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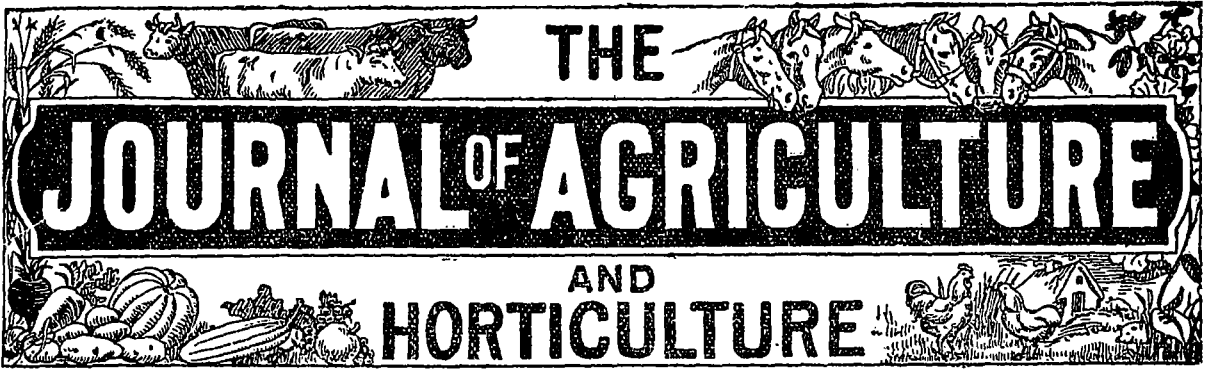
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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

VOL. 4. No. 1

This Journal replaces the former "Journal of Agriculture,"
and is delivered free to all members of Farmers' Clubs.

JULY 1st, 1900

. THE .

Journal of Agriculture and Horticulture

THE JOURNAL OF AGRICULTURE AND HORTICULTURE is the official organ of the Council of Agriculture of the Province of Quebec. It is issued Bi-monthly and is designed to include not only in name, but in fact, anything concerned with Agriculture and Stock-Raising, Horticulture etc. All matters relating to the reading columns of the Journal must be addressed to Arthur R. Jenner Fust, Editor of the JOURNAL OF AGRICULTURE AND HORTICULTURE, 4 Lincoln Avenue, Montreal. For RATES of advertisements, etc., address the Publishers

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The Farm.

NOTES BY THE WAY.

The Journal.—The present No. is the first of the IV volume of the new series of the old JOURNAL OF AGRICULTURE, now in its 22nd year. I had the honour to edit the opening No. of that periodical, under the auspices of the late Ed. A. Barnard, and have been in charge of it ever since.

ARTHUR R. JENNER-FUST.

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The season.—Cold winds, from the N. E. and N. W., have been keeping things back, in spite of a genial shower now and then. We hear sad accounts of the crops in Manitoba. How much of these are due to the speculators for a rise in the markets we do not know, but, at all events, prices of wheat have risen greatly, and it is too late for any great improvement to take place in the prospects for that crop, particularly as its condition is even worse in Dacotah and the North-Western States in general. It would not surprise us much to see "dollar-wheat" before next Christmas:

Tuberculosis.—We beg leave to call our readers attention to the report of Dr. McEachran on the cure of tuberculosis, which will be found in another part of this No. Mr. Edwards, of Rockland, deserves great credit for the liberal manner in which he has placed his herd at the service of this well-known veterinary surgeon, for the purpose of ascertaining whether the treatment followed by Prof. Bang, of Denmark, is or is not to be depended upon. The experiments seem to have been attended with complete success, and most

interesting lessons on the treatment of the calves of such cows as are only lightly affected have been learnt. Well may the reporter of the *Witness*, from which paper we borrow this account, say, in concluding his report: "The value of such an experiment made by Mr. Edwards, entirely at his own expense, to the live-stock breeders of the Dominion cannot be over-estimated."

Rape.—We have received the following letter, from M. Guèvremont, Sheriff of Sorel :

Dear Sir,—I see by the JOURNAL OF AGRICULTURE, that *rape* is an excellent food for sheep. My brother wants to try it on a couple of *arpents*. Will you be good enough to tell me how much seed is needed for that extent of land, and how it ought to be sown.

As it is not to be found in Sorel could you send me the seed, the price of which I will remit to you at once.

I have the honour to be

Your obedient servant,

G. GUÈVREMONT,

Sheriff.

(From the French).

In reply, we may as well describe succinctly the best way of preparing the land for the *rape*-crop; how to sow the seed; and the most profitable way of consuming it.

Rape should, like green crops in general, invariably follow the last grain-crop of a rotation. It takes the place of part of the "hoed-crops," but is much less costly to grow, seeing that, if sown thick enough, it requires absolutely no hand-labour.

Plough the stubble in the late fall; in spring, when the land is thoroughly dry, pass the grubber, or any drag harrow, across the furrow and then in the opposite direction, gathering any couch-grass or other root weeds that may have been brought to the surface; spread a light dressing of dung and plough it in, not too deep; harrow till the land is all equal to the tread; sow 5 lbs. of seed to the *arpent*; pass a chain-harrow over the land—if you have no chain-harrow, a bush-harrow will do—and finish with a rolling.

This should be done early in the season; it would be as well to make two sowings, one about May 20th, the other about the 15th of June. The first sowing should be fit for feeding-off by the end of July, and the other will come *en suite*.

An *arpent* of *rape* should fatten, with a trifle of oats and pease, about 9 or even 10 lambs of the year, depending, of course, on the size of the lambs. About a pint of the mixed grain and pulse *per caput* is enough. The full grown *rape*-plant is about three feet six inches in height, and the feeding-off should not be begun too soon. As we have frequently related in this periodical, *rape* stands almost any amount of frost in the fall; it will keep good till the 10th of December, and never scours sheep. The only danger there is in feeding it off is in introducing sheep into a field of it when their bellies are empty. The best plan is to let the flock fill their bellies well, and then turn them into the *rape* at once for, say, a couple of hours in the afternoon; then, remove them for the night; the next day turn them in a little earlier, and let them remain till about 5 p. m., before taking them out; on the third day, after introducing the flock into the *rape* at, say, 10 a. m., that is, when the dew is off, they may be allowed to remain there entirely.

We need hardly repeat that sheep should not be put into a whole piece of *rape*, to eat their way through it, thereby trampling down and destroying more than they consume. Means of dividing a field can be easily found, as we have more than once pointed out in the JOURNAL and the more frequently the flock is shifted, the better will the sheep do. The mixture of grain and pease can be given in any common troughs, and, as the weather gets colder, a little clover-hay, or even straw-chaff, will be very acceptable, though as long as the season remains mild, the sheep will not look at it.

Only conceive, dear readers, what a boon the cultivation of this plant would be to the occupants of the long narrow farms in the eastern part of the province! The fields furthest from the homestead rarely, if ever, see the dung-cart; grain-crops are continually being repeated on them; if crops they can be called; while, a little labour, a few bushels of bone-dust—say, 6 bushels to the *arpent*—and 5 lbs. of seed, at some 10 cents a pound, will give you the most fattening of foods, to say nothing of the enormous benefits the dung and urine of the sheep will confer upon the land for the use of the ensuing crops; benefits so enormous that any one who has not seen them will almost believe them, when brought practically before his eyes, to be miraculous.

To those who never saw the effect of sheep-pasturing on *rape*, this will appear utterly incre-

dible; but it is perfectly true, and our friends at Sorel saw the crop threshed: in 1886, we grew at the Fosbrooke farm there, 70 bushels to the imperial acre, equal to 60 bushels to the arpent, of Black Tartar oats, and that on the then despised Sorel sand!

Charlock, or wild-mustard, is not so bad this summer as usual, though one field, on the North side of the Grand Trunk, near Valois, is one sheet of gold. The season is too far advanced for *spraying* to do any good, but it seems from the reports in the English papers that farmers have found that process the most successful of all methods of destroying the enemy.

Charlock Spraying.—A demonstration on the spraying of charlock under the auspices of the Agricultural Department of the Yorkshire College took place on Wednesday, May 23rd, on the farm of Mr. J. G. Morley, Melton, Brough, East Yorkshire. The demonstration had been arranged by Mr. F. Nottingham, County Councillor for the Rowley division, who spared no pains to make it a success. There was a large attendance of farmers, and among those present were:—Messrs. Cole, Brantingham Thorpe; W. Johnson, H. Blyth, and W. Mitchell, Ripplingham; F. Craigie, Hotham; and W. Dale, Brantingham. Mr. J. H. Burton, of the Agricultural Department of the Yorkshire College, attended to conduct the demonstration. At two o'clock the company assembled in a field of barley very badly infected with charlock, and had the opportunity of seeing the solution prepared and the sprayer at work. At the same time they were able to inspect a piece which had been sprayed a week earlier, and had received 56 lb. sulphate of iron dissolved in 40 gallons of water. The result was most marked. The charlock was practically all destroyed, while the corn, though the edges of its outer leaves were blackened, was fast recovering from any temporary check it had received. The result was still more marked in a neighbouring field, where the charlock had just got into rough leaf, and a turn about with the machine had been taken. In the demonstration under notice two plots each received 56 lb. sulphate of iron in 40 gallons of water, while two others got 50 lb. in 40 gallons, giving a strength of solution of 14 per cent. and 12½ per cent. respectively. It may be mentioned in passing that a 10 per cent. solution, i.e., 40 lb. in 40 gallons, was used in another of

the Yorkshire College trials, but the result was not nearly so satisfactory as where a stronger solution was employed. The cost of the sulphate of iron employed was 3s. 6d. per cwt. The machine used was a new pattern one brought out by Messrs. Strawson's this season, which fixes on to an ordinary farm cart. The pump, as used, is a hand one, but it is supplied with apparatus for making it work automatically off the wheels of the cart. The total cost of the machine is £9 10s. It is very simple to work, and thoroughly efficient. The greatest interest was displayed by the many farmers present in the operation and its result, and so well convinced were some of them of the practical utility of the process that they declared their intention of employing it themselves another season.

Pretty strong is the flavour of "Rocquefort" cheese, but, as the ewes are milked from behind, a good deal of filth must of necessity get into the pail. Ewes used to be milked in Scotland, and, may be, are so treated still; but when a ewe has nursed her lamb, she has plenty to do to render her condition before being put to the ram again.

Can any of our readers tell who wrote the truly poetical song: "The flowers of the forest are all wede awa'!"

"At bughts in the morning
Nae blithe lads are scurning," etc.

Was it not Lady Anne Lindsay?

ROCQUEFORT CHEESE

How this rich dainty is made in Southern France.

Rocquefort, or Rocquefort, is prepared—in the Department of Aveyron, Southern France—from sheep's milk exclusively, and goat's or cow's milk may make good cheese, but they won't make Rocquefort. The sheep are named Lazarres, and originally belong in the high table lands or plateaus which border the farm. They eat little, are easily satisfied, and yield per capita nearly thirty-five to forty-five pounds of cheese. The lambs are not left long with their dams, but are either sold brought up on the bottle or by other sheep. The sheep are milked morning and evening. The milk, as soon as it is taken from the sheep, is immediately placed over the fire and is heated almost—but never quite—up to the boiling point. Otherwise, the milk and curds are treated as in the preparation of other cheese, except that little crust like crumbs of bread are mixed with it

to produce the blue veins noticed in it. It is not true that this color comes from Alpine herbs.

After the cheese is made it is put into rooms to dry. As soon as a certain degree of dryness is reached it is removed to the cave. Here it gets those little touches that make it Rocquefort against all the word's art. Why. How? Nobody knows. Except this—the cave is regular, all the year round, in temperature, and has air draughts running in it from January to January. These caves where the cheese are salted, are recesses in the limestone rock where the temperature is always about 40 degrees Fahrenheit. It is supposed that the temperature is due to openings into subterranean caves and the moist air to waters of some underground sea. At all events some very natural combination gives the peculiar results and no efforts of art have ever even partially succeeded in attaining them. If the temperature changed the fermentation would change; if the moisture was more, it would make the cheese so soft that it would not keep together, and if less would bet too dry. The cave is owned by a joint stock company. The company buys the cheese from farmers for fifty or one hundred miles a-round.

Of course, great care must be taken in preparing, and only experts in testing are sent out to buy. The cave is fitted up with oak shelves, on which the cheeses are placed. In this it has been so utilized that 65,000 square yards of surface have been obtained. During the six months that it takes to make the cheese, it has to pass through many processes. First of all, it must be rubbed three days with fine salt, and as often as the melted salt, mingling with the cheese, makes a mass of soft matter, this is scraped away, and taken to a machine filled with needles and run by steam. Here it is pricked full of little holes, into which afterward the air of the cave penetrates. All the work is done by women who, besides bed and board, get \$100 to \$125 a year. The cave is so cold and damp that the women must wear woollen winter or summer. It is a curious sight to see women clad as one finds women clad only in northern latitudes in winter.

Rain-making, we thought, was, with many other impositions, exploded; but the "Star's" special correspondent sends the following queer little report from Manitoba:

"RAINMAKERS" FOR MANITOBA.

Winnipeg, June 20.—In the Legislature, yesterday the following motion was carried without debate, after a few prefatory remarks by the mover, respecting the methods employed in some European countries, particularly Italy:

Moved by Mr. McInnes, seconded by Mr. Lyons:

Whereas, owing to the unusual absence of sufficient rain in the province the growth of grain therein during the present season has been considerably hampered and retarded, and, whereas, certain portions of the province in the past years have been visited with hail storms causing considerable damages and loss to grain; and, whereas, in certain European countries meteorological mechanical devices have been contrived for the purpose of superinducing rain at unfavourable periods and for the prevention of hail storms.

Therefore, be it resolved, that the question of adopting similar methods to those adopted and used in other countries for the purpose of producing rain during periods of drought and preventing the occurrence of disastrous hail storms in the province, be actively taken into consideration of the government and all enquiries made in the premises."

Note by the editor of the Journal of Agriculture.—It is a pity the late king, Lo Bengula is dead. The Winnipeg people might have secured his services:

One of the most solemn functions of the king as a magician is the making of rain, in which he is an adept. Mr. Thompson, seems to think that all his rainmaking is only a clever make-believe of a weather-wise student of meteorology, but this is somewhat doubtful.

A ROYAL RAINMAKER.

Mr. Thompson gives one or two stories as illustrating the kind of exploit by which the King obtains reputation:

The King has the reputation of being a remarkably good hand at making a thunderstorm, and in this he gives way to no man. I remember one day in June—the one month in the whole year in which you least expect rain—some natives had brought a large python into camp, and were singing some of their rain songs. It is sudden death to any native in Matabeleland who, if he sees a python, does not by some means or other manage to secure it and bring it in alive. The

King took possession of the reptile, and said he must go and make rain. I laughed at this, and said I did not think he could do so, to which the King replied, "You will see." The python was skinned alive, its liver taken out and cooked, and the usual rainmaking rites performed. Curiously enough, just before sundown the sky clouded over, and soon afterwards one of the heaviest thunderstorms I had ever seen broke over the place. Next morning the King asked me if a white man could make a thunderstorm like that? I said, "No, King; if we could get you down amongst the farmers in the Karoo we could guarantee you a fortune."

Sheep.—Sheep have done well, especially on catch crops, which, as already remarked, are abundant this year. Trifolium and vetches are of vital importance for lambs at this season of the year, and tide over a difficult period. Hampshire and other chalk land farmers would find it impossible to carry on their large flocks without these useful crops. The system of catch crops followed by roots is the most perfect system of arable sheep farming in existence. It enables flockmasters to maintain a stock of sheep during the summer, amounting to between two and three to the acre over the entire farm, besides a dairy of cows and a proportionate number of young stock. It produces a lamb of great size and weight at an early age, on account of the variety and abundance of the food. It is the principal reason why Hampshire Down lambs are ready for use by July. Only this week, June 18th, I weighed ten lambs, selected for their size, which scaled 1,302 lb., or 130.2 lb. each. These lambs were all born within the year, and the average date was taken to be January 15th, to the best of our knowledge. This gave an average daily increase in live weight (deducting 16 lb. for birth weight) of .85 lb. per day, and there can be little doubt that they have been increasing lately at the rate of 1 lb. per day. How far this rapid growth is due to breed cannot be precisely stated. It is, however, a matter of experience that other breeds can produce heavy lambs, but it has yet to be shown that any breed can rival the Hampshire lamb in May. My heaviest lamb, certainly born after January 4th, was 143 lb. weight on the scales, and we estimate his dressed carcase weight at 80 lb. This estimate is arrived at by converting Imperial 14 lb. stones into Smithfield 8 lb. stones, a method likely to be

justified in the case of lambs done particularly well from the day of their birth. It is not likely that a lamb could be brought to this weight out of doors under any other system than that of successive autumn-sown catch crops.

JOHN WRIGHTSON,

Agricultural College, Downton, England.

GARDEN OF THE FARM.

Kitchen Garden.

Asparagus plantations will now be affording a most welcome supply of this toothsome vegetable, that is, where the plants are thoroughly established. It is surprising what a quantity of shoots these throw up, and it is generally not until the early peas are ready for picking that cutting ceases. Even then, so fond are some of asparagus, that they are tempted to continue cutting much later in the season than they should, as, however strong the plants may be, undue or severe cutting will naturally weaken them, and then the following season the "grass" is both smaller and there is less of it. While cutting continues, however, it is best to cut all shoots that appear. To use only the thickest and allow the weak and spindly ones to grow is wrong. Better remove them all, and then the permanent roots are not robbed of moisture and nourishment. Invariably the thin growths are nothing but seedlings springing from the seed shed on the beds the previous autumn. To allow these to grow would only hamper the main plants, and it would be better to pull them up early before their roots strike down and become entangled with those of the permanent occupants. If allowed to increase year after year, the beds become a crowded mass, and then fine "grass" may be looked for in vain. Those who have recently made new beds would be wise not to commence cutting, say, until they are three years old, and then only sparingly. We have in former articles referred to the cultivation of asparagus fully. It has been our endeavour to point out how unnecessary it is to form raised beds in some soils, while it is necessary to do so in others. One of the main things, however, is to allow plenty of room between the plants. Two feet each way is none too much, and had we to plant asparagus by the acre we would set the plants out one yard apart. Even at this distance the roots would soon meet in good soil, and the best "grass" is not produced unless there is

plenty of room for each plant to make strong growth. We form new plantations each year, and our method generally is to plant in line one yard apart, with a space of 2 ft. between the plants. There is another advantage, and an important one, in leaving plenty of room between the rows, viz., it allows for a heavy summer's mulching. "During dry summers asparagus suffers severely from drought, especially when planted thickly on raised beds. We plant on the level, and at the time of writing the men are employed in placing a thick layer of long manure from the cow-yard between the lines of plants. The work of mulching thus early has its advantages. First, it conserves what moisture there is in the soil; and, secondly, subsequent rains will wash the manurial properties into the soil. The roots being now full of activity will feed greedily, and ramify freely into the enriched soil, and thus be better able to feed up strong shoots, which should reach from 6 ft. to 8 ft. in height, instead of struggling to attain the height of 3 ft. Surely it must be better to apply manure to asparagus beds at this season, for the important reasons explained above, than to allow the plants to starve during the growing season, and then wheel on manure at midwinter when the ground is frozen, the roots dormant, and the greater part of the ammonia is exhausted before spring. That the old-fashioned plan of making raised beds and planting thickly is wrong we are convinced; and the "grass" we are now cutting from three years old plants, treated in the way described, proves that it is a method that others could follow with advantage. Having mulched the beds with a view of getting the shoots as strong as possible, one must not leave off here and trust the rest to chance.

The taller the shoots grow the more likely are they to be broken down by winds or heavy rains, and when this happens prematurely, or before growth has finished and ripened off, the buds at the base, which are to afford the following season's supply, will not be perfected, and then of course the yield suffers or is less.

It well repays to support the top growth so that it can be kept upright until the time arrives for cutting it down, which is towards October, according to the season. We have tried various means to do this, such as staking the rows the same as with peas. We find, however, a quicker and easier way is to drive some stout stakes six or eight apart down the lines, and then run a double

line of cord from one to the other, and, of course, on either side of the growth. Then as the latter extends the two cords are looped together at intervals, say, of a yards with small twine. This prevents the tall tops blowing over, and so growth is completed without accident. The stronger the growth is likely to be the taller should be the stakes used, and the cord is run from one to the other from 3 ft. to 4 ft. from the ground.

New Beds.

Fresh beds of asparagus formed last month would be the better for a watering should dry weather prevail. It is wise to give the young plants a good start before hot, dry weather sets in, otherwise growth during the summer will be slow. It is not too late even now to form new plantations, but extra care is necessary in handling the plants, and in covering them with soil, which should be fine, as growth will have already commenced, even with plants that have been purposely retarded by nurserymen for planting.

A FARM FRUIT-YARD.

The boundary lines between farming — except wheat growing on a very large scale — and gardening never very clearly defined, are gradually becoming effaced; and except where occupiers or owners of land, are still immolating themselves before a four course system, additional crops are everywhere being introduced.

On the thinner soils, catch crops to be fed off with sheep, and prolonged occupation of the land as grass, are the chief additions. On land of a deeper and richer staple, fruit growing is advancing; although the benefit of this super-addition to the ordinary farm crop is not yet half so clearly recognized as it ought to be. The essentials to success with fruit growing are restrictions to one or two varieties, which have been proved to flourish in the district; and combination among growers to "place" crops to advantage, and provide some means of converting surplus produce into a permanent form, when there should happen to be a glut. These safeguards having been made certain fruits may be grown with a good hope of a fair profit.

It may be worth while here—in the face of the sensible advice to grow, where the districts suits them, catch crops—to point out, as I have in a former article, how general is still the mistaken

idea, that one is doing the land a kindness by leaving it unoccupied, at least for some months in every year, to recover itself, and regain the power of production. This is a survival of the old idea that land wants rests. Nature (the wisest teacher of them all) never allows land a vacant minute. If one crop fails she replaces it (*vide* the thin places in corn) promptly by some other growth; and the moment that the stubble is all that remains of the ordinary harvest, the green of a substitute speedily makes itself seen above the decaying straw. Nature's plan of cropping the land is to substitute (by the survival of the fittest) one growth for another. Man's one idea seems to be to destroy everything, and having wasted as much natural fertility as would feed two crops, to proceed to raise a novel growth by the aid of artificial manures. This is, of course, "advanced farming" but it is neither so economical as Nature's plan, nor one whit more efficient in any other way. Nature maintains growth unimpaired (whenever the cold does not make activity impossible) in order to keep the store of plant food in the upper strata. Men destroy all semblance of growth, and leave the soil as open as possible for the rains to wash all elements of fertility away into the subsoil. Surely it is possible to find a less wasteful plan than this. And in the desire to do this, a more permanent growth may find a turn, as well as does catch-cropping.

Fruit-growing occupies the land for periods long by comparison with the cereals or roots, but short as compared with the growth of natural forests and shrubs. Strawberries, etc. occupy the land for two or three years; bush fruits ten or a dozen, and probably it will be found that what may be termed fruit yards (orchards or bush fruit) about the life time of a generation of owners.

The finest fruit comes from young trees. One hears of the inferior orchards of the past time. They are not half so often inferior, because they were of bad sorts to begin with as, because they are now old. Finest fruit requires a succession of young trees; and therefore the production of fine apples, plums, and pears may alternate with corn and roots, viz: become part of ordinary farming.

This superiority of produce of young trees does not seem to belong to vintage fruit. It certainly does to that which, as is the case with all ordinary commercial fruit, in order to sell must first "catch the eye."

There seems also to be a difference between

what may be termed "culinary" and "dessert" fruit. Culinary fruit must be "big" to save trouble in peeling, to "the lady superintendent of the kitchen department."

Now big fruit is best grown on small trees, and near the ground. This should involve the putting alternate trees of culinary kinds with others of a taller stemmed variety, of which flavour and not size is the property most aimed at. Almost everything that tends to make such a fruit-yard a success, will hang upon having thought out well beforehand "what will go well with what," for, in fruit growing as in much else, a great deal depends upon our neighbours.

With fruit growing, poultry keeping will generally be combined — because these prey up on the insects which would else prey upon the trees — until the blossoms have set, and the fruit swelled to the size of a nutmeg, the fruit yard of a farm will also be its poultry yard as well. The coops which shelter the early broods of chickens and turkeys never are surrounded by healthier inhabitants, than when these are "camped about" among the fruit trees.

Still believing all this in regard to fruit and fruit raising to be true, I am not prepared to accept as other than a pleasant dream a programme which emanated some time since from a village in England

In this hamlet not only the squire but also the village schoolmaster are—or were—enthusiasts in fruit culture. The former has caused to be numbered all the fruit trees in the parish, and kept a register of these trees at the hall, with the proper name of each variety appended to each number. The latter has "drawn up a graduated scheme for teaching fruit culture as a specific subject, to his scholars so that the children may be in due course examined thereon." The school is furnished by the squire with a collection of apple, pear, plum trees, of the most useful varieties. The trees are planted in such a manner that they form a border of some width to the spacious playground. All of which is very nice, and so is the schedule.

"The children will be taught first the botany, of an apple blossom, followed by the difference between seedling and parent planting, summer and winter pruning, thinning the fruit, insect pests, packing and storing the fruit. This will constitute the first stage. The second stage will deal with the food of fruit trees, manures, course of sap; and the third the art of propagation. The

first scheme covers a variety of subjects, but it has been thought necessary to do this because most of the boys leave the school when they have passed the fifth standard, and hence it is needful to let them know as much of the first stage as possible before they do so. This is an excellent idea, and one which might be followed with advantage by other schools in country districts. The exterior walls of schools might be turned to good account for growing apricots and the finer kinds of pears and plums."

All the above, even to myself, who love fruit and fruit culture, seems very like "technical education influenza"—a rather prevalent disorder at the present time. Before boys can be turned into good gardeners, an excellent end to aim at, they must be developed into healthy men. Now, for this purpose, a few lessons—upon general principles—and a fair amount of play are essentials.

Knowing boys as well as I do, I certainly consider that to introduce side by side with the playground the temptation to which our first parents succumbed, seems a very questionable scheme of education indeed, and I should consider, at my present age, and having a reverence for the nature and weakness of children, that this method of utilising playgrounds, would be found to do more harm to the majority than good to the few.

W. R. GILBERT.

CUT-WORMS.

The long fine spring has been very favorable for the development of numerous insect pests, and we would not be surprised to find that many gardens have been visited by cut-worms. These worms work at night, cutting off plants just at or below the ground. If you have reason to believe they are at work it is a wise plan to wrap a piece of paper around the stems of cabbage and tomato plants so that the stem is protected a few inches both below and above the ground. Some farmers have gone to the trouble of putting tin around the stems, but good thick paper will answer just as well. It is best done before the plants are planted. The cut worms pass the winter generally in a half grown state and in the spring are ready to attack any green thing. They are fond of young carrots and onions, etc., but may be poison by dipping succulent vegetation—weeds, grass, anything will do if green are succulent—

into a strong mixture of Paris green, an ounce or two to a pail of water. Now spread bunches of this around the garden a few feet apart. The hungry worms find these poisoned baits at night and feast on them. It has been found that they are very fond of a mixture of bran and shorts mixed with Paris green and sweetened water until about the consistency of porridge. If this is spread in little heaps, about a teaspoonful at a place, along the rows of young plants is desired to protect, the worms will generally eat it in preference to the plants, and after trying this they will never try the plants again. One pound of Paris green to 50 lbs. of bran and shorts is about the right proportion.—*N.-W. Farmer.*

CUTTING SEED POTATOES.

It is interesting to study the various ways in which farmers and gardeners prepare their seed potatoes. The writer has come across those who systematically select the small potatoes and use these for planting; he has known those who secure the largest tubers available and plant them whole, and he has met others who cut their sets so as to have one eye each and those who cut them with half a dozen eyes or more on a set. Now, the question is just which is the best plan to follow. In deciding this point there are a few facts worth reviewing.

It should be remembered in preparing seed potatoes that each active eye is a bud equipped for the sending forth of a new potato plant, and that this new plant must draw its nourishment from the part of the tuber to which it is attached until such time as it has sufficiently developed its roots to draw nutriment from the soil. The man, therefore, who plant small potatoes start a large family of young plants all from the one centre, with a minimum of food supply in sight and with the prospects of these plants being crowded, both above and below the ground, and of his securing in consequence a large number of small potatoes in the fall. Planters tubers whole, of whatever size, must involve the same crowding of plants, only increasing the chances for strong budding according as the seed potato is a fully developed and ripened tuber. While, however, this is theoretically true, we must admit that under favorable circumstances we have seen some heavy crops of fine potatoes grown from small seed. The

chances from this sort of planting are increased where the potatoes are planted in hills, rather than in rows, not too many in a hill, and where plenty of room is allowed for spreading.

There is no doubt that in order to secure the heaviest yield of large, well formed potatoes from a new variety or from a limited quantity of seed, the large potatoes should be selected and cut to one eye to each set. We note that in the directors' report of the various experimental farms in Canada it is stated that : " the potatoes for planting were cut into pieces from two to three eyes in each, and these were planted in rows $2\frac{1}{2}$ feet apart the set being placed a foot apart in the rows." This is about the generally followed plan, and probably it is about the most satisfactory for general planting. It should be remembered that potatoes which have been allowed to sprout heavily before planting have exhausted part of their vigor and are not as good for seed as though they had been kept in a dark, cool place.

The proper preparation of the soil is another thing that has great influence on the crop. To plow deeply and manure in the fall is very important. Land so treated is now in good tillth and any seed, whole or cut will make a good start in it. In this dry season cut potatoes are liable to go with dry rot and in a wet spring they may be perish of wet and cold. Whether the land is too wet or too dry, the safest course is to use whole potato the size of hen's eggs. For well prepared land in an ordinary season one fair-sized set is enough to produce a good strong plant bearing good sized tubers.—*N.-W. Farmer.*

THE SUMMER FALLOW.

By the time this issue is in the hands of our readers they should have all their late seeding finished and be ready for work on the fallow. Work cannot begin upon it too soon now, and as next year's wheat crop depends upon the fallow the work should be well done. If asked their reason for summer fallowing many farmers would say, " to kill the weeds. To many minds this is all they can see in the process and the extent of their knowledge. Others who have been more observing will give an additional reason for the fallow, viz. : to collect a store of moisture for the next year's crop. This is a most important reason in this climate, where the rainfall is so light and so near the margin of successful crop growing.

Besides these two very important reasons for the fallow there is another which our readers will do well to ponder and one which is well worthy their closest attention. This third reason for a fallow is that it promotes nitrification. This is the name given to the process carried on in the soil by bacteria in converting the nitrogen of the humus into nitrates. In his address on clover growing before the Portage la Prairie farmers' institutes, Professor Shutt, chemist of the Dominion Experimental Farms, pointed out what has been known to scientists for years. It is, that of all the foods needed by grains in order to enable them to make growth the three the plants have the most difficulty in obtaining are nitrogen, potash and phosphoric acid. Of these three wheat has the greatest difficulty in obtaining its supply of nitrogen. This may seem strange in view of the fact that our prairie soil contains so much humus and the humus contains a large amount of nitrogen.

But it has been found that the roots of the wheat plant cannot make use of the nitrogen as it exists in humus, and the humus is the chief source of supply. The roots can take up the nitrogen only as nitrates. Nature has supplied the means of converting the nitrogen of the humus into nitrates. It is done by bacteria, which exist in every fertile soil. Therefore, it should be the aim of every farmer to give these bacteria every opportunity to convert as much of the nitrogen from the insoluble form into the soluble form, or from the form in which the wheat roots cannot use it to a form in which they can. It has been found by experiment that this nitrifying bacteria flourish or work the best at summer temperatures and in a fairly moist soil.

The bacteria cease operations when frost comes and begin again when it disappears and the soil warms up in the spring. Active operation during the summer, however, will be checked by the lack of moisture and if the weeds are allowed to pump the moisture out of the soil and they are then plowed down and the soil allowed to lie and dry out, very little, if any, nitrates will be made and the land has lain idle, sure enough. To get the most nitrates manufactured the fallow should be plowed early, before the weeds have a chance to pump out the moisture. Then the surface should be frequently stirred so as to retain all the moisture possible. Under these conditions the greatest amount of nitrates for next season's crop will be

stored up. It is wrong to say, or to think, that the land is idle when summer followed. These bacteria are at work preparing the most necessary plant food for the following crop. Give them a fair chance. While doing so you will also store the moisture and kill the weeds, because the best way to clean a soil of weeds is to germinate them, and this can only be done when there is sufficient moisture in the soil.—*North-West Farmer*.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

Just now is the season for the annual return of the children from school, and to many it will be the end of school life. After a few days, the novelty of being at home and the freedom from strict discipline will wear off.

Time begins to flag, now is the time for the watchful parent to come to the rescue and find some little task for each one. Nothing is more sad than to see children sitting round with no object in view and nothing to do, which is the ruin of many. Far better to break up this habit in youth, than to let it go on till it becomes confirmed.

Bad habits like weeds grow so fast that unless checked in youth they will soon gain the mastery.

Pull up a young thistle root and branch and the work is final; but let the same grow a little and it will be so firmly embedded in the soil, that in pulling it up the root will break and the part left will send forth innumerable shoots.

The usual run of children are always ready for a bit of fun, and where there is a good leader will gladly follow and enjoy where they have not the courage to lead themselves.

I fancy the dull, modest girl is a far better home worker than her more volatile sister, and how she does worship that dear one and wish that she had the courage to show her affection to friends in the same way that she does; but alas she has to pass through life with unfulfilled wishes and with only the comfort in herself that she would if she dared. So she watches and longs in her solitude and hopes, but fears, that her very quietude might be taken for ill temper, and this is the worst sting of all.

It only shows how children have to be studied to find out what they really are. They cannot be

treated by rule of thumb, but each must be studied and treated according to his or her nature to be sure of giving full value to each.

Physician cure thyself, is a trite saying that many of us parents might well apply to ourselves, and when our children have come to man's estate treat and consult them as such.

Let us look to this and reform.

GREEN VEGETABLES.

In buying them see that the leaves are crisp to the touch, and not brown or withered. Wash them well in two waters to freshen them and to remove the grit. Cut off the outside leaves, and cut the stalks of cauliflowers closely, so that they will afterwards stand upright in the vegetable dish. Have ready a saucepan of boiling water, to which salt has been added in the proportion of one tablespoonful to the gallon of water. If the water be hard, a tiny piece of washing soda will soften it, and give the vegetables a brighter colour. The saucepan should be left uncovered in boiling all green vegetables for the same reason.

About twenty minutes is the usual time green vegetables require for cooking, though ten minutes is often long enough for young peas, and cabbages sometimes take nearly an hour. To be certain if they are properly done test them with a skewer; when quite tender they are ready. Cauliflowers should be turned flower downwards, to prevent any scum settling on the flower. The water should be skimmed when it comes to the boil after the vegetables have been put in. Green vegetables are always cooked in boiling water. They should be served very hot, whether served very sauce or plainly.

Allow the water in which cabbage and cauliflowers have been boiled to cool before throwing it into the sink; there will then be no unpleasant smell, as is the case if the water is thrown down hot.

TASTY DISHES.

Beef salad is good. Cut half a pound of cold beef, either boiled or roasted, crossways, into small, thin slices or shreds, slice four cold potatoes, peel one small onion and mince it finely, put it into salad bowl, add two tablespoonfuls of salad oil, one teaspoonful and a half of vinegar, one tablespoonful of made mustard and the same quantity of chopped parsley. Stir it for a few

seconds and work in carefully the meat and potatoes, taking care not to bread up the potato slices. Salt and pepper must be added at discretion. Form in a heap in the centre of the bowl, wipe the sides, and garnish with slices of pickled beet-root and hard-boiled egg, if handy and convenient to use; the garnish is not essential, but will make the dish look all the more inviting.

For fillets of beef take some rump steak, cut it into neat pieces three or four inches square, fry them with some small sliced onions till nicely coloured, then stew them very gently in a rich, brown sauce, strongly flavoured with red wine, mushrooms, sweet herbs, &c., the sauce being carefully freed from fat, and slightly thickened with brown roux; then place the fillets on pieces of fried bread lightly spread with anchovy butter, and the sauce, onions, mushrooms, &c., poured over and around them.

Mutton cutlets should be thus prepared. Cut and trim them, and then let them marinade in a little oil, lemon juice, sliced onion, and parsley, with a peppercorn, a bay leaf, and two cloves; they are then breaded and broiled in the usual way, and served with a good sauce, half tomato, rich brown sauce, to which a little of the marinade has been added, with a little currant jelly.

A delicate pudding to follow is *gâteau de pain*, and is made by boiling two ounces of freshly-made white bread crumbs in half a pint of new milk for ten minutes, with a strip of lemon peel and one ounce of fresh butter; mix well into this, when boiling, two well-beaten whole eggs, three ounces of castor sugar, and another half pint of milk, pour the whole then into a buttered pie-dish, strew in about two and a half ounces of halved dried cherries, put some morsels of butter on the top, and bake in a moderate oven.

A really delicious Lemon Pudding may be made as follows, quite inexpensively: Take six ounces of fresh bread-crumbs, and mix them with two ounces of self-raising flour, two ounces of sifted sugar, two ounces of cooking butter, two ounces of finely-chopped candied peel, and the grated rind of a lemon. Mix thoroughly, and then add the well-beaten yolks of two eggs, the juice of a lemon, first freed from pips, and a gill and a half

of milk. Mix again, and finally add the whites of three eggs, whisked to a firm froth; use to fill a fancy mould, and steam for two hours; serve with a sweet lemon sauce, made by adding lemon-juice and sugar to half a pint of white sauce.

HOUSEHOLD HINTS.

Paraffin or alcohol of any kind is the best thing to use to remove grass stains on white dresses. Rub the stain with the paraffin till it seems to be thoroughly loosened, then wash the article in warm suds in the usual way.

Flowerpot stains may be removed from window sills with fine wood ashes.

Rub ivory knife handles that have become yellow with age or use with fine sandpaper or emery.

Green blinds that have become faded may be renewed by rubbing them with a rag saturated with linseed oil.

Kitchen tables may be made "white as snow" if washed with soap and wood ashes. Floors look best scrubbed with cold water, soap, and wood ashes.

Knives should not be dipped in hot water, as it loosens the handles. The blades may be placed upright in the water in a mug, by which plan the handles will be kept dry.

A teaspoonful of pulverised alum mixed with stove polish will give the stove a fine lustre, which will be quite permanent.

HEALTH FOR THE PEOPLE.

"HEALTH IS THE FIRST WEALTH—" *Emerson.*

BY DR. ANDREW WILSON.

(*Written exclusively for Lloyd's Newspaper.*)

Continued from last number.

Also let the mother see to the cleanliness of the feeding bottle—and the tube. I emphasize the tube, because a dirty tube will spoil the milk, even if the bottle itself be clean. This, indeed, is the objection to the ordinary type of feeding bottle. The old-fashioned kind without a tube at all, or the newer variety which consists of a bottle standing upright, marked on the outside to show how many ounces (and half ounces) it contains, and provided with an india rubber teat that can be turned inside out and thoroughly cleaned, is to be preferred to that with a tube. Then the bottles should be scalded out after use with hot water

to which a little bicarbonate of soda has been added, and afterwards thoroughly rinsed out with cold water. Two bottles should be in use so that one is ready cleaned and purified for the fresh milk supply. I need hardly add that each feeding should be separately prepared. No milk should be allowed to remain in a bottle, and then used after an interval. It is exactly in such a case that some contamination of the fluid may occur from the air itself. These precautions refer to the feeding of the child, and it cannot be too strongly expressed that it is on the observance of such rules—all very simple and easily practised—that the safety of the infant will depend when the risks of infantile diarrhoea abound.

Next, as to the treatment of the disease. When the symptoms I have named appear—the vomiting, diarrhoea, and fever—the only wise course is to send for the doctor. But if the anxious mother is far from medical advice she may do much to ease the little sufferer, and probably to save its life. The food will require, of course, to be delicately supervised. Probably milk should be stopped as a food. One authority advises that a dried milk food should be given instead, or that veal tea with barley water, or barley water with white of egg, should be administered; or it is recommended that such foods may be given as, barley water 10 ounces, white of egg half an ounce, and white sugar a teaspoonful. So much for the food. To relieve the urgent symptoms apply hot fomentations to the child's stomach, and give at once a dose of castor oil. Half a grain of grey powder may be substituted for the castor oil. These measures clear the bowels, and tend to remove the irritating matter. If the infant is in a state of collapse and appears to be in danger, the mother might give it a little stimulant, about 8 or 10 drops of brandy will suffice, the dose being repeated at intervals so as to relieve the child and to stimulate the heart in its action.

In some cases a warm bath will cease the pain, and may be substituted for the hot applications to the stomach. When recovery is taking place, I need hardly add, the mother will have to be very careful in returning to a milk diet, and her watchful care will still be necessary after the child is better.

The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

TWO IMPORTANT OPERATIONS.

There are two operations which are somewhat new, at least to farmers and gardeners of the old school, but which imperatively demand our careful attention at this season if we are to do our best to secure and improve our crops, namely, spraying, to destroy or prevent the damage which may be done by insects, fungi, or white mustard or charlock; and top dressing with nitrate of soda. It will be only necessary, in this place, to remind our readers of the importance of spraying, and to refer them to the methods to be adopted, and the ingredients to be used, as propounded in former issues of the JOURNAL.

Where white mustard abounds the new methods of spraying for its destruction experimented on, and recommended by Prof. Frank T. Shutt, of Ottawa Experimental farm, are of vast importance. There is no worse pest in our grain crops than this weed, and it is so prolific and its seeds are so easily distributed that whole neighbourhoods are infested in an incredibly short time, so that beside the necessity to protect one self against its ravages, to destroy it is a duty we owe to our neighbours. Prof. Shutt is entitled to the thanks of the cultivators of the soil for the interest he has taken and the data he has furnished as the results of his experiments. Messrs. William Ewing & Co. of Montreal have reprinted a leaflet containing Prof. Shutt's report which that enterprising firm will be glad to furnish to all applicants, together with a copy of their catalogue either in French or English and which contains full descriptions of spray-motor and spraying outfits.

It is an objection with many farmers that these apparatus are expensive and beyond their means, and it is not worth while to purchase one for the short time each year they can be of use. To the man of small circumstances the objection may be held good but it might be overcome by several neighbours joining in the purchase of the necessary outfit and each using it in turn according to rules which should be made, and enforced to regulate the work so that no misunderstanding could arise. Or where there is a farmer's club, the

bonus might be thus well spent. Again, in a locality where there are a number of small farms or gardens it would doubtless answer the purpose of some intelligent person in the community to study the subject of spraying thoroughly, then provide himself with the necessary outfits and a stock of the mixture to be used, and to go from place to place doing the spraying required for hire, either by the number of trees or acres as agreed, or by the hour and charging fair price for the mixtures.

As regards the use of nitrate of soda as a top dressing, its importance cannot be over estimated at this season because its effects upon growth are immediate and surprising, and not only has it been proved to very materially increase the yield, but by stimulating the young plant into rapid and vigorous growth render it less liable to be injured, either by weeds, insects or fungi. No farmer or gardener can be said to have done his whole duty by his crop who neglects spraying or the application of a stimulating chemical top dressing,—while it is growing,—and if he suffers loss he will have himself to blame.

GEO. MOORE.

THE ADVANTAGES OF EDUCATION.

One reason why the Danes lead in the dairy industry and in their system of agriculture is that it is claimed that there is not a single person in Denmark who cannot read and write.

The *Rose and Fruit* of the Rose family. Not only is the rose the Queen of flowers but she is the gay representative of the most useful fruits, second only in economic value to the grain, of which wheat is the king. In the royal family of the rose, the natural order *Rosaceæ*, we have apples, pears, plums, cherries, strawberries, raspberries, and blackberries.

Even the delicious orange and wholesome lemon cannot vie in usefulness with the apple, and another advantage which the latter possesses for us, is that it thrives best, as do most of the rose family, in temperate latitude, whereas the former will only grow in a tropical or semi-tropical climate.

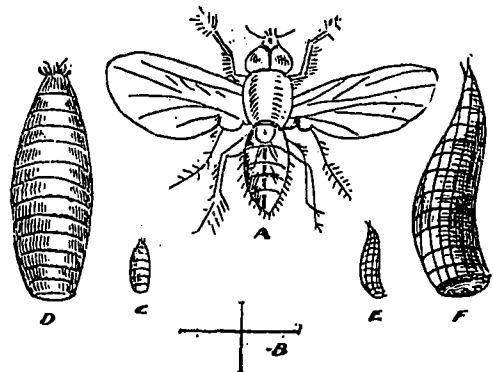
The "Dog rose" *Rosa Canina* is a native of Britain and from it many choice hybrid varieties have been raised, beside which it furnishes a stock

on which these choice varieties are budded and on which most of them grow with greater vigour than are their own roots. The crab is also a native of the British Isles and is also useful as a stock on which the choice kinds of apples from other parts of Europe are engrafted and are thus improved in hardiness and vigour like the rose. It is interesting to trace the similarity of the effect produced by propagations, also to notice that the rose among flowers, and the apple among fruits, have been on their thrones as queens for generations. Both were in great favour with the Romans and were held in high repute before the Norman conquest of England. The writings of the poets, ancient and modern, often allude to them and especially do the English poets sing in their praise. Chancer, Spenser, Shakespeare and their contemporaries mention them and use them as illustrations of human qualities and virtues. We recommend those engaged in the culture of fruits to read and study the facts of their history and peculiarities; such knowledge will give zest to their work and by giving the reason why certain practical operations are effective will make the practitioner the more likely to perform them promptly and properly.

G. MOORE.

THE ONION FLY.

PHORRIA CEPETORUM.



A. Fly magnified. B. Fly natural size. C. Larva, natural size. D. Larva magnified. E. Pupa. F. Larva magnified.

The Onion Fly causes serious injuries to the onion crop. The first indications of the attack are shown by the first leaves becoming yellow, and afterwards whitish; if these are pulled they part easily from the stem, and gradually other

leaves become yellow and decay. The bulb will also be deformed, with yellowish maggots within its folds, eventually causing it to be rotten and useless.

In other cases the outer, or lower leaves will be found lying upon the ground, but still green, while the leaves remaining upright are green, soft and flabby. In the case of young plants which are infested it will generally be noticed that they are nearly eaten through by the maggot just above where the bulbs begin to swell; in older plants maggots of all sizes will be found.

The male and female flies of this species differ but slightly. From six to eight eggs are laid on the leaves, generally just above the ground. These eggs are white and can be easily seen without a glass. Maggots hatch from these and burrow down into the root between the sheathing of the leaves.

This maggot remains in this larval state (Fig. C. D.) for 15 days, feeding upon the bulb, it then changes to the pupa (Fig E. F.) and then into the fly (Fig. A. B.) Several generations are produced each summer.

Prevention and remedies. — Spray with coal oil emulsions early in the season and repeat several times. Take up infested plants carefully with a small three pronged fork or other tool by means of which every particle of the root is removed. Never attempt to grow onions on the same land where the crops have been infested, or if so, dig the soil two spits deep and mix in a quantity of lime or gas lime. Kainit finely broadcasted on the land 5 cwt. to the acre has been found to have a good effect. Nitrate of soda $1\frac{1}{2}$ to 2 cwt. to the acre stimulates the plant into rapid growth away from the enemy. 1 bushel of lime to 2 bushels of soot or ashes powdered over the soil and lightly hoed in has proved in some degree efficacious, but when land has been infested with the onion maggot it is better to try a *fresh plot*, adopting the methods of prevention recommended.

INSECTS INJURIOUS TO VEGETATION.

The Celery Fly.

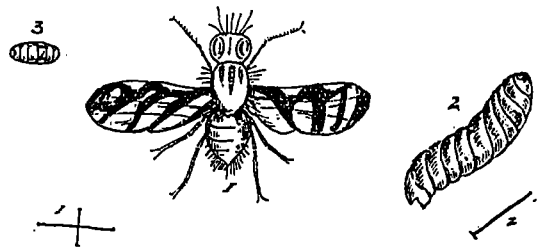
Growers of celery are frequently complaining of injury to their crop, in some way for which they cannot account and no doubt it is caused by the grubs or larvæ of this fly, which is so small as to

escape the notice of any but the close observer, and, unfortunately, the ordinary gardener is not one who troubles himself to examine too closely, and neglects to apply remedies through ignorance of the causes of the failure of his crop.

The Boards of Agriculture in the various countries in which they are established do great service to the cultivator by watching closely and studying the habits of insects, birds or animals which damage or destroy vegetation, and the means by which their ravages may be checked or prevented.

The Board of Agriculture of England are conti-

THE CELERY FLY (*Tephritis onopordinis*).



1. Fly magnified. 2. Larva magnified. 3. Pupa natural size. Lines showing natural size of Fly and Larva.

nally issuing leaflets, and although they are distributed gratuitously to all applicants, many of our readers may not apply for them, we therefore reprint from them such extracts as will be useful to refer to and to which we direct particular attention.

As the term larva will be frequently used, it will be perhaps well to give its definition. Larva is the Latin for a ghost or mask, and is applied to an insect in the first state after leaving the egg, and it is in this condition that they do the most damage, because then they are feeding. They are called larvæ (plural for larva) because while in their first stage of infancy, their future form is marked or concealed. Their next change is to what is termed the pupa state in those insects which undergo a complete transformation. There are some which are only partially transformed, retaining their activity and their appetites for food, growing and acquiring rudiments of wings. The true pupæ lose their larval form, take no food, and remain, for certain periods, according to their species, apparently dead. Pupæ are usually enclosed in a covering like a thin shell or bandage, hence their name "pupa" from their supposed similarity to a bandaged infant, as was the custom of the Romans. At the end of this

period, they again shed their skins and come forth fully grown, provided with wings, except in a few cases. In this condition there are males and females; but this third term of their life is generally short, they do not increase in size, and most of them die as soon as the eggs are laid. It is a curious fact that insects, each have their peculiar plants or animals to prey upon, and the best time to prevent their propagation and the consequent damage they will do is when the females are depositing their eggs on the leaves, stems, or bark of the plants they affect, so by covering these parts with some substance, offensive or poisonous to the fly, we prevent the hatching out of whole broods of larvæ.

The Celery fly is very small, only about one eighth of an inch in length, its wings, when expanded, less than half an inch across. Fig. 1—(see line)—When the fly is at rest upon the plant its wings are folded in an upright direction, so that being nearly the same colour of the stem and leaves, it is almost invisible.

The female fly is larger than the male, she places her eggs singly upon the upper sides of the celery or parsnip plants (for the same insect also preys upon the parsnip) descending to the roots and causing them to be forked and all shapes; many eggs are laid by one female. The eggs are hatched in about six days, and the larvæ from them at once bury themselves in the leaf tissues and form mines within them. In about 14 days, the larva changes to pupa, either remaining on the leaf or falling to the ground. From the pupa Fig. 3, the fly comes in a few days and starts a new generation. There are several broods or generations in the course of a season, and the pupæ of the last generation remain in the earth or on pieces of the leaves, until the next spring.

Prevention and Remedies.

As many of the pupæ remain in the earth, it is most essential when the celery crop has been taken from the trenches that the earth should be carefully leveled and well dug, and the upper surface buried deeply to prevent the flies from coming up. This should also be done in the case of infested parsnips. A good dressing of finely powdered lime or gas lime may be applied with great advantage. Every particle of foliage and stem must be deeply buried, or what is far better, collected and burned directly the celery or parsnips have been dug for if put on compost heaps

or with the manure, it is most probable that the pupæ will be with it when used for other crops of celery or parsnips or others which grow near them. Celery or parsnips should never be grown on the same land year after year, but a fresh spot chosen every spring.

This fly has also been discovered on the thistle, so that is another good reason why the latter should be kept down.

When celery is grown only on a small scale, the trouble might be checked by pinching the infected leaves which may be detected by the peculiar marks upon them. The plants should be examined when they are quite small, and the pinching of the young leaves carefully done so as to damage them as little as possible.

It is desirable to force rapid leaf growth. Nitrate of soda mixed with a little salt will effect this.

Finely powdered soot ashes or lime dusted on the plants when damp with dew or rain will prevent the flies from laying their eggs upon the leaves.

Spraying the plants several times with a mixture of one quart of coal oil, half a pound of soft soap to 10 gallons of water, or 1 pint of carbolic acid, half a pound of soap to 10 gallons of water will be very efficacious.

The coal oil and carbolic acid must be well mixed with the soap before it is added to the water. These solutions sprayed lightly on the plants several times will prevent the flies laying their eggs upon them and thus the crop may be saved.

The Poultry-Yard.

(CONDUCTED BY S. J. ANDRES).

HARDY CHICKS.

The secret of success in raising chickens artificially is to make them hardy. The stronger they grow and the more fresh air and exercise they can have, the less mortality. This is where the hen as a brooder has the advantage over the machine. Chickens with their natural mother are kept in almost constant motion; they eat slowly and search for every morsel, and when night comes they find an even, well distributed

heat, as a protection against the change in temperature. All this, however, can be successfully accomplished in the brooders, but it requires patient experiment.

When your newly hatched chicks are introduced into the brooder the heat should be at least 90 degrees. Let them remain in the hover undisturbed until they see fit to make an excursion into the yard. Have a feed board ready with a good handful of oat flake or rolled oats sprinkled over it. This being white in color will at once attract attention, and it is very nourishing and in every way excellent to start them on. If a small water fountain, filled, is within reach they will find it soon enough and drink moderately. Oat flake will do nicely for the first day as they will not be wise enough to eat regularly until the second day. Whatever food is adopted for a regular feed should be used sparingly at first. Five times a day is about right to feed for two weeks. Millet seed scattered in the litter of the yard to scratch for should be used; this will keep them in motion, provided they have not been overfed at the board. After the first week, they can be given safely whole wheat or small cracked corn to scratch for. Watching their feeding and their actions while so employed will be one's only guide as to its fitness. At night take great pains to have sufficient heat and all fringe down. Do not be afraid that they may smother; chickens can stand a good deal of heat.

If they crowd under the hover, they are cold; if they spread out and lie more apart, it is just right. If they stick their heads out through the fringe, they are too hot and want air; reduce your heat only a trifle. These actions constitute the best thermometer.

Constantly watching these two points—feed and heat—will gain for the beginner the looked for success. Weak chickens from poor stock will die any way; so do not worry over a small mortality. It is mostly a question of the survival of the fittest; and those chicks which cannot stand the regime are better dead.

S. J. ANDRES.

FEEDING GRASS TO POULTRY.

If fowls are confined they cannot secure grass or other green food. When running at large they gather much about the farm that serves for food. But fowls can be fed on grass by giving it to them

in the yards just as well as if they gathered it themselves, only the manager should chop it fine in order that they may eat conveniently. A small patch of white clover is an excellent thing to have near a poultry yard, and if, when sowing the cloverseed, it is mixed with one-half its bulk of lawn grass the mixture will be all the better. In the fall sow a small piece of rye which will give an early gathering, and a few square feet sowed broadcast with a mixture of mustard, radish, lettuce, kale or rape come in finely for feeding at a later period. In winter good clover hay should be cut in a fine condition, steeped in warm water, and the mixed mass thickened with meal and bran and then fed. But in summer the fowls need a supply of green food more than at any time, for exclusively grain is too heating for them. It is more economical growing the green stuff on a separate place and feed it on the yards than to allow the fowls to roam and destroy it before it can be utilized.

Grass will support a goose without grain at all, and poultry will thrive on it with very little assistance in the shape of other feed if the green stuff is of a variety and in a fresh condition.

S. J. ANDRES.

KAFFIR CORN.

Two or three years ago, a friend sent me an article taken from an American Poultry paper which brought to the notice of poultrymen a new corn for feeding poultry, speaking of it in strong terms of praise. Since that time I have been getting further information in regard to it and have reason to think that it might be a good thing for our farmers in Canada to experiment with. A writer (I may say several of them) in one of the journals to which I subscribe recommend it very strongly.

KAFFIR CORN.

"I believe the time is not far distant when Kaffir-corn will take its place with our principal cereals. It is very nutritious. Stock of all kinds will eat it readily. In weight it is equal to wheat. In a country subject to drought and chintz-bugs, there is no grain that equals Kaffir-corn. Last season I got a quart of seed enough to one acre and planted it according to directions three to five grains, twenty inches apart. The soil was rather thin. I harvested from this patch forty five

bushels an average of about forty bushels to the acre, while the Indian corn, in the same field and soil produced but twenty-five bushels to the acre. I expect this season to experiment with the corn-pea and Kaffir-corn and will sow one peck of peas to three pecks of Kaffir-corn." J. J. Cordier, Illinois, in *Farm and Fireside*.

Albert Matzker, in the same paper, says: "I purchased some Kaffir-corn seed last year and planted five acres and had a good crop. It makes as much grain to the acre as Indian corn and much more fodder. It grows on poor land better than any other crop that I know of old worn out land where clover does not stick. I think Kaffir corn would improve. I think the best way would be by drilling it thinly in sows three feet apart and cultivating at once. As soon as it begins to head turn it under and plant again, and before frost it can be turned under again or cut and used for feed. If planted in May it will stay green until frost kills it in the face. I fed horses and cattle with it and they did well. For poultry the grain is excellent — equal to wheat. I have two varieties — the red and the white. The white is better for grain as it has a larger head."—Albert Matzker, Illinois, in *Farm and Fireside*.

KAFFIR CORN FOR FOWLS.

"Kaffir-corn is now a common crop with the farmers of semi-arid sequin of the south-west, being extensively grown in Kansas, Indian Territory, Texas, etc. It is a non saccharine variety of sorghum in which the sotak as with the saccharine varieties finds its way largely to the grains or kernels borne in the head or top of the plant. The seeds are about twice the size of ordinary sorghum seeds and are rich with starch. Kaffir-corn can be used with satisfaction as a feed for all classes of barn animals, chickens included. The early varieties should ripen satisfactorily with our correspondent and I recommend that he try this grain as a feed for fowls, remembering that it should be used in addition to rather than as a substitute for other grain.

"The seed should be planted and cultivated the same as corn.

"Since the English sparrow is fond of this grain and the heads are unprotected great damage is often brought to the refined grain through these pests."—W. A. Henry, in *Breeders Gazette*.

I hope in a few days to have further information about the use of Kaffir-corn as I am now in correspondence with parties in the United States and will continue this article in another number of the JOURNAL, probably the next one published, and hope I may be yet in time for our readers to try it. I have procured some seed from Wm. Evans, of Montreal, and have a resident farmer in this district who is willing to try it both as a forage plant and for feed for poultry, and shall have the satisfaction of watching the experiment (here, in Cap à L'Aigle, Charlevoix Co., P. Q., near Murray Bay), and will report the result in the fall of this year. I shall use the white, as it seems to be the favorite to grow as a grain food.

S. J. ANDRES.

Cap à L'Aigle, Que., June 5th, 1900.

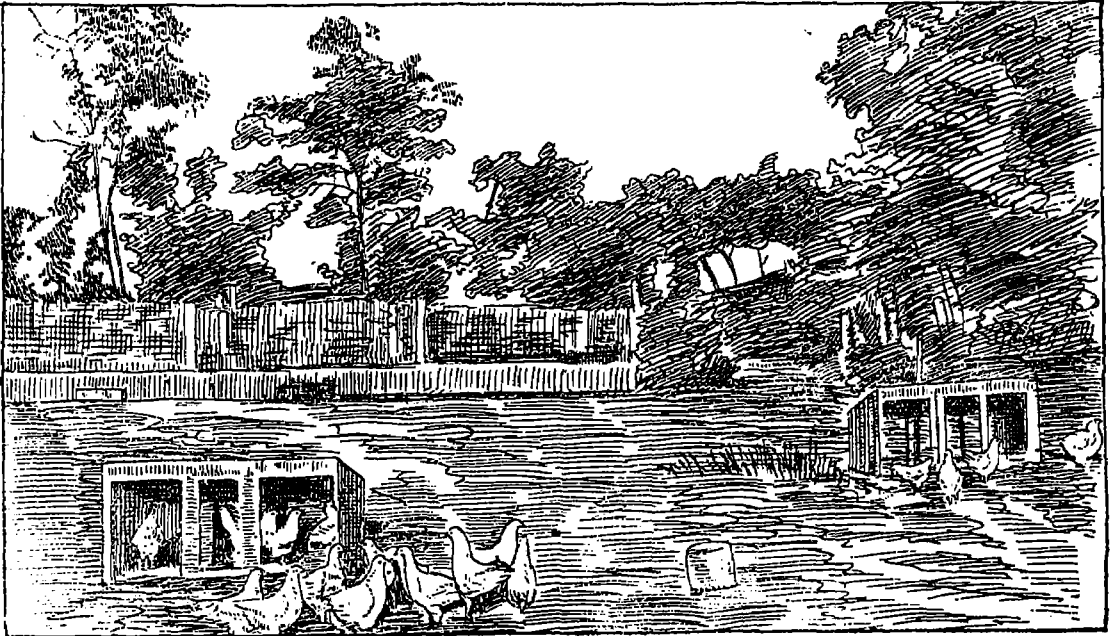
(To be continued).

MORE COOPS.

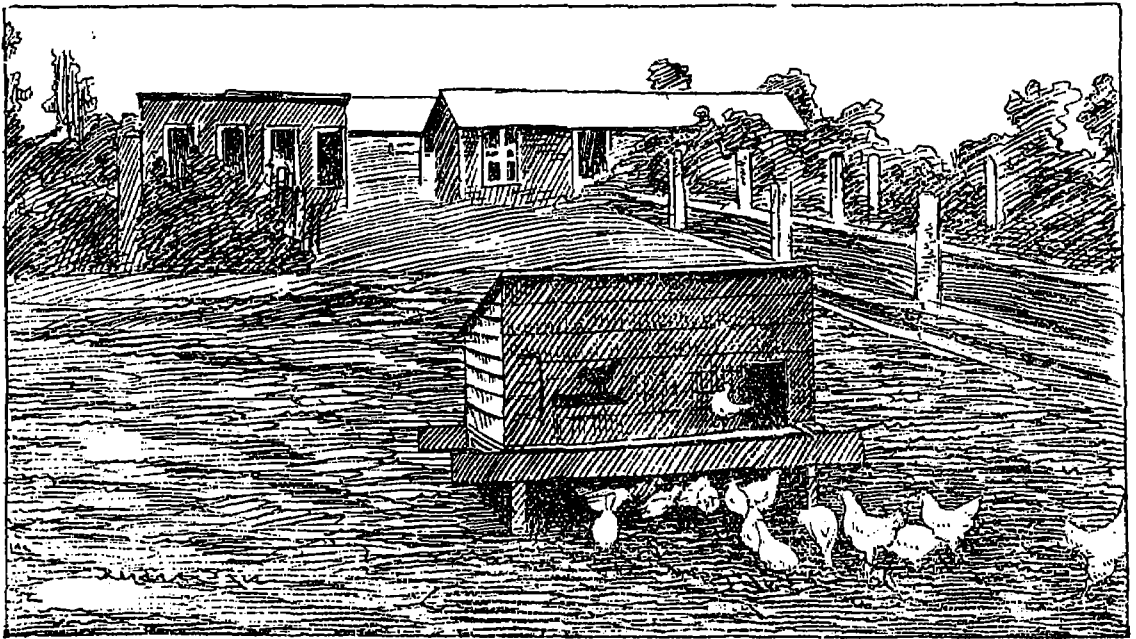
I present to our readers some illustrations of coops obtained from a friend and a writer, in Minnesota, which I hope will prove acceptable as they have been to Mr. Caneday, Taylor's Falls, Chicago Co., Minn., U. S.

RAISING HALF GROWN CHICKS.

The proper care of young, growing chicks after they leave the hen or brooder is a very important part of the rearing of fowls. At that tender age they must be carefully guarded against every danger which would retard their growth. Poultry raisers cannot be too careful in this respect and can afford to give their best efforts and thoughts to this part of the chick's life. We give herewith a plan that have been used by Mr. Victor D. Caneday, Taylor's Falls, Chicago Co., Minn., and found to be successful in every way. As Mr. Caneday has been very successful in rearing exceedingly fine stock which are noted for their extraordinary laying qualities as well as their beauty, we feel safe in recommending this plan. All the chicks are allowed free range as soon as possible and when well feathered are placed out in the fields or along the edge of the woods in weaning coops, where they are kept until the cockerels begin to develop, when the sexes are separated, placing the pullets in the open air roosting coops. Allow them to roam over the fields or woods at will until fall when they are removed to the laying houses. The weaning coops and open roosting



Weaning coops.



Open air roosting coops.

coops are made of any kind of cheap lumber or siding.

The weaning coop is two and one-half by four feet on ground plan and is three feet high in front, two feet at the back. The front is covered with one inch mesh-wire netting with door in centre.

The roof is made of matched fencing, well painted. They are provided with board floors. These floors can be made separate from the coop and thus facilitate cleaning. Litter should always be kept in the coops for nesting material which should be changed frequently.

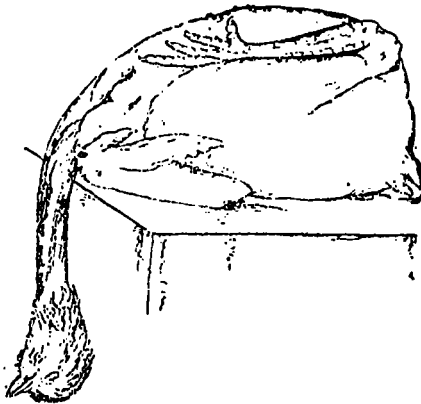
The open air roosting coop is built on legs eighteen inches high, making a shady retreat underneath, and leaving it more convenient to clean off the board floor under the roost. The roosts should be made of material quite wide, at least three inches, so as to give the growing chicks' breast bones a good bearing surface, thus, preventing, in a large measure, disfiguring crooked breast bones. The floor space of these coops is three by six feet, about three feet high at the back and four in front. They will accommodate twenty-five growing chicks or about fifteen head of old stock.

S. J. ANDRES.

SPECIALLY FATTED POULTRY.

(Continued).

He also shows what I have often stated to my farmer friends in this province, and elsewhere in print, that there was no visible limit to the demand for the best poultry. There are no indications of the supply ever exceeding the demand for the best poultry. Poor stuff will always move slowly, but the best sells itself. Anyone who will take the trouble to talk with the marketmen about it will find that this condition of



A FATTED "SUSSEX FOWL."
From "Poultry fattening."

things exists everywhere in our markets. There is any quantity of poor stuff which sells at ten or twelve cents a pound, but of the really choice article selling at eighteen or twenty cents a pound, the supply is very limited, and if a marketman gets hold of some of that extra quality of goods he generally keeps it hidden for his specially favored customers. What we should do here in Canada is

to produce more of the best quality of poultry, turn our ten and twelve cent chickens into eighteen and twenty cent chickens — and half fattening will do that. Finishing the process and making such a product as is shown in the illustrations, will make an article closely resembling a capon in quality and delicacy of flesh and will bring much greater profit to the producer. What I want to see done is that the ordinary poultry shall be so improved that we may get eighteen or twenty cents a pound for what is now selling for ten or twelve cents. This can be done by selecting the proper stock or breeds; they are now in the country, for the poultryman or farmer to select from. I will take up the subject of the right breed for the farmer in another article soon.

S. J. ANDRES.

WHAT TO GROW FOR POULTRY.

Variety is the spice of life. Every one who makes a study of the wants of his fowls proves that it is the little extras that make the difference between profit and loss. One may keep a flock of fowls in clean quarters, give them plenty of grain and water, and still they will fail to do their best in egg production. Give them some warm mashes containing a little red pepper, some meat scraps, chopped green stuff, a new supply of charcoal, grit and lime, and their combs will begin to redden, and the egg basket to overflow. Spring is the time to make plans for the fall and winter feed for hens, at least for farmer poultry-raisers. If one counts their labor of any value, it often costs as much to raise certain extra feeds as it does to buy out right, but I know from experience, that if one waits until fall planning to buy, the money will go for other things. "No need to buy feed for the chickens when the corn-crib is full," and so the hens grow fat, lousy, and lazy on corn and water. These are some of the things I grow for the yarded fowls, those that I depend all for eggs for hatching: lettuce, Swiss chard and kale. The latter is excellent, as it grows so rank, and is not injured by frosts. Can be had early and also after other greens are gone. Then they are given certain wild grasses which they like, and willow leaves. My fowls are especially fond of these leaves, not only when young and tender, but also when they are old and tough. So if you have no willow trees, put in a few cut-

tings around the poultry yards. The chickens will keep the leaves stripped off as far as they can reach, and you can hand down the rest. Then they have frequent tastes of my early cabbages, turnip-tops, cucumbers sliced length wise, chopped onions, etc. I have quite a patch of sun flowers. These I commence feeding sun before the seeds are fairly ripe, and keep it up for an occasional relish as long as they last. They must be gathered early or the seeds will rattle out and be wasted, unless the fowls have access to the patch. My chickens prefer to pick the seeds out of the heads for themselves. We raise millet, good for fowls to scratch in during winter, and the seed is excellent for young chicks. I might mention clover, buckwheat, Hungarian grass, sorghum seed, and brown corn, but will leave those for some one who has tried them.

When the late vegetables are put into the cellar, there is always an extra quantity of rutabagas, cabbages and small potatoes for the chickens. These are cooked during the winter. All this means work, of course, but that is the only honest way of getting money.

It does not seem much of a chore after all, when one does it every day at a certain time.

A chicken-pan is always kept in a certain place in the pantry. Into this go all table-scrap. egg-shells, vegetable and apple-parings a large kettle is for this purpose, so it does not require washing often. Every morning the contents of the chicken-pan is emptied into the kettle, together with some sliced vegetables, covered with water and set over the fire. When well cooked, it is thickened with ground feed, corn, barley and oats, such as we feed the cows. In an hour's time it is out of the way, and the fowls are cheered and strengthened by their warm meal.

The Dairy.

MANAGEMENT OF THE DAIRY HERD.

(Continued.)

It is very apparent that the accommodations for the dairy herd must be conducive to the perfect health of the cattle, the simplifying of the handling of the feed, and the production of perfect milk. It is necessary in this country to house all the forage, and some large storage

building is necessary. Economy of labour requires the feed to be easily placed before the cattle. The best modern practice calls for a separate or slightly attached building for the cows, with no manure cellar under them and no large quantity of forage above them and preferably none at all. The best provision for such manure as cannot be at once applied to the land, is an open shed or covered yard. The cows should be housed on the ground level, rather than in a basement, and the room should be light, dry and spacious. A room open to the roof, which is fairly high, is better than a low, level ceiling above the cows. The former may involve a little more work to keep free from dust and cobwebs, but it affords the air space need for health and comfort. The latter necessitates some special arrangement for ventilation, and these, constructed on the last plans, often fail to work in practice. Sanitary authorities advise six hundred cubic feet of space for every animal, but the best cow-house I have seen allows double this quantity, and it appears none too much. Various material is used for flooring cow stables; in some climates, it is possible to let the cow stand on the ground, the clay or earth being packed hard and raised somewhat above the level round the building; shallow gutters behind the cows, and a feeding floor in front of them. More durable floor, and quite expensive, are made of asphalt and cement, or of brick on edge; but such are damp and cold, causing rheumatism and other ailments, unless covered with a false floor of wood or provided with an unusual abundance of bedding. Box stalls are undoubtedly the ideal for cows as well as for horses; in a box 8 to 10 feet square, a cow may be left untied, and if supplied with enough bedding she will keep clean and well, although the stall is not cleaned out thoroughly more than once a month. (1) But box stalls for a large herd require too much room. Every cow should have her own stall to be kept at all times for her own, and this stall, should be wide enough for her own comfort as well as her milker's, and well protected from her neighbours on either side; three and a half feet width is little enough, and four feet is better. There are so many cattle-ties that it is hard to pick one as being the best, without having the opinion of some dairyman who has practically tested many of the different sorts. But one should be selected

(1) Even for 3 months. Ed.

which combines, in greatest measure, freedom of movement, comfort, safety and cleanliness.

An open, level feeding floor in front of the cows seems to be better than any form of boxes; if boxes are used, they should be as large as possible and yet have every part within reach of the cow as tied, and they must be so constructed as to be easily cleaned, for a cow is as fond of a clean plate as any human being. Some sort of a gutter behind the cows aids in cleanliness, but while it should have good width, 16 to 24 inches, it should not be too deep and if enough to hold the droppings of one night, that is sufficient. The length of stall, from fastening to gutter, should suit the size of the cow; it is bad practice to have them so long as to induce filthy udders and legs, and also to have them so short that cows stand habitually with hind feet in the gutter. Arrangement should be convenient for removing the manure and for supplying absorbents for the urine, and a limited quantity of bedding. Liberal use of sand plaster about the gutters and the floors over which the cattle pass is very desirable as disinfectant, and conserves ammonia. Lime should be used extensively as well as white-wash on the walls of the cow-house, but not on its floors. A stable must be provided with windows to admit light and air abundantly, and arranged to let sunlight as nearly as possible into every portion of the apartment where the cows stand during some hour of every clear day. Yet the windows should be shaded when desired, and they should be fixed to open partly without subjecting the cows to direct draughts of air. The extremes in providing water for the cows are to be avoided. A long walk to get water, in all weather, is certainly objectionable. The best plan is to provide a separate tank for each cow, which should fill quickly after use and freely overflow, so that the water may be always clean and the surface fresh and clear. Water for milking cows should not be too cold, and it is profitable to bring water in severely cold weather to a temperature of about 50°, if it can be cheaply done. Attached to the cow-house should be an exercise yard for the daily use of cows during the stabling season.

Close confinement, with impure air and lack of exercise, is as prejudicial to the health of milch cows as to that of human beings.

Exposure to storms and cold is equally injurious to the health and profit of cows. Every

member of the herd, young or old, should pass under the critical eye of the owner or his trusty assistant daily, and preferably twice a day. The least symptoms of disorder, like dulness, loss of appetite, rough coat, and irregularity of milk, manure, or urine, should be noted and promptly receive the attention which it deserves. Experience is what is needed on the part of the herdman to detect and correct the beginnings of trouble, and thus maintain the general health of the herd.

H. WESTON PARRY.

THE CANADIAN CHEESE TRADE.

A review of the Canadian cheese production and export reveals a number of quite interesting facts, which can be taken as side lines to guide our judgments in many things concerning this business.

The Canadian exported as much cheese in 1899 as they did in 1898, and they received \$1.40 a box more on the average; the net result being that the farmers of the Dominion \$2,000,000 increase. They realized \$14,698,000 for 1,896,000 odd boxes, as against \$12,540,000 for 1,900,000 boxes the year before. The difference between the highest and lowest price per pound for the year was 5½ cents.

It is the custom in England where all the Canadian cheese is marketed, for the British housewife to pay 12 cents per pound for cheese, and the trade there contend that if the price goes above this figure, it reduces consumption 25 per cent. (1)

On the average, the dealers in Montreal handle the cheese as a medium between the Canadian producers and the English trade for ½ cent per pound. The violent fluctuations in prices the past season have not made their bed one of roses.

In August, the cost price ranged from 9½ cents to 12 cents per pound. The increase of ¼ to ½ cent per pound for the cheese produced in the eastern portion of Ontario and the eastern townships of Quebec indicate that the English taste is changing, and that a richer cheese with a softer body is more largely wanted. This kind of cheese, however, calls for much greater risk in curing and handling.

The dairy exports of Canada in butter and cheese the past year will reach in value over

(1) Bosh! Ed.

\$18,000,000. This is truly a wonderful advance and shows the remarkable vitality of the dairy industry. No other branch of agriculture has organized itself as has dairying. It has organized itself for the acquisition of knowledge, for the manufacture of its product, for the transportation of the same to market, and for its sale to the consumer. The dairy farmer is ahead of all other farmers in his understanding of the value of organized co-operative work, and the wonderful advance and steadfastness of his industry in the United States and Canada shows the value of such understanding.

Hoard.

CURE FOR TUBERCULOSIS.

Valuable experiments reported to the committee of agriculture.

Ottawa, June 22.—At the meeting of the Committee of Agriculture of the House of Commons on Wednesday last the special subject which engaged the attention of the committee was that of tuberculosis in cattle. A report was submitted of experiments which have been conducted on the farm of Mr. W. C. Edwards, of Rockland, under the direction of the chief inspector of stock, Dr. McEachran, which has proved most instructive, and is an ample ratification of what is claimed by Prof. Bang, of Denmark, in connection with his efforts in that country to eradicate this disease. Dr. McEachran briefly explained this system to the committee, consisting, as he stated, of removing all diseased animals out of a herd, those which presented clinical symptoms of the disease in an advanced stage being slaughtered. Those in which the disease can only be recognized by means of the tuberculin test are placed in isolated buildings, and are bred from. The calves as they are born are immediately removed from their mothers, and are nursed by healthy cows, in perfectly non-infective buildings, and it is found that 95 percent, in some cases more, can be raised as perfectly healthy animals. At Mr. Edwards's farm other experiments were made which show that this can even go further. It was explained to Mr. Edwards by Dr. McEachran that it is quite possible to bring up the calves healthy by using the milk from the diseased cows, provided that it was sterilized by raising it to 185 degrees tempe-

ature, and where there was no udder infection calves might even be suckled by their mothers in open yards but not in infected buildings. This however, was not to be recommended, as while a cow may have no symptoms of diseased udder today, to-morrow the diversion of the infective bacilli by means of the blood channels to the udder may render the milk highly dangerous. Thorough isolation, perfect disinfection, drainage, ventilation and sunlight are all essentials to success in such an experiment, but the possibility of thus preserving the improved strains of blood and raising healthy calves born of diseased parents under proper conditions, has been demonstrated, a fact which must prove to be of immense value not only to cattle breeders, but to the human race as well. The value of such an experiment made by Mr. Edwards, entirely at his own expense, to the live stock breeders of the Dominion cannot be over-estimated. The experiments are to be continued for another year, at the end of which time Mr. Edwards will have entirely rid his herd of all tuberculous animals without interfering with his breeding operations, and while the experiments are conducted by Mr. Edwards have been costly, the same thing can be done by ordinary farmers, as is done in Denmark continually, and this system will be an important factor in ridding the herds of the Dominion of this disease, which is not only contagious among animals, but is communicable from the bovine to the human subject.

Witness.

TAINTED MILK.

At this time of the year, especially, will it be noticed that milk has sometimes a very peculiar odour combined in very many cases with a characteristic flavour. The spring coming on rather gradually as it did at first, until the very cold weather we have just experienced, did not give such a fruitful supply of milk "off colour" as usual. During the cold, however, it was very noticeable, and particularly in milk being made into cheese.

A backward spring, with a very poor growth of grass, has fortunately been changed by the recent wet weather, which has given pastures a good start, although for the present growth is somewhat at a standstill, owing to the prevalent low temperature.

Now tainted milk mostly comes under the attention of the practical man when cows are first turned out to grass. Either he observes it himself, or if selling his milk wholesale is speedily not tied by the firm who purchase it.

The milk, shortly after drawn, assumes a mildly bitter flavour, which increases with the length of time it is kept, and is more pronounced the higher the temperature. Should the milk be made into cheese, attention is firstly drawn to it at that period when the curd is cut and the whey separates out. The whey tastes different from usual, any sweetness being almost imperceptible.

The bitterness increases rapidly until the whey is drawn, both curd and whey being strongly impregnated with it. During all stages it is noticeable, when the cheese goes to press, and even next day, when taken out for capping, and afterwards bandaging before being removed to the reopening room.

CAUSES.

are difficult to state definitely. Cows receiving daily an abundance of grass, and then when brought in at nights (the weather being too cold at first for them to be left out altogether) part of their winter ration of perhaps hay, straw, mangels, &c., do not generally give milk of the finest nature desired, *i. e.*, at least as regards taste, &c.

The next and most fruitful cause I have noticed is due to the cows when first left out altogether grazing in the hedgerows at nights. The cold nights, which they certainly must feel to a great extent, as compared with their winter housing, cause them to eat under the hedges to avoid the cold winds as well as can be; there the coarsest of grasses and weeds always grow, and are eaten at times like this, whereas, under ordinary circumstances, they are avoided. Also the young chooting buds on the hedges are often eaten, and these and the weeds, etc., may cause the taint referred to.

It is a strange fact that many herbs have a direct influence on the milk, generally for the bad, and although milk flavoured with garlic is not prevalent at this time of the year, the other taint is extremely obnoxious and very deleterious to the cheese or butter produced from such. Bacterial action should not be left out as a cause; possibly some tribe unnamed so far have a good deal to do with the trouble.

REMEDIAL MEASURES.

As far as the milk-selling farmer is concerned, there is nothing better than very efficient refrigeration to keep the taint from becoming worse. At a low temperature, although noticeable to a slight extent, it lies practically dormant. Passing the milk twice over the refrigerator will also aerate or oxygenate it, besides bringing about the extra cooling required. There is a special refrigerator with combined aerator now on the market, but doubtly cooling is sufficient for all practical purposes.

As to cheese-making, when taint is noticeable in the milk the best thing to do is to make it as frequently as possible into cheese. To begin with, add starter and also more rennet than usual, scald to 100 deg. Fahr. (depending on the variety), and allow to become fully acid before drawing the whey, after which keep the curd warm and turn and open out frequently until ground. After grinding spread out in a thin layer for the air to play well about it, and salt more liberally than usual. Leaving for an hour after salting before putting into cheesets helps to free the curd somewhat from the objectionable smell present. In dealing with tainted milk for cheesemaking, the utmost care should be taken not to be deceived as to the degree of acidity of the cheese. It should be borne in mind that the taint masks the acidity, and it is only on strictly definite tests, such as the caustic soda test for acidity, that the different stages of progress in the making can be accurately judged. A feature that it is necessary to call attention to also is that of using pure starter of milk, butter-milk, whey, &c., as the case may be. It should be clean and sharp to the taste and smell. After making objectionable milk into cheese, never keep any of the whey to add to the following day's make, as this only carries on the taint. Start afresh by allowing some pure new milk to go sour, and add that.

Curiously enough it is often the case that ill-flavoured curd develops during the ripening period (three to four months' time) into nicely flavoured cheese. How the ripening process is able to do away with the uncanny taste and smell is not yet explained; however, it often does so, though of course not by a long way every time.

C. W. TISDALE DAVIES.

Long Whatton, Loughborough.

Eng. Ag. Gazette.

Live-Stock.

HORSES FOR SOUTH AFRICA.

Some time ago attention was called to the presence in Canada of two British army officers, Major Dent, and Veterinary-Inspector Philips. England has been purchasing horses from all parts of the world, but none from Canada. These army officers have, however, just completed the purchase of 2,000 horses, largely in Ontario, and they will be shipped at once from Montreal. In the purchasing of these horses the army officers were greatly assisted by W. Harland Smith, of Grand's Repository, Toronto, who made use of his extensive system of agents to collect horses and in an incredibly short time had the necessary number together. It was thought by many that the number of horses suitable for war purposes which could be obtained in Canada were limited, but Mr. Smith says that he could furnish 10,000 if they were needed.

We are glad to see the readiness with which these horses have been obtained, as it bears out what we have always contended, that Canada has the horses and can supply quite a goodly number for the Imperial army if we only have the chance. Having secured their quota so readily, we hope the War Office will instruct the officers now in this country to make further purchases. At any rate these officers should see the range horses before they leave the country and thus know what can be supplied from that source. This shipment will do good and should pave the way for the establishment of a remount depot and training station in Canada. At present the Dragoons at Toronto are breaking in the 800 or so horses sheltered at the exhibition grounds.

After the Spring Horse Show at Toronto the Dominion Minister of Agriculture promised a bulletin on the styles or types of horses needed for army purposes. This should be out at once, or it will be too late to be of any advantage this year. The type of cavalry horse wanted is a horse standing 15.1½ to 15.3½ hands high, and weighing from 1,000 to 1,150 lbs. They must possess lots of substance, have strong backs, and have plenty of neck in front of the saddle. The horses collected at Toronto for this class show considerable Thoroughbred blood and can easily carry the regular campaign weight of 210 lbs.

The horses for mounted infantry purposes are

much smaller, weighing from 950 lbs. up, and standing 14.1 to 15.1 hands high. In fact, they are called ponies, but are horses of great substance, strong backed and well put together. Those purchased all possess great shoulder development and have a good length of neck. The depth of the shoulder of those selected will average about 25 inches, while many will reach 26 inches.

The artillery horses are the heaviest of the lot. In height they run from 15.3 to 16.1 hands, and weight from 1,000 to 1,350 lbs. They must be strong, clean limbed, active horses, possessing quite a bit of the coach type. The average depth of the shoulder in the horses selected for this purpose is about 27½ inches.

The Farmer is glad to see that the black eye given our horses by British army officers some years ago is likely now to be removed. We hope that this shipment will only be the first of many similar ones in the future and that before long remount purchasing depots will be established in various parts of the country.

DIP THE SHEEP.

The most skillful sheep breeders agree that sheep should be dipped at least once a year and the man who neglects to dip his sheep has not yet learned one of the fundamental principles of his business. Not only should sheep be dipped once, but twice a year. All sheep should be dipped after shearing and at this time the lambs should be most thoroughly dipped. Many good shepherds give the lambs a second dip a few weeks after the first and again in the fall, before the weather gets too cold. In spite of the best precautions ticks will get onto the lambs and cause great loss, and the best way to prevent this is to dip. Sheep cannot thrive when infested with lice and ticks. No matter how rich a man may be he cannot afford to feed ticks and lice—anyway for the sake of the poor sheep, dip them. Don't dip the sheep and think the lambs don't need it, or don't think that if you dip the lambs some time after shearing that you have got all the ticks, and therefore don't need to dip the sheep. Dip them both in a good sheep dip, one made by a well-known and reliable firm. Home-made dips can be made, but those on the market are so cheap and effective that it hardly pays to bother with home-made remedies which are too ineffective, because made too weak. Above all use the dip of the strength advise by the manufacturers, and don't deceive yourself that you know better and can dilute it one-half. You may have the satisfaction of having dipped your sheep, but what's the use of that if the ticks are not killed?