSECTS.

(Continued).

The Daddy Longlegs or Crane Fly.

(Tipula oleracea.)



1. Male.
2. Femal.
3. Eggs.
4. Larva.
5. Pupa.

(All natural size except eggs which are slightly magnified)

The larvae, or grubs, of the huge, awkward, long-legged fly known familiarly as "Daddy Longlegs," are frequently very destructive to various crops of the farm and garden. These grubs are called "leather jackets" on account of the toughness of their skins. They attack indiscriminately all kinds of corn, grass, turnips, mangels, clover, peas, beans, cabbages, and they are particularly fond of strawberry plants. But it is in pasture land that they do most mischief, sometimes destroying whole tracts of grass land in England, Scotland, and Ireland, as well as in some continental countries.

It is on record that in 1813 hundreds of acres of grass land were entirely destroyed by the grubs of the "Daddy Longlegs." and in 1842 much harm was also done by them; the grass had been eaten so bare that dust was blowing on marsh pasture land in the month of July, and stock keepers were at their wits' end to find food for their flocks and herds, in 1894 the same pest returned and did much mischief. The drier the grass land the more severe was the attack. As many as 200 of these "leather jackets" have been taken from a square foot of earth dug from the pasture.

The Daddy Longlegs fly is a familiar insect, but is very curious when closely examined.

The male is smaller than the female. The body of the latter has nine joints, is about an inch long and with wings when expaned two inches across; she has six very long legs; the hinder leg being the longer.

One female will lay 300 eggs and it is believed that they are hatched in about 15 days. The larvae lie in the earth during winter, feeding upon grasses near the surface while the weather is open and going deeper into the earth when frost comes.

The larva or grub is an inch long. It puts out at pleasure its black head furnished with strong jaws for grnwing.

Though it has no legs, it moves about easily and quickly. When it changes from the larva to the pupa spines are formed (figure 5) and by means of these the pupa works itself to the surface of the earth and

the fly escapes, leaving the chrysalis case sticking half out of the ground.

Prevention and Remedies.

Congenial habitations of the Daddy Longlegs flies are wet ditches, damp sides of hedgerows and headlands, marshes, and low-lying and undrained meadows. These are generally their headquarters and breeding places, and obvious methods of checking their increase are to keep ditches well brushed and cleaned out, to abolish hedgerows, where possible, or to keep them trimmed, and to drain wet land.

Very often the attack of these flies is upon field crops, following clover, or artificial grasses, whose herbage has induced the insects to deposit eggs, and has served as shelter for them. It is important, therefore, to keep clover and grasses down close before the land is ploughed in the autumn. Folding sheep upon such land is a capital mode of prevention. Egg-laying commonly takes place in the early autumn, and it is therefore desirable to plough clover and grass-leys early where there has been infestation, or where there is fear of infestation. Such land should be ploughed deeply and pressed to keep the herbage under, and the eggs deeply buried so that larvae cannot be hatched from them. Meadows and pasture land that have been infested should be kept well fed off throughout the latter part of August and during September. Wheat and oat-stubbles, where there has been an attack of these larvae, should be deeply ploughed in the autumn.

Where strawberry-plants have been injured by the larvae the plants should be trimmed close, and the spaces between them hoed or dug, or horse-hoed where large breadths are cultivated, and soot and lime applied, or gas-lime when it can be obtained.

Cricket grounds and lawns that have suffered from these insects should be frequently rolled and mowed with a machine during September and October.

If clover-leys, and other land for autumn sowing, are manured with farmyard manure, it is desirable that the mixens should be turned a short time before the manure is carted out, to cause heating, as stale mixens harbour weeds and the eggs of the Daddy Longlegs.

When an attack of these grubs is noticed in grass land a dressing of soot and lime, in the proportion of 1 part of lime to 2 parts of soot, should be put on. A mixture of one-and-a-half hundred weights of nitrate of soda and three hundredweights of common salt per acre has been proved to check the grubs, and at the same time to stimulate the growth of the grass.

Mangels are also subject to the attacks of these grubs. Frequent horse-hoeings have been found to disturb them, and dressings of nitrate of soda and salt in the proportions given above have been applied in such cases with success. Kainit, at the rate of 5 cwt. per acre, is a useful dressing.

Where injury is feared from this insect, owing to the appearance of unusual numbers of Daddy Longlegs in the autumn, it would be well to apply gas-lime to the land, or soot and lime or kainit; and in the case of pasture-land to harrow and roll it well.

The Queen of Autumn.

The Chrysanthemum, in the improved condition we now have it, may well claim this title, for it possesses a beauty, purity, and delicacy of colour in some varieties, and a majestic grandeur in others, which no other flower can approach.

The name is derived from two Greek words signifying a golden flower, many of the species of the germs being bright yellow, including the sunflower.

Chrysanthemums respond freely to the skill of the cultivator and of this fact greater advantage has been taken than perhaps of any other flower, luxuriance of growth and magnificence of blooms have been obtained by hybridization, the free use of manure, watering, disbudding, and training, so that the whole vigour of the plant has been forced into single blossoms with remarkable results as to their size and brilliancy.

Another advantage which belongs to the chrysanthemum is that it lasts much longer in bloom, and keeps fresher after being cut, than almost any other flower.

These remarks are suggested by the inspection of the most magnificent display of this glorious plant I have ever had the pleasure to behold.

The annual chrysanthemum show of the Massachusetts' Horticultural Society has been held during the last four days, from 6th to 9th inclusive, and has proved a brilliant success; words are scarcely adequate to convey a just idea of the beauty and grandeur of the exhibition whether taken as a whole or as individual specimens of the cultivator's triumph. The two Halls of the Society were full, the lower one being devoted entirely to cut blooms and the upper one to plants.

On entering the lower hall, the first object to attract attention was a grand vase of cut chrysanthemums. These were arranged, in one of the society's large vases, most artistically. It contained about 300 flowers on long stems, and measured over 5 feet across; each bloom was a perfect specimen, fit for exhibition singly, and of a nearly uniform diameter of 8 1-2 inches, comprising all colours. To this vase, the society's silver medal was awarded. There were four other similar ones in different parts of the hall, but the superior excellence of this was apparent. The other cut blooms were placed in groups and collections according to the class or colour to which they belonged.

The leading prizes for these were carried off by Mr. Alex. McKay, gardener to Mrs. A. W. Spencer, of South Franinghan, "Modesta" a beautiful clear yellow; Ureka, pure white; and Madam Perry clear pink, were amongst the most attractive, but to particularize the whole, where all were so near perfection, would occupy too much space.

In this hall there were some fine blooms of the last new rose "Queen of Ederley" which is the "American beauty" of a lighter shade of colour but with the same habit and character, this gained the society's silver medal.

There were also some plants of a new flowering Begonia, "Gloire de Lorraine," a variety with fragile stems, pale green foliage and pink flowers: a white variety of the same accompanied it, there is an air of delicacy about these Begonias which is very charming. Some new violets were shown which were very fine, large, intensely blue or purple, and most deliciously and powerfully fragrant.

I was very much interested in three fine plants of the Erica Villmoreana, both on account of their perfection as specimens and from the association's awakened in my mind of byegone days, because the variety was raised from seed about 70 years ago in my native place in England and by a gentleman with whom, when I was a boy, I was well acquainted. Mr. Willmore, whose name the variety bears, was a most enthusiastic amateur florist; he was a man of means and leisure and delighted in the culture of flowers and making experiments in the production of new varieties by artificial hybridization which he practised very successfully with many species of plants and notably Ericas and Camellias.

Mr. Willmore's seedlings were not raised "haphazard," but by purely scientific methods of crossing by transmitting the pollen of one variety to another, and by selection of the improved kinds produced, until his end was attained—as in this case.

By such methods, employed during the passing century by similar enthusiasts, the new and improved varieties of flowers and fruits have been produced which have placed floriculture, and the public sentiment in favor of flowers in so high a position.

But to return to the Chrysanthemums, the exhibition in the upper hall was all plants, and such plants; many of them 6 feet across and with hundreds of flowers on each. The flowers were not so large as those grown on single stems, but were none the less beautiful.

At the end of this Hall is a gallery and the scene as viewed from it could scarcely

be excelled in Floral beauty, which, when it was brilliantly lighted by electricity was simply enchanting.

There is no flower that has come into public favour more prominently than the Chrysanthemum, and richly it deserves it ; coming into perfection at a season of the year when all is gloomy, when the delights of summer have passed away, and the snow has not yet appeared.

A class of hardy chrysanthemums are fast coming into notice and can be seen in many suburban gardens ; the roots are perfectly safe from injury by frost, are perennial, and grown with but little attention, producing a profusion of flowers which last through the late autumnal months.

Florists are now turning their attention to these, and when we get a variety of colour, as we soon shall, they will be highly popular.

GEO. MOORE.

HOUSE PLANTS.

Now the house plants are settled again into their winter quarters, a few words about them will not be out of place. The first thing to be guarded against is dust, for do what we will, it will accumulate in living rooms, and nothing is more inimical to the growth of plants. They are, with dust covered leaves, like children with unwashed faces and hands, and cleanliness is as conducive to health and vigour in one as in the other. The surface of the leaves are covered with pores somewhat similar to those on the skins of animals and if these are clogged with dirt it is impossible for them to adequately perform their most important function of respiration. Plants with smooth leaves like the Camellia, Orange, Rubber, and some palms, can be kept clean by frequently sponging or wiping with a soft dry cloth, but those with rough, hairy, or wooly foliage should be frequently syringed with pure water. This can be done by placing a few at a time on the sink and allowing them to remain until they are dry before replacing them in the window. The next important matter to be considered is watering, this requires care and judgment. The question is often asked " How often should I water my plants ? " and the correct answer is "when they require it." This can only be learned by observation. The two extremes of dryness or continuous saturation should be avoided because if there is not enough moisture for the roots to absorb, to keep up growth, plants cannot thrive, nor can they, if the little spongioles at the tips of the roots are continually soaked with stagnant water.

To ascertain whether a plant requires water, it is well to take up the pot and feel its weight, then give it a sharp blow with the knuckles, and if it is light and gives out a hollow sound, the reasonable conclusion is that water is needed.

It is too common for the inexperienced to give the plants a little water at a time and this only just wets the surface of the soil and never descends to the roots so that, while appearing to be wet enough, the very part that requires it gets no water and the owner is surprised at his or her want of success, while the neighbour's plants are, for their beauty and health, the observed of all observers. Do not water the plants at any stated period, but when your observation leads you to the conclusion that they need water and then apply it in sufficient quantity to moisten all the soil in the pot, and not merely the surface. On the other hand, when saucers are used and the surplus water is allowed to remain continually in them, it will be apt to decay the roots and the plant will be in the same condition as a crop planted in undrained land.

If these two conditions of cleanliness and proper watering are faithfully attended to the difficulties of raising house plants will be, in a great measure, overcome and the occupation will be a pleasing one which will add to the enjoyments of the well regulated home.

GEO. MOORE.

OUTDOOR GARDENS.

For hardy plants all beds and borders should be well prepared and manured in the autumn, so that they will be in good condition to receive the plants in the spring. For ordinary garden soil, a compost of all the farmyard manures will be suitable, but for dry, hot soil cow, pig and sheep manure will be the most so.

Have the land well worked over to the depth of 18 to 20 inches and the manure well incorporated with the soil. This is a basis for the general run of hardy plants so that they can begin their growth as soon as planted therein.

Each group or family of plants require treatment peculiar to them, this must be studied and the soil prepared accordingly, so that they may be properly cultivated. For instance; the Rose family are all, what may be termed, gross feeders, that is to say will appropriate any kind of animal manure whereas to the Erica or health family, anything but vegetable decomposed matter would be destruction. This very divergence in the habits and requirements of plants is what renders their care and culture so fascinating to the enthusiastic cultivator.

Fruit Trees.

When the apple crop is heavy, the fruit is usually not so large and fine as when it is moderate as regards quantity. As quality tells now more than ever on the market it would be well to do all we can to secure it: this may be done by nourishing the trees with liberal mulchings of manure, keeping their bark free from insects, fungi or lichens, and careful pruning and spraying. Apple trees will not bear neglect any more than any other crop and will respond to due attention by improved quality as to size, beauty, and flavour of the fruit they yield. The same argument applies to all hardy fruits.

EXHIBITION OF MONTREAL CHRYSANTHEMUMS.

After an interval of one year, The Gardeners and Florists Club held their show in the Windsor Hall on the 12th, 13th and 14th of November. The Club was justified in incuring the financial risk, receiving rather more public patronage, enabling them to pay expenses and about 75 per cent of the prize money, the inclement weather was some what against a large attendance, and the exhibition was undoubtedly the best in every respect yet held in Montreal, or even Canada, and better plants or finer cut blooms of chrysanthemums have not been shown in America. The arrangement of the different groups was very effective, the cut flowers standing out prominently in a half-circle in centre of hall.

The formal opening took place on the evening of the 12th by Lord Strathcona, accompanied by Messrs. R. B. Angus, E. S. Clouston, W. M. Ramsey, Ex-Mayor Wilson Smith, and Principal Peterson; Mr. McKenna, the president, was in the chair.

Lord Strathcona in a few complimentry remarks referred to the reputation Canada had gained in the British fruit market; Canadian apples being more sought after than those of any other country. Without giving the prize list in full detail, the following were the most attractive features, and principal prize winners.

In groups, covering 35 sq. feet arranged for effect. Chrysanthemums and foliage plants. Sir W. Van Horne was first with an arrangement in which foliage had the preponderance over flowers, Crotons Difentachia, Draccena, Palms and other plants making a rather heavy effect. Mr. R. B. Angus being second with a pretty combination; Mr. Pinoteau, City gardener, 3rd, and Mr. Mussen 4th.

Groups of Chrysanthemums only. Mr. Thos. Peck was a first time winner; Mount Royal Park Greenhouses, 2nd; the City again 3rd, and Mr. Hall, of Outremont (another new entry), 4th.

Six specimen plants, 10 in pots. Mr. T. A. Dawes, Lachine, 1st, and challenge cup; Mr. Robt. Reford, 2nd, and Mr. A. Joyce, 3rd; the positions of the two first named were reversed from last show. Why? I don't know, the only advantage, "if an advantage" Mr. Dawes' gardener had, being in size of plants, G. Pascoe, Mr. Reford's man, having six of the most perfect plants yet seen here, they were judged on points, the latter losing by 3; he was afterwards awarded a certificate of merit for the best plant in the show, one of the six mind you, and they were all about equal, their names were Autumn Queen (new), a beautiful fringed pink. Mr. Weeks, white, ivory; J. H. Sprimpton, crimson; Mrs. Perrin, pink, and Gold Mine, a beautiful new yellow. The same exhibitor was also awarded a special certificate for an immense plant of Mrs. Weeks, 15 feet in circumference, said to have 300 flowers on it. The other chrysanthemum plants do not call for special mention excepying a single White, named Garza, the old Marguerite, in large type, shown by Mr. A. Joyce, amongst plants in 6 in pots, and a single pink named Mispah, a pretty thing (reminding one of the Old country perennial Asters), amongst C. A. Smith's small plants.

Cut Chrysanthemum Blooms, 12 flowers. W. J. Wilshire, with Mr. R. B. Angus, was 1st, wining 3 times consecutively, the first time this has happened in the clubs competitors, therefore owning the Strathcona Challenge Cup; The Forest & Stream Club came 2nd, Mr. T. A. Dawes 3rd, and Mr. A. Joyce 4th. T. McHugh with Forest & Stream Club also gained 1st in 3 blooms, each of White, Pink and Yellow varieties. W. H. Horobin, 1st, with 3 Crimson. The special certificate of merit was again awarded to var: Madame Carnot, grown by T. McHugh, as the largest and best flower on exhibition, being 18 1-2 in. in circumference; of course, tastes differ in what constitutes the most beautiful flower, and amongst so many beauties it is difficult to decide, a few of the most marked were, Leonidas, Dark Mauve, Intensity deep Crimson, Maroon, Minerva Yellow. Mr. J. H. Staring, White, Good Gracious, and some of the older varieties are still to the fore, as Golden Wedding, Mrs. H. Robinson, White, and Autumn Glory, Pink, Pride of Rycroft is a pretty white shaded yellow. There were, as a whole a grand lot of flowers, the incurved and more compact forms taking precedence over the loose and ragged varieties; the miniature ferns made a nice ground of green under the splendid heads of Bloom. The latter were from Mr. Jos. Bennett, McKenna & Son, John Eddy & Son, and Wilshire Brothers, Florists.

Miscellaneous Cut Flowers were in small display. Roses were almost absent, excepting in Mr. Alfred Wilshires' Mantle decoration, where he had a fine lot of Meteor, Crimson, with Foliage plants taking 1st prize, with Mr. Jos. Bennett as 2nd, with a rather heavy decoration.

There were some fine American Beauty roses mixed with yellow chrysanthemums, also shown by Mr. A. Wilshire, as baskets of flowers.

Wreaths and Baskets of flowers were a great advance on former years, no less than 12 entries being on hand. Messrs. Eddy, Bennett, and Wilshire being equal firsts for Wreath of Chrysanthemums, a new feature was pans of Ferns and foliage plants, so pretty for table and drawing room decoration.

Messrs. McKenna, of Cote des Neiges, had the whole display of Carnations to themselves, with good flowers of 25 each of the leading varieties.

Palms, Ferns, and Hanging Baskets helped to decorate the hall and stage, and toned the mass of colour, and were principally shown by afore mentioned florists, in addition to Mrs. W. W. Ogilvie, Mrs. Hugh McLennan, and Mr. R. G. Reid, Sir W. Van Horne's gardener, F. C. Smith, had the best six orchids in which Vanda, Dendrotia, and Oncidium were most beautiful.

Primula Sinensis. Spring is really a better time for these to be at their best. (What a pity we can't have a spring

show of bulbs, etc.), one variety of deep crimson shade was new and fine, also the blue variety, from Sutton & Sons strain of seed, and named Reading Beauty.

Solanum Capsicastrum were very good. C. A. Smith's plants being full of fine berries.

Three really good novelties were, Begonia, Gloire de Lorraine, with lovely clear pink flowers, almost hiding the leaves, shewn by Sir W. Van Horne, and awarded a special certificate.

Abutillon Savitzii, remarkably variegated, the white variegation predominating over the green of leaves, shown by Mr. J. Bennett.

And three plants of Gesnerias, grown by T. McHugh from Sutton & Sons seed, with pretty yellow and orange red spikes of flowers, a great advance on the old style of Gesneria.

Acalepha Saunderii was shewn with extra long catkins well coloured.

A curiosity was an apple gathered Sept. 1899, returned from the Paris Exhibition, and apparently sound, excepting a few wrinkles, of the variety Northern Spy.

The following gentlemen acted as judges:

For Chrysanthemums (plants and groups):

Messrs. T. McHugh and Geo. Coupland.

Miscellaneous plants:

Messrs. G. Stanford and J. Eddy.

Mantel decorations, Wreaths and Baskets:

Messrs. C. Campbell and J. McKenna.

Cut Chrysanthemums:

Messrs. Walter Wilshire and J. Bennett.

ALEX. GIBB.

Note.—A very good and full report. Thank you, Mr. Gibb. Ed.

The Dairy.

MILKING.

(Concluded).

This result is not only owing to the greater quantity of milk received, but, more still, to the fact that the last drawn milk is by far the richest. That this is the case anybody might easily ascertain for himself by pouring the very best and the very last drops of milk from the same teat into cream tubes. When comparing the tubes after the cream has risen, he will be surprised at the great difference in the thickness of the layers of cream; the milk first drawn looks, judging from the layer of cream, like good skimmed milk, the last milk drawn is more like thin cream. Through an experiment tried at an agricultural school in Denmark, it was found that the first streams of milk contained only 0.6 per cent. fat, while the last strippings of milk from the same cow contained as much as 10.2 per cent. of fat.

A thoroughly clean milking, therefore, is very important, not only as a means of developing the milking power of the cow, but also to produce richer milk. And the milker who does not give himself time thoroughly to milk the cow clean, either does not understand his duty or does not care to carry outhis work conscientiously. It is important also how often the cow is milked daily. Some experiments concerning this question have also been tried, which show that the more times a day the cow is milked the more and the richer the milk she yields. But whether one milks three times or only twice a day, the intervals between the milkings must, as far as possible, be of the same length. The cow is in a very high degree dependent on habit, and its udder works even and regularly. The milking hours, therefore, must be carefully observed, and the same persons must every time, in the same course, milk the same animal. If the milking is begun too late, the cow becomes uneasy, and the tension of the udder causes pain to the animal—in both cases loss of milk ensues. The fact that the quantity of milk is lessened by milking less frequently and less energetically is a thing of which one avails one's self when wanting to dry a cow. But even in this case it is a bad plan to clean strip the udder; it is by far preferable to milk less often, finally only once every other day, every third day, or more

seldom still, till the cow gives so little milk that the milking might be dispensed with altogether. During the beestings-period it must be considered not only wrong, but even dangerous often and hard to milk such cows which show any disposition for milk fever. According to examinations made by a famous Danish veterinary surgeon, this disease is caused by an increased activity in the udder, which must be considered still further increased by energetic milking. But for these two periods, when the cow is being dried and when she gives beestings (first milk), she can scarcely be milked too hard (that is too often and too energetically).

The milker must pay great attention to the cleanly condition of the udder and the teats. If he observes knots or tenderness in the udder, sores on the teats, the milk-canal stopped up, or the milk having an unnatural appearance, etc., he must at once tell the foreman. Diseases in udders and teats often being contagious, cows in that way infected must always be milked the last, and the milk from the affected part of the udder be put into a special vessel and destroyed, in order to hinder further spreading of the infection. The milk-canal in the teat is sometimes very tight (the cow being what is called hard-milked) or often shows an inclination to get stopped up. To use a straw, or such like, to widen and "cleanse" the canal is very bad policy, because in that way inflammation of the corresponding part of the udder might easily follow. A teat which has a stopped milk-canal must first carefully be worked or kneaded between the palms of the hands, and then carefully milked clean. A heifer is often sensitive for the milking manipulation, and this sensitiveness will sometimes last until she gets older; in this case the milker must be still more kind and careful at the milking; and means of restraint or force must be used only in case of great necessity.

Needless to mention, the greatest cleanliness must be observed at the milking. It would be desirable that every milker had at least two milking-gowns of washing material, in order that he or she might, at least every Sunday morning, appear in a clean milking-dress. Since the milking ought to be performed with bare arms, the gowns ought to be made with short sleeves, and in a way that they might easily be slipped on over the usual clothes.

All milking-vessels must be kept scrupulously clean, and should be made of tinned iron plate, and must not be allowed to get rusty. Before each milking the hands should be well washed, and also during the work—between milking different cows—they should be dipped in clean water and wiped as often as needed. For the sake of cleanliness the milking must be performed with dry hands; to moisten the teats with milk as some milkers do is very dirty, and ought to be strongly condemned. It is the duty of a cowman to keep the animals well cleaned. If the udder be dirty it must be washed with tepid water and well wiped with a towel before the cow is milked. Milk is very apt to absorb gases, and it is of great importance that the atmosphere in the cow-house, especially during the milking time, should be kept as fresh and pure as possible. Feeding and, of course, cleaning out the shed must never take place during the milking. The milking vessels when the milk is strained ought not to be placed in the cow-house, but outside in the pure air. Light not only promotes the inclination for cleanliness and work, it also acts purifyingly on the air. A cow-house which has plenty of daylight and, during winter, is well lighted morning and evening by good lanterns gives the best guarantees for a good and cleanly milking.

CHEDDAR CHEESE.

(Continued).

Straining Milk.

The milk when it is brought into the dairy is poured into a hoop temporarily fixed upon the sides of the tub and covered with a very fine muslin. This, whilst it ensures perfect straining from all large im-

purities, serves another purpose, in my opinion not less valuable than the mere straining out of these impurities. It is this, that from a careful examination is often obtained. Thus, if the cows are not well cleaned before milking, the fact is soon shown by the presence of extraneous matter in the strainer. If the cows are suffering from sores it will be known at once by the presence in the strainer of scabs from the sores. Any soreness of the teats will also be shown by the presence of small clots of blood. After a little practice, the cheese-maker will find a few moments devoted to the inspection of the strainer well repaid as indicating whether or not the milking has been carefully and properly done. Far more cheeses are spoiled before the milk comes into the dairy than by careless manipulation in the dairy.

Whether it is advisable that the milk should be carried into the dairy by the milkers is, in my opinion, doubtful. They are liable to bring in on their boots more dirt than is desirable. I am inclined to think the old system of having a shoot leading from outside the dairy to the cheese-tub is preferable. This would not prohibit the milk being strained before it fell into the tub.

Rennet.

The rennet which has been used at the Bath and West School during the course of these investigations was Hansen's extract.

The quantity which has been required has varied, not only at each cheese school, but frequently at the same school during the course of the cheese-making season. The reason for these fluctuations has been difficult to trace. It appears to depend particularly on the quality of the milk, thus in the autumn, when the milk is richer than in the earlier part of the year, the proportion of rennet required has at times, and as a rule, been smaller. Indeed when this has not been the case, I am of opinion that it has been due to some change in the rennet, which has caused it to lose its strength.

Although there can be no doubt that there is a close relation between the composition of the milk and the production of rennet required, yet it is difficult to find out what that relation is.

Results of experiments made at Long Ashton, in 1898, would point to the fact that the ordinary chemical analysis of a sample of milk is not sufficient to show this peculiarity of composition, though it evidently depends to some extent upon the proportion of casein.

Thus the abnormal milk yielded at Long Ashton, when treated with the same proportion of rennet as ordinary milk, took over two hours to set, whilst with ordinary milk the same proportion of rennet had not only set the curd, but this was ready to cut 45 minutes after renneting.

How to determine what proportion of rennet it is desirable to use would therefore appear to present some difficulty. It is generally believed that the milk of different farms requires different proportions of rennet. Reviewing the results obtained at the various cheese schools, it would appear that the quantity of rennet does not vary so much between different sites as it will actually on one and the same farm during the season.

The practical cheese-maker must therefore be guided as to the quantity of rennet to use by the time which it takes to set the curd, and must use such quantity only as will enable him to have a nicely firm curd, fit for cutting 45 minutes after the rennet is added to the milk. Once having found out by experience the proportion to use, the rennet measure should be employed subsequently.

If insufficient rennet be employed, the curd is soft, and unless sufficient time be given to the curd to properly set there will be a considerable loss of fat in the whey, as the curd will not be sufficiently firm to hold it. If an excess of rennet be employed, then, when the scald is applied, the curd is drawn together too rapidly and the whey is expressed before it has had time to perform its proper function, namely, to enable the bacteria feeding on it to bring

about the desired acidity within the curd. An excess of rennet, by contracting the curd with too much force, may also cause some of the fat to be pressed out of it and lost in the whey. This contraction takes place more rapidly, the greater the acidity of the milk before renetting. Hence, when the milk is very ripe, more than usual care should be taken not to employ an excess of rennet. On the other hand the use of too little rennet will cause the curd to retain too much moisture, to be soft, and therefore to subsequently develop acidity somewhat too rapidly, or in excess.

The influence of rennet on the time which the cheese takes to make is treated subsequently.

(To be continued).

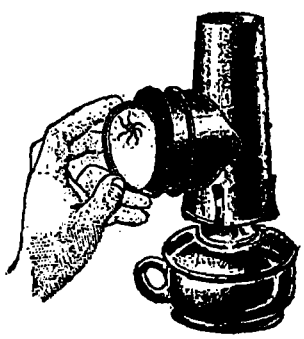
The Poultry-Yard.

(CONDUCTED BY S. J. ANDREW).

TESTING EGGS.

A Good Egg.

These illustrations may be fully verified when testing the eggs during the process of incubator, by carefully breaking the shells and exposing the embryo to view on a



EGG TESTER.

Showing a good fertile egg after five days of incubation.

shallow plate or saucer. It may seem at first a waste to do so, but it will pay in the end and make the study of the embryo more interesting to the amateur.

TESTING THE EGG.

Every person who wishes to be successful with an incubator should become acquainted with the development of the germ and the growth of the embryo. With a good tester you can follow the interesting stages of growth for days, and by making a note on the egg in pencil a novice will gain much information that will be useful to him in artificial incubation. The development of the chick is curious, and well repays the time spent in the study of it. Many poultry-breeders and beginners in artificial incubation do not take the proper interest in the development of the embryo; they are under the impression that the incubator "does it all"—that their only duty is to keep the egg in a proper temperature.

In testing your eggs for fertility you are also testing the laying condition of your breeders. If you get a test of 75 to 80 per cent. of fertile eggs your breeders are in good laying condition. If the fertility runs below 60 per cent. then the breeders are not in proper condition. Very often we find eggs only partly fertilised. They appear on first test to be all right, but later we find the germ has died. Such eggs should not be allowed to remain among the others, or, as they decompose they may spoil the adjoining eggs. An infertile egg will remain almost perfectly clear, and will not decay if left in the machine: yet it is best to test these out on the fourth or fifth day, when they may be sold as "case eggs" or kept to feed the chicks or ducklings for their first few days' meals. Hen eggs can be tested on the fifth and tenth days, duck eggs on the fourth, seventh, and fourteenth. Remember, by carefully notifying the different testings of the eggs during incubation, the owner will be in a position to tell "what moisture is required for best results, and what condition his laying stock is in." Duck eggs hardly hatch as well as hen eggs, for the reason that breeding ducks are liable to get too fat for a proper egg-production. Duck owners should feed properly, if they

wish for a good percentage of fertile eggs. Ducks, with all our care, do not "exercise" themselves like the hens; therefore our only chance is to feed properly.

In the first part and end of the season, the eggs of hens and ducks are not so fertile; therefore we must not expect 75 per cent. hatches every time. Many early eggs are only partially fertilised; therefore, many die during the early stages of incubat,on. In selecting eggs for incubation, do not use bad-shaped or very small eggs from any variety of poultry, neither should you use abnormal sized eggs or long narrow eggs that are not the normal kind that the variety lays.

It may seem very strange to many that brown-shelled eggs should not be incubated with white-shelled eggs. Leghorn and other white-shelled eggs "dry off" more quickly than brown-shelled eggs, so if you incubate the two side by side the moisture required for the one would be unsuitable for the other. I know that many poultry-breeders do mix the two coloured eggs, and often get good results; but if they incubate the two separately they will get better results.

All eggs intended for incubation should be perfectly clean, handled carefully, and if to be kept longer than seven days, should be shelved with the small end up, and at a temperature of as near as possible 60 degrees.

The Grazier and Breeder.

ECONOMICAL FEEDING AND HOW TO BREED, ALSO CARE OF THE DAIRY COW.

Economical feeding of live-stock is receiving more attention in our dairy schools at the present than in the past. The great object being to get the largest results at the least cost. Within the last few years much knowledge has been gained in preparing and balancing the food for the different animals; and with that knowledge, we receive as good results at about one-half the cost of former years. Our first object lesson we get from the laws of nature—"June Conditions."

When the weather is warm and the grass is in the best of condition, it is then that we obtain the very best results from our animals, which is more noticeable in our new milch-cows than in other animals.

Science teaches us that the food should be of a certain composition to obtain the object in view, whether it be milk, fat, bone, or flesh.

While the grass is green and tender all cattle do well, whether it is balanced scientifically or not; but as soon as the grass becomes dry there is a falling off,—this too, most noticeable in milch-cows.

Provision, therefore, should be made for this, so that a continued supply of green succulent food can always be had.

A farmer, with a silo can carry over a quantity of silage and by growing soiling crops, sown at different times, an say acre or so of peas and oats, mixed about one bushel of oats to two of peas, sown early in the spring and an equal quantity three weeks later.

This brings us to the fall, when the pastures are again green, and with mangels, rape, and corn, the cows should continue to give a full flow of milk, and the other animals should still improve with very little grain used if any, with the "June Conditions" maintained and the animals kept warm and comfortable.

No farmer can make farming pay unless he takes care that none of his animals is exposed to the cold, fall winds and storm.

Experiments have proved that cattle do much better when kept in a warm, well ventilated stabfe all winter without being turned out of doors and thus exposed to cold.

The preparation of food for cattle in winter will have to be varied according to the supply on hand.

For economic feeding, corn and clover silage is the most profitable crop a farmer can grow. With plenty of hay, roots, straw, silage and a little grain food, satisfactory results will be gained.

A great many farmers make a practice

of chaffing hay and straw to mix with silage and roots, which is a most economical way. Preparations for cut fodder are as follows :

1st.—Spread on the floor of the feed room a layer of cut hay or straw from four to five inches deep, over this sprinkle a little salt, estimating that each animal receives half an ounce per day. It is better perhaps to dissolve the salt in water and sprinkle it over the cut food with a watering can.

2nd.—Layer is silage about two inches deep.

3rd.—Another of cut hay or chaff.

4th.—A layer of pulped turnips, mangels or sugar beets one or two inches deep.

It should be prepared about twenty-four hours before using, so that the whole mass will become quite moist by the liquid from the roots and silage soaking through the cut feed, and the fermentation warming up the whole making it succulent like grass.

How and when to feed animals has much to do with the results. Cattle should be fed early in the morning, between five and six o'clock, at noon, and about the same hour at night. No feeding should be done "between meals." For best results, this is important.

For cows giving milk, the following rations will give satisfactory results at a moderate cost.

In the morning, twenty lbs. of the coarse mixture prepared as directed; if no ground grain and bran have been put in the mixture, about two lbs. of grain ground and one of bran mixed should be added to each cow's ration.

At noon, fifteen lbs. of mixture, and fifteen lbs. of sugar beets or mangels; the evening ration, the same as the morning.

The feeder must use his own judgment and give each individual animal an amount equal to its capacity and size, this ration being meant for the average cow.

Heifers and cows not in milk require only twenty-five lbs. of the mixture in the morning, and fifteen at noon, and twenty-five at night.

This is sufficient to keep them in good growing and healthy condition. It is understood that they are to be comfortably housed and not turned out of doors in cold weather, otherwise it will require an addition to the above ration grain to keep up the animal heat. While every provision may be made for the comfort of the animals, and the feeding done strictly in accordance with the above directions, the animals will not give good returns if they do not receive kind treatment. Milch-cows in particular must receive kindness; for instance : in June, when giving the largest quantity of milk, if brought from the pasture in a hurry by a person on horseback or a dog, and milked while still excited, the result will be about half the usual quantity of milk.

Any farmer who will abuse his animals, or allow them to be abused, had better go out of the business. He cannot expect good results for the food consumed.

In addition to the feeding and care, there is the question of the breed. The large black and white "Holstein" is no doubt the largest producer of milk, although as a rule it is not so rich in butter fat as some other breeds. The "Jersey" gives the richest milk.

In the selection of the dairy cow, consider the following points :

A head fine, long neck, large square udder, not fleshy, and barrel deep and round. There are other signs, all of which fail in some animals, since the ancestors have much to do in stamping the offspring.

There are also things to consider in developing a milker, one is to have the heifer come in at two years of age, and milk at least for one year continuously.

To decide on what breed to keep, be governed by your fancy and the market for which the produce is intended whether a cheese factory, creamery, or a home dairy; if either or both of the former the "Holstein" and Ayrshire will give the best returns. For a home dairy with an opportunity to work up a fancy city trade in cream and butter, the Jersey cow will answer.

There is an advantage in keeping pure-bred animals over grades; the calves are worth more. As a rule, a good pure-bred calf, a month old, will sell for as much as ten grade calves at the same age.

J. HODGE, Lennoxville.

COMMON DISEASES OF FARM ANIMALS.

Diseases of the skin.

Among domesticated animals diseases of the skin are extremely common. Under the ordinary titles of surfeit and mange, a variety of affections of the surface of the body are grouped: and although the scientific pathologist may be able to distinguish the various forms by the peculiar characters which belong to them, he is forced to admit that, so far as treatment is concerned, very little is gained by his more exact system of classification.

All forms of skin disease are associated with irritability, which gives rise to itching, to relieve which the animal scratches or rubs itself, and thus in many instances, increases the irritation, and inflicts further injury on the diseased parts. Sometimes when an animal is so situated, if it can find a convenient rubbing-place, it may continue the process with so much force as to cause considerable blemish. Nothing is more annoying to the owner of a good horse than the habit, as it is called, of rubbing the tail against the stall posts or any projecting body within reach, and the annoyance is aggravated when the mane also comes in for its share of friction.

Generally the attempt to discover the cause of the irritation, which induces a horse to rub the mane or tail, particularly the latter, is fruitless. The skin is very dense, with a large quantity of scurf on the surface, and the hair is thick and coarse. In no case within my personal knowledge, has there been any redness of skin to be seen, nor indeed any sign of disease; except the constant desire of the animal to rub the part, thereby indicating the existence of irritation.

In response to the natural enquiry, "Why does a horse rub his tail?" one has in the absence of evidence to resort to conjecture; and probably the first cause which suggests itself is the presence of parasites in the rectum; some are common in this situation, and in some cases their presence is indicated by a quantity of yellow dust round the anus. A microscopical inspection of this material will show that it consists of the ova of the worms, and with this fact made clear, there is no longer any doubt as to the cause of the irritation.

An examination of scurf from the surface of the skin should always be made to show if any fungi are present; and if this cause cannot be discovered, it may be presumed that some constitutional disturbance is concerned in the production of the local disease.

A cure for the habit of rubbing the mane and tail is constantly asked by horse-owners and in many cases difficult to find. If there is reason to believe that worms infest the terminal part of the intestine, a simple enema of salt and water will cause their expulsion, and probably cure the case; and as the remedy is simple and harmless, it may be tried in any case. An ounce of common table salt in a quantity of warm water will be sufficient for one injection.

Should there be any symptoms of indigestion, or if the horse should be very plethoric with want of exercise from too liberal feeding, a change of the system of management must be adopted, and some alterative medecine may also be necessary.

Some horses indulge in the habit of rubbing the tail apparently from some local irritation, the exact cause of which cannot be ascertained. In these cases various forms of local treatment are tried with partial success. One method of checking the habit, is to make the part which is rubbed very sensitive by friction with a small quantity of oil of cantharides, or any strong stimulant liniment, until the skin becomes sore. A daily repetition of the application will keep the skin so tender, that the attempt to rub the part causes

pain and the habit is interrupted. Sometimes the treatment effects a permanent cure, but in many cases the horse gradually acquires the habit again.

Puncturing the skin at the root of the tail has very much the same effect as the application of a slight blister, and both remedies probably tend to lessen the original irritation for a time.

A very simple method of checking the habit of rubbing the tail, consists in adjusting a rug and pulling it so far back that it covers half the tail.

This arrangement appears to disconcert the horse, when he attempts to indulge in his usual practice, and in most cases he desists and does not repeat the attempt while the rug remains in the proper position. In some instance, of course, this device altogether fails.

A very good domestic remedy for the common forms of skin disease attended with itching is a mixture of common flour of sulphur and any kind of oil : train oil is best but it is not always to be got. The sulphur is stirred into the oil, until a liniment of the consistency of a thin cream is produced. This mixture should be applied freely with a brush to all parts of the skin in which the irritation exists, and in a few days the dressing may be washed off with hot water and soap, and the application repeated.

Nettlerash is a very common disease in the hot season, or rather during frequent changes of temperature. Derangement of the digestive system is often the fore-runner of an attack of nettlerash ; but in most cases the eruption on the surface of the body is the immediate result of the checking of the functions of the skin by the action of cold air. Treatment of sudden attacks of nettlerash is generally successful, warmth, with a dose of bicarbonate of potass, being all that is requisite in most cases.

W. R. GILBERT.

The secretary treasurer of the Farmers' Club of Leeds, County of Megantic, writes to the Secretary of the Council of Agriculture :

" If you know of any Club wishing to purchase a registered Durham Bull, we shall have one to dispose of about October next. This Bull has been in use here for six years and is now seven years of age and quiet as a calf. We would keep him longer here but there is quite a number of his get that are cows now. The young bull that we bought is to take the place of one of our bulls next season. Our Club have now four splendid animals all of the Short Horn Breed, and it has been the means of improving the stock, as the buyers from different places know where to come for good steers."

The Flock

HAMPSHIRES UP TO DATE.

In Vol. IV of the " Flock Record " Mr. Wood says :

" The immediate interest of the country is not in the value of pure bred, but it is the value of pure blood when crossed upon common stock. There are millions of sheep in the country of all sorts and descriptions, and the great question is, how can the produce from them be made of the greatest value ? The value of the cross is what sheep owners at large are most interested in. What we want to know is which breed when crossed upon common ewes will give the most valuable lamb for the butcher, or when kept longer toward maturity will show to the greatest degree the quality and advantages of the pure-bred sire. In these respects all well-informed persons concede that the Hampshire has no rival. A reference to the reports of the leading shows in England will quickly demonstrate that Hampshire crosses take nearly all the prizes offered for cross-bred sheep. There is a vigor in a cross by this breed found in no other. This was recognized years ago, and the Royal Agricultural Society was urged to offer prizes for cross-bred sheep other than

Hampshire crosses. The argument was that unless this was done there was no inducement to exhibit others. An interesting illustration of the value of such a cross is shown in the Oxford-Downs. This breed, as is well known, was produced by crossing Hampshires with Cotswolds. It is an instructive fact that another cross of Hampshires upon Oxfords produces splendid results, as are often shown in the prize rings of the great shows.

"The report of the Birmingham show that appeared in the "American Sheep Breeder" for January 1897, states that 'Cross-breds were a fairly good class, Mr. H. Rush being in the front with his usual cross—Oxford tup and Hampshire ewes.'

"This fact is of the greatest importance to the country at large, and it cannot be too forcibly presented to the owners of the immense numbers of American sheep who need the best blood for crossing upon their flocks.

"While all this and very much more can be truthfully said about the Hampshire cross, it cannot be too strongly impressed upon sheep owners that a cross-bred ram should never be used upon any sort of ewes. When this is done the value of prepotency is lost. Heredity is like a composite photograph, in which the exposure of a dozen or more persons are made upon one plate, and the result is a face that combines all of them in itself. So with heredity. The hundreds of ancestors in the various lines have their characteristics focused into one animal. If those lines are pure in type and character the characteristics are stamped with force upon the progeny."

The Horse.

THE HORSES THAT SELL WELL.

The remarks in these columns from time to time in regard to the scarcity of really first-class horses of nearly every type has been confirmed from many sources. Last week Mr. Geo. Williams, Secretary of the Illinois Horse Breeders' Association, in a letter to the "Rider and Driver," confirms them in a very striking way. His letter is so much to the point that we give it in full as follows :

"During the talks I have inflicted upon the farmers, I have tried to impress upon their minds that we are now using up what may be called the last full crop of foals, that of 1894, and are spending our reserve fund of horses. As the foals from mares this year will take about six years to become marketable horses, they may well look forward to a scarcity before they are ready for it. I have also tried to sound a note of warning that they must profit by their former mistakes and not breed in the haphazard manner that they formerly did ; that if they breed for their own use or for the markets, it will repay them amply to breed for a type of horse that will sell well in the city market, if they are at any time lucky enough to have a surplus to sell ; to those who are breeding the American trotter to breed to the stallion that begets large and handsome colts, and not for speed alone ; to try and get the horses on their farms of one type, so that they will match up into teams more than they have in the past ; that the great nursery studs that breed for speed are not the ones to copy after, but that the general breeder must breed for size, style andbeauty, and they will find ready market for their stock even if it has not speed enough for the track. By persistently and consistently following out these lines, they will be able to hold the markets of the world that now are open to him. If in the "boom" days we would be in better shape to stand the strain of the shortage of good horses that is now upon us, and if in the past we had made size, style and beauty an object, instead of trying for speed, the breeders could now be getting good prices for their animals fit for coachers or the road."

GROOMING HORSES.

There are some duties connected with the care of horses in the stable which are by many either neglected or performed in a manner so perfunctory as to be of little real benefit to the animals concerned. Grooming is too often looked upon, even by those who should know better, as a sort of fancy process having for its object only an improvement in the appearance of the animal. It is, on the contrary, of the greatest importance to the health of a working horse that the dirt and scales should be removed from the skin, the pores opened and the sebaceous and sweat glands stimulated to perform their functions in proper manner. The most of the work should be done with the brush, with, of course, a liberal allowance of elbow grease. Curry combs (1) when sharp are apt to irritate the skin, although this objection does not apply to some of the modern modifications of that time honored tool. The mane and tail should be thoroughly brushed from the roots out every day. Mud should not be touched when wet, but left to dry, and afterwards brushed out. By following this last rule and eschewing washing of legs, except perhaps in hot weather, much trouble with scratches and cracked heels will be avoided. The nostrils, eyes and dock may be sponged clean daily. The sheath in the horse should be regularly washed out. Washing horses all over is neither necessary nor advisable, except in cases of skin disease or where vermin are present. Horses coming in wet from work should receive prompt attention, whether the cause is rain or sweat. The best treatment is to rub them till dry, but this is, of course, not always possible. They may be left, after a good rubbing, with a layer of hay or straw between the skin and a loose blanket. Collars and saddles should not be removed immediately from horses when the latter are warm, as galls are very apt to result. Clipping is useful in heavy coated horses called upon to do fast or heavy work during winter. It is best performed in early November, and I would strongly recommend leaving the hair on the legs below the elbows and stifles, as those parts cannot be clothed and do not sweat to any extent, while the hair is a great protection against cold and wet when outside. Clipped horses should be well clad in the stable and at all times when standing, even for short periods, in the open air. The clothing of unclipped horses is not a matter of great moment, provided their stables are comfortably warm. All clothing should be kept clean.

Horses require comfortable bedding ; for this purpose wheat straw is considered the best, as it is certainly the cheapest and most convenient material in this province.

The feet must be kept clean and whether shod or not should be carefully picked out every morning. Thrush is a very common result of neglecting this simple precaution. I need hardly say that even this will fail to prevent trouble if the cleanliness of the floor is neglected. When horses are not shod the feet should be trimmed at least once a month.

Every stable should contain one or more loose boxes, not less than ten feet square. Other stalls should all be single, about five feet in width and nine or ten feet in length. The floors of such stalls should slope about one inch in sixty. By having each horse in his own stall and tying with a block, instead of, as is usual here, to a ring, many distressing accidents will be averted.

"N.-W. Farmer."

(1) Should never be used except to clean the brush. Ed

Swine.

THE BACON INDUSTRY.

It seems ill-timed to talk about bacon-hogs after the severe drop in the price of bacon meat on the English market,—nearly one dollar a cwt.—yet this depression, which will only last a short while, should not prevent the farmer of persevering in this industry. Our neighbours from Ontario who are producers of bacon to a

much larger extent than we are, and who consequently will suffer more than we shall from this slump, do not appear to feel any over-anxious upon this matter, and confidently await the return to the former prices, which it is already predicted, will take place gradually in a short while.

Despite these ups and downs inevitable in any industry, the bacon industry has gradually and rapidly followed an ascending march since 1890, when owing to the Danes' failure to supply the quality of bacon required we first got a foothold on the English market. According to the statistics, there was then exported out of Canada during the year 1890, for $645,360 of bacon ; during the course of last year the value of these exports had risen to $10,473,211, and the preparation of bacon ranks to-day as one of the most important of Canadian industries. What is the share of Quebec in these exports ? It can only be estimated owing to the lack of provincial statistics, but this estimation cannot be a large one : not more than a year ago the Laing Packing Co. of Montreal, stated that only from 5 to 10 per cent of the bacon hogs which it required could be had in Quebec, while all the rest came from Ontario. It is sad to think that we should let our Ontario neighbours supply our own manufactures and thus secure a profit which it would require only a little more exertion from our part to make ours. The production of bacon should be an adjunct of the Dairy Industry, and as the latter has been in a high state of prosperity in our Province during the last three years, there is no reason why the bacon industry should not have developed accordingly. What are the causes which have tended to retard this development ? The chief one has undoubtedly been the prejudice entertained by our farmers against raising hogs of the lean type, such as are required for bacon. It was long claimed that there was no profit to be had in trying to fatten such hogs : yet the example of Ontario breeders is there to show us that there is some profit. Not only is there more money to be made in raising the bacon hog, but it is our only chance of making any profit in hog raising. There is an unlimited demand in England for choice, first class bacon, and the supply is yet small. On the other hand, the United States are flooding the market with inferior bacon, sold at low prices. To compete against them in the production of cheap meat is for us an impossibility. Our only chance lies in the production of first class bacon.

For the production of first class bacon, two things are necessary, the right kind of pig and the right kind of feed. The pig may or may not belong to any particular breed, but he should have certain characteristics, the chief ones being as follows : a long body, of medium width, with deep flanks, and sides straight from top to bottom. Such are the characteristics of the Tamworth, and a cross between this breed and the Berkshires, or the Yorkshires, seems to have the preference among Ontario farmers. A pig of this kind reaches a weight of from 160 to 200 lbs. at 7 or 8 months old, when he should be sold.

Upon the feed depends in a large degree the quality of the meat, whether firm or soft. The causes of soft meat have not all been ascertained, but it seems to be generally produced by lack of exercise, and feeding of fattening food, like corn, during the first months of the life of the animal. It has been pretty conclusively proved that with hogs that have had plenty of exercise during the first period of their growth, and that have been fed on green fodder or shorts, bran, with skim milk, until four or five months old, there is little danger of soft bacon, no matter whether they are fattened with barley and peas, or corn at the last.

C. M.

A MODEL DAIRY AT THE PAN-AMER.

Aside and distinct from the regular cattle exhibit at the Pan-American Exposition, it has been decided to conduct a model dairy throughout the entire six months of the

exposition. This dairy is to be composed of four or five representatives of each of the breeds of milch cows laying claim to merit along dairy lines. Plans are being made to have eight or nine breeds represented in the model dairy, and nearly all the live stock associations have given assurance of their fullest co-operation in this matter, and have generously offered to place at the disposal of the exposition the animals which shall form this model dairy. The stable in which the cattle will be kept will be one that is equipped with the most up to date appliances, particularly with regard to hygienic and sanitary conditions.

It is not the plan to force these cows unduly to see how much can be produced during this time, but to see what they will do under absolutely uniform conditions, as nearly normal as it may be possible to make them on the exposition grounds. The work will be conducted by men of much experience in feeding and handling dairy animals, under rules which will be formulated for the government of this dairy. Only such changes shall be made during the six months as shall be especially calculated to prove the superiority of some particular breed, and when these changes are made with a view to establishing some new characteristic of some breed, all other animals in the dairy will be placed under exactly the same conditions, and careful record kept as to their performance under these conditions. Accurate data will be kept as to the amount of food consumed, its cost, its nutritive value, and also the milk product as to the amount and quality.

Never in this country has such a long test of so many animals of different breeds been conducted, and it would seem that much valuable data could be obtained from an experiment of this kind. Those particularly interested in this matter can obtain the details of the management of the dairy by adressing F. A. Converse, Superintendent of Live Stock, Pan-American Exposition, Buffalo, N.Y.

FIRST AUCTION SALE OF CANADIAN PURE-BRED CATTLE.

The success that has attended the annual auction sales of pure-bred stock in England and Scotland has set Canadians thinking that there should be no reason why such sales could not be a success here. Several breeders have tried auction sales and met with considerable success, though they always ran a risk of having a poor attendance of buyers and a poor sale. A breeder is not likely to continue an annual sale if the prices realizes are below what could be secured by private sale. This has been the sticking point, no breeder feeling that his purse was long enough to stand the drain that might be made upon it before such a system could be firmly established.

Co-operation, however, is likely to solve the difficulty. What was too heavy for one breeder to do alone is about to be accomplished by the breeders uniting, and with the assistance of the new Dominion Live Stock Commissioner. There was a time when cheese was sold by private sale, but of late years the auction plan has been adopted, and proves most successful. As

First Auction Sale of Canadian etc.

Canada has come to the front with her cheese, there is no reason why she should not do so with her pure-bred stock and adopt the auction method of selling, which has proven so successful in other lines. Advantage was taken of the presence of numerous breeders at the Ottawa Fair to hold a meeting to discuss this important question. Everyone seemed favorable to the establishing of annual auction sales ; they felt that they were the right thing, but there were difficulties that must be guarded against. The sale must not be the dumping ground of inferior animals that could not be sold by private sale. A committee was appointed to arrange for a suitable place, choose a date and formulate rules and regulations. This committee have decided to hold the first sale at Ottawa on the 7th of February, 1901.

Mr. Hodson, Live Stock Commissioner, says that already more animals have been offered than can be sold in two days. A committee has been appointed to examine the animals offered and to select only those that will be a credit to the sale and likely to make it known for quality rather than quantity. It may take a little time to establish the reputation of these sales for quality and high merit, but once that is established success is assured, as buyers will attend from a distance, because they know there will be good stock present. The Dominion Live Stock Commissioner is doing all he can to further the success of the sale. The Farmer will await with interest the result of the sale and if it is a success, and there is no reason why it should not be, why cannot such sales be successfully introduced in the west ?—"N.-W. Farmer."