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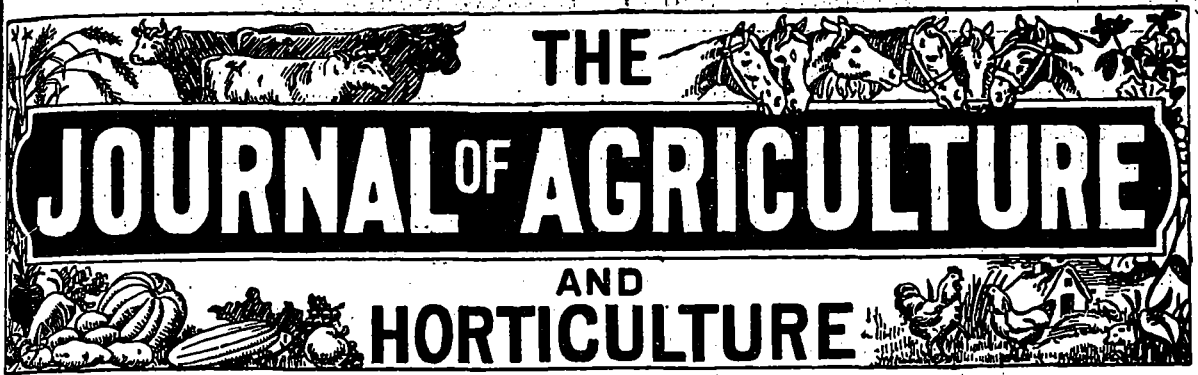
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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

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Notes by the Way.

Sheep-sales. — During the month of August occur the great sales and "lettings" of rams and lamb-rams of the English flock-masters, several of which we used to attend when we were farming in the old country. The greatest day we ever saw was a "letting" at Jonas Webb's house, at Babraham, Cambridgeshire, where rams of his flock were let for the season to the amount of between three and four thousand pounds.

Jonas Webb was game-keeper to Mr. Adeane, of Babraham Hall. His master was then keeping a small flock of Southdown ewes, and in or about 1840, having bought a couple of rams of "Ellman of Glynde," sent Jonas Webb down into Sussex to fetch them. On his return, Webb asked Mr. Adeane to let him a small farm then vacant, as he, Webb, had an idea that, from what he had seen of the Sussex flocks, they were capable of great improvement. Webb's request was granted; he set to work, and when the Royal Agricultural Society's shows were inaugurated, not more than five or six years afterwards, Webb's exhibits swept all before them. He improved the wool, increased the size; and as he himself told us at Windsor, in 1852, was prouder of his "legs of mutton" than of any other of the vast alterations he had worked in the frame of the Southdown sheep. As our dear old friend, Wm. Ridgen, of Hove, near Brighton, England, told us, Webb knows more about a sheep at a glance than I know after a half hour's study.

By the bye, we see in the Agricultural Gazette, that Henry, a son of Mr. Wm. Rigden, has just sold off his flock of Southdowns, by which sale the blood of the Webb, the Goodwood, the Ellman and other leading flocks will be dispersed all over the county, and doubtless some of the rams will be seen in the Dominion.

Mr. Henry Webb's flock, consisted of 472 breeding sheep; they realised £2,229.6s., an average of £4.14s.6d., little enough for a flock that, to say the least of it, could trace its pedigree back to the first French Revolutionary days. For the modern Southdowns all came from Ellman's flock and the improved are in the last resort, due to Jonas Webb, whose rams fecundated the ewes at Hove, at Goodwood, at all the great Norfolk breeders' farmsteads; the Ellises, Colmans, all trace the descent of their sheep to "Webb of Babraham."

The very moderate average the sheep of this highly descended flock sold for may be accounted for by the following facts: first, rivals: Hampshire-downs, the lambs of which breed weigh two-thirds as much in December, at the Smithfield Club show, as Southdowns, at 18 months. Secondly, fashion: the rage everywhere is for Shropshires.

Still, we must confess that, if we could not get Hampshire-downs, we would keep Shropshire, for the Southdown is too small for anything but the West-End of London Trade. Somehow or other, we have only seen one report of the Hampshire-down ram-sales; that of the well-known Chalderton flock, belonging to Mr. H. G. Stephens, M. P. Those offered were all ram-lambs, and were some let for the season, and the second-class sold, the former averaging £16. 2. 1.

We remember well that, at the ordinary farmers' sales, when, at Michaelmas, farms were being given up by the tenants, one of the auctioneers' favourite recommendation of the ewe-flock was that the ewes had "gone to fold" every night during the summer. Poor things! They were enclosed on the fallows

with nothing to eat from 7 p.m. till the "dew was off" in the morning, and then driven to the downs, where they picked up what they could get—it was not much—and all the time they had to provide milk for their lamb, or lambs, besides clothing their own poor bones! Those were the days of "6-tooth" mutton, i. e., three-year-old wether sheep, and wonderfully good it was, far better than "doe-venison," which was the only venison to be had in the winter months. The Royal parks supplied all Her Majesty's servants with "a buck and two does a year," and we remember well the scorn with which we boys refused to eat the haunches of the does the "Queen's Advocate" received, infinitely preferring our own down-mutton.

Stubble-cleaning. — We looked out very intently, during our walks this August and September, to see if any steps were being taken to clean the land during the long drought. Not one attempt did we see!

Vetches. — A correspondent of Hoard's Dairyman writes to that paper, asking for information about vetches. Among other things, he would like to know "how much rye should be mixed with the vetches, to sow an acre of land?" We should be very loath to sow any rye with vetches, as oats are a far more suitable accompaniment to that plant. Our favourite mixture for green fodder is, as every reader of the Journal knows, 2 bushels of vetches, 1 of pease, and one of oats: the cutting to begin as soon as the pease and tares are showing for bloom, and the land immediately after the crop is finished, to be broken up and sown with rape. Of course, this green fodder is to be sown in successional patches, and is intended for spring seeding. If, however, the "climate conditions" of New York will admit of winter-vetches doing well, we should recommend 2½ bushels of vetches to one bushel of wheat.

So much superior is the quality of the winter-vetch fodder to that of the larger, that is, the spring kind, that many of our best East of England farmers sow the winter kind in spring.

By the time the vetches sown with rye are fit for cattle-food, the rye will be advanced in life and too sticky to be pleasant eating. People, who have been in London in the early spring, will say: Oh, but I saw carts loaded with bundles of green rye and tares (vetches;) and the men were peddling the bundles out at the "mews;" true enough, but they are only used as a *bonne bouche* for the horses, not by any means as a stand-by, and the horses, tired of their long winter's dry food, find them an agreeable laxative, for this fodder is cut in its earliest green state, and a full meal would soon produce a too relaxed state of the bowels.

As to the large seeding we recommend, it must be remembered that the spring vetch is one-third larger than the winter vetch. One thing is certain, at least to our mind: if you want quick growth of green fodder, you must sow thickly.

In putting in the seed of vetches, the best plan is to use a drill, and to bury the winter-mixture of vetches and wheat three inches deep, while two inches will be enough for the spring pulse and tares. Sow the first patch in spring as soon as the snow is gone, the next three weeks after the first, and the third fifteen days after the second sowing. Roll the winter sowing as soon as the ground is dry enough, and the spring and summer sowings as soon as the plant is up.

Calves. — G. P. F., writing in *Hoard* about rearing calves, says that in consequence of giving the calves their milk "only about blood-warm," he was badly troubled with his calves bloating; but after warming the milk up to 100 degrees, he has never had a calf bloat. Now, blood heat, by Fahrenheit's thermometer, is 98°; surely G. P. F. does not really mean to say that a difference of two degrees of temperature can account for the marvellous change!

Again, the same writer says: "We generally leave the calves with the cows for two or three days; after which they are tied or put in a pen in sight of the mothers." The

cow should never even see the calf, after parturition: G. P. F. must be fond of rural sounds, among which the most painful to our ears is that of a cow bellowing after its calf, and the next, that of the calf howling after its dam.

Quite right to keep the cows in the cow-house during the hotter part of the day in fly-time, as we should have been glad to see done in the farm on which we passed the summer; and we would have kept the flies out of the house by a net or a screen over the windows and door-ways; but calves, like all young things, need exercise, and would it not be as well to turn them out during the night? Surely, the numerous dressings against the fly some must be effective!

LIVE STOCK AND DAIRY.

Experience in Raising Calves.

G. P. F., NEW YORK.

I have just been reading C. P. Haskins's article on raising a calf economically. There are many things in it that are most excellent, although I do not think it pays to try to raise calves too economically. Late in life we settled on a small farm. First came the choice of a cow, and as we had long ago decided on a Jersey, we soon found one. When the calves began to come we had no experience to fall back upon and could only work from agricultural papers, which were invaluable.

At first we warmed the milk for the calf, but only about blood warm, and as a consequence we were badly troubled with our calves bloating. Now we warm the milk to 100 degrees and have never, since adopting this plan, had a calf bloat. Unlike Mr. Haskins, I think there is far less danger from overheating the milk than from underheating.

I usually attend to feeding the calves the first six or eight weeks of their lives, and sometimes much longer, so what I give is from my own experience and is not fine spun theory. We generally leave the calves with the cows for two or three days, after that they are tied or put in a pen in sight of the mother. We feed new milk

for the first two or three weeks, then we get them gradually off onto skim milk, and when the butter-milk is sweet a little of that is added. We also put in the milk a small handful of linseed meal. We like to have the calf learn to suck his milk; it is much better than for him to drink it. As soon as possible we get our calves to eat hay or clover. We cut it fine in the feed cutter, moisten it slightly with a little warm water and put in a very little bran and middlings. This is fed at noon with perhaps some potato parings, of which the calves are very fond.

"We never allow our calves outdoors in summer, as we do not think they can grow well and fight flies at the same time. Even our cows are kept in the stable during fly time in the hottest part of the day. In this way, although we have Jerseys entirely, our calves are large and beautiful, and sell for a high price. We sold heifer calves last winter which were only seven months old for \$20 apiece. And all this because they received good care from the first."—*Hoard*.

The Montreal flower show.—The annual exhibition was held, at the Windsor Hall, on the 21st and 22nd of September. As usual, very few visitors during the day, but, we are informed, a fair attendance are night. We were sorry to see so poor a show of ordinary stove plants, some of which might better have been kept at home, though the season at which the exhibition is held may partly be accountable for this. One stand of geraniums was really fine.

Palms and ferns were really splendid. By the bye, there is not the first time that the "Akalypha Sanderi" has been exhibited in Montreal. It was to be seen last year in the Fraser Hall. The name; which should be written "akalephe" we think; is the Greek for a nettle.

Some lovely pansies; very lovely indeed; we were glad to see the darker shades predominant, though, when we wrote, last spring, to a seedsman requesting him to send us a packet of "dark pansies," we hardly expected to find, as we did, that the flowers when produced were all black.

Mr. Wilshire's foliage plants were worth a second inspection; the fuchsias were but so so; the hydrangeas seemed to have been damaged

in transit; but the "adiantums" and the "gloxinias" were a credit to their growers.

Not a good show, on the whole; but oh! that jingling piano!

Nitragin.—Very marvellous indeed is the following account of the effect of "nitragin" on crops at the Alabama Experiment Station:

INOCULATION OF THE SOIL WITH NITRAGIN.

It may be of considerable interest to our readers to cite the experience of the Alabama Experiment Station in connection with the inoculation of the soil with nitragin, the new germ preparation for supplying the soil with the organisms, effecting the fixation of the free nitrogen of the atmosphere, when leguminous crops are cultivated. Four plots of one-fortieth of an acre in extent were experimented with, the crop sown being the hairy vetch. The soil was of a poor nature, and was manured at the rate of 400 lb. of superphosphate and 120 lb. of sulphate of potash per acre, no nitrogenous manure being applied. Two of the plots were inoculated with the nitragin cultivation in addition to the manures, while the other two plots only received the superphosphate and sulphate of potash, no nitragin being applied. It may be well here to describe exactly how the process of soil-inoculation was carried out. Some earth was taken from a lawn belonging to a garden which, for several years previously, had grown luxuriant crops of the common vetch, and which, consequently, was rich in nitrogen-fixing bacteria; and of this a solution was made in water. In this solution the seeds of the hairy vetch were dipped before sowing. All the experimental plots were cut on the same day; but only the produce from two of the plots, viz., an inoculated and uninoculated one, was weighed.

The uninoculated plot yielded 900 lb. of green forage, which produced 232 lb. of dried hay; while the inoculated plot yielded 9,136 lb. of green forage, producing 2,540 lb. of dried hay. It will thus be seen that in two plots, similarly manured, but one of which received an inoculation of the nitragin ferment, there was a difference in favour of the inoculated plot of 8,236 lb. of green fodder, and 2,308 lb. of dry fodder, or nearly ten times as much. Nor did the beneficial effects of the application of the nitragin ferment end simply in the production of heavier crops; since it was also found that the soil of the inoculated plot was

left in much superior mechanical condition as compared with that of the uninoculated plot. With regard to the cost per acre of inoculation, it may be stated that this was found to amount to a little less than nine shillings.

At the same experiment station, Professor Duggar has also carried out a series of pot experiments to test the effects of inoculation on such crops as field peas (Canadian), crimson clover, alfalfa, white lupine, and cowpeas, with extracts from soils containing large numbers of the bacteria favourable for the growth of each kind of crop. For purposes of comparison experiments were also carried out on plants which were treated in every respect similarly to the inoculated, with the exception that they did not receive any germ fertiliser. It was found that in all cases the inoculated pots produced much larger crops than the uninoculated ones, the increases being as follows:—Hairy vetch, 89 per cent.; Canadian field peas, 138 per cent.; and crimson clover (young plants), 146 per cent.

Winter vetches are so important that they deserve a separate notice. They may be sown in this and the following months, and when sown in succession they come in in the same order and furnish excellent food for sheep from May to September. Vetches are a most valuable crop, and are never in the way. They can be soiled in yards, fed on pastures, folded on the land, converted into hay, or seeded according to taste. The crop is accredited with the faculty of accumulating nitrogen in the ground, and since this fact was discovered vetches have received increased support. The chief drawback to them as a catch crop is that they are liable to delay root sowing too long, and hence turnips after vetches are generally small.

Eng. Ag. Gazette.

Prize money withheld at the Industrial Fair.—“At a meeting of the Board of Directors of the Industrial Fair held last week the report of the Cattle Committee was presented containing the statements of the veterinarians to the effect that no contagious disease existed among any of the cattle at the recent exhibition. A statement was read from the manager of the Miller & Sibley Jersey herd, in which he admitted having had some milk injected into the udders of the cows shown by him at the Fair, from the effects of

which they died. The board decided to retain all the prizes and money won by this firm, and also to restrain them from showing at the Toronto Industrial Fair for one year.” A very light punishment for an action that we cannot find words strong enough to characterise. Ed.

Swine.

THE BACON HOG.

The bacon hog is the agricultural topic of the day. England consumes annually much more bacon than English farmers can produce, and to supply this deficiency all agricultural counties are making their best endeavor. Our “pea fed” Canadian bacon has already secured, owing to its superior quality, a great popularity. It is sold at top prices on the London market, and the supply is yet far from being equal to the demand. But bright as the outlook is for Canadian farmers, it is evident from the past experience of other counties, and especially Denmark, that we cannot increase or even hold our trade without the utmost care and vigilance. Competitors are not lacking. The States, heretofore producers of cheap bacon, are making great efforts to improve the quality of this article. Denmark is endeavoring to regain her place. On the other hand, Canadian packers and English dealers have been complaining much of late against the ever increasing quantity of inferior bacon furnished by the farmer. While a few farmers are regularly sending first class hogs, the great majority are yet producing very inferior bacon.

It is quite obvious that we cannot hope to maintain the high prices that our bacon has so far obtained without exporting a first class article and that a first class article cannot be produced without special care. Furthermore, our only hope of extending and maintaining our trade lies in the production of first class bacon. To add yet to the amount of cheap bacon with which England is always flooded is not possible, nor would it be profitable. The States hold the market in that line and we cannot compete against them. Any deterioration in quality means the loss of our trade.

From a series of articles published in *Farming* by different packing houses, we are told that packers complain chiefly against 2 kinds of hogs:

light, or immature, and fat hogs. The meat of the first lacks flavor and is flabby and soft. It is not wanted on the market at any price. The fat hog is no more popular than the light one, and apart from this consideration, it means a direct loss to the feeder, for time and again, experiments have proved that the cost of putting on flesh augments proportionally with the weight of the animal. Thus the hog which forms the ideal of the packer is also the one which the farmer has the greatest interest to produce, feeding economically and securing at the same time the top prices.

The bacon type—the long and lean pig required by the packer—will be found chiefly in the Yorkshire and Tamworth breeds. “Light in the head, jowl and neck, long in the body with the back of medium and even width, sides deep and in straight line with the back, good hams and thick belly—such is the regular bacon hog.” When the animal is finished, the fat covering the back, loins and shoulders should be of a uniform thickness, about $1\frac{1}{2}$ in. Good authorities estimate that in order to bring such an animal to the required weight—175 lbs.—8 or 9 months are required.

Another evil which packers have to contend with, and which may appear in all hogs whether light, lean or fat is the softness of the meat. This fault ruined the Danish trade and may shortly do the same with ours if feeders do not adopt better methods. The softness of bacon develops during the curing process, and, according to its degree of intensity, reduces more or less, the worth of a side of bacon. Various causes produce it, and they have not all yet been exactly ascertained. It has been assumed that all cheap food stuffs, such as boiled roots, corn, produce soft fat. In fact, many food stuffs have been successively blamed for producing soft bacon, and chief among those corn and clover. Extensive Danish experiments have demonstrated that the exclusive use of corn, from an early age to the finish, inevitably gives soft bacon. No doubt the same might be said of all foods with highly fattening properties. But experiments conducted at the Ontario Agricultural College have proved that corn did not produce any softness when used for finishing animals which had acquired, by plenty of exercise in their first period of growth, a good muscular development. Pigs confined from weaning to finish, fed on wheat middlings in the first period of growth, and on peas, barley and shorts in the latter, gave soft bacon, while another group fed in

the same manner, but allowed to exercise, produced firm bacon. On the other hand, the use of skim milk and whey in the proportion of 2 to 3 lbs. for 1 lb. of grain, seemed to make up for the lack of exercise in a group, which, although confined, gave firm bacon.

It cannot be denied that many of our farmers still entertain certain prejudices regarding the bacon hog. Some believe that the weight at which this animal must be sold for the market does not allow to realize as much profit as for heavier hogs. Others are convinced that the cost of feeding is so large as to leave very little benefit. A fair trial will dispel these objections. As we have seen, the cost of fattening augmenting with the weight of the animal, it is better to sell a hog at 175 than at 200 lbs. While it certainly requires more skill and care to raise a hog for exportation than for the home market, experiments have never shown the cost of feeding to be greater in the first case than in the second.

Every farmer who engages in the bacon trade should remember that it is his interest as well as his duty to produce a first class article. The only remedy the packer can apply when he receives soft bacon is to cut the prices all round, and at the same time our reputation suffers, for, although sold at a lower price, this inferior bacon is nevertheless sold as Canadian bacon.

CHAS. MORTUREUX.

From an exchange: Bacon hogs are now selling in the principal Canadian market centers at \$5 per cwt. for choice, and the outlook is for decidedly higher prices. This is quite in contrast to the American market where the top price, last week, was \$3.95, which was at Chicago,—a margin in favor of the Canadian hog of \$1.05. This is most remarkable. It is quite inexplicable to find hogs selling on either side of an imaginary line, a few hundred miles apart, as at Buffalo and Toronto, at a difference of \$1.05. One should think that the time has come for the American hog to kick, or rather, squeal, to find himself at such a discount below his Canadian brother of the big pen.

The high price of Canadian hogs is the more unusual when we come to consider the phenomenal increase of Canadian hog products to the English markets during the year just past. A few of our friends across the line have been saying “What’s the use for us to begin catering to the English market. There is a market there for only

a few thousand aristocratic consumers and it will soon be glutted."

Well, evidently there are more than "a few."

ADDRESS BY MR. J. A. McMURRAY

Of the Ottawa Experiment-Farm.

Pray do not imagine, Gentlemen, that, because my name is Scotch, I cannot address you in good Canadian.

When I got leave from my superiors to come hither, I expected to come to listen to the lectures and discussions; I came as an enquirer, to gain information. To my great surprise, I was asked to address you. Taken thus unexpectedly, I cannot treat any predeterminate subject, but, as you were just told, I am on the staff of the greatest agricultural establishment of the country, The Central Experiment-Farm at Ottawa, and I am about to say a few words on each of the following points:

1. The Experiment-Farm;
2. The part it plays in the different branches of farming;
3. Its importance to farmers as a model-farm.

I should have also something to say to you about the breeding of pigs and the selection of good milch-cows, but I shall not have time this afternoon; so, if you will allow me, I will treat those subjects this evening.

The Ottawa Experiment and Central Farm, as well as its branches at Nappan (N.S.), Brandon (Man.), Indian Head (N. W. T.), and Agassiz (B. C.), belong to the Dominion; they are the property of the Canada-farmer. The Ottawa Experiment-Farm was established by the Federal government for the purpose of making experiments in every branch of farming, and to answer the requirements of the provinces of Quebec and Ontario, as the branches do to the other provinces. By means of the branches the experiments made at Ottawa are repeated, to find out those that succeed in one climate but fail in others.

The Ottawa Experiment-Farm contains 465 acres of land (550 arpents); of which 65 acres are devoted to the planting of forest and ornamental trees; 30 acres to experiments of re-forestation; 35 acres to experiments in the practical cultivation of fruit. In this orchard we have 700 sorts of fruit-trees. In the kitchen-garden, we grow a thousand sorts

of vegetables. Besides this, there are grown on the farm 125 sorts of wheat, 74 of pease, 72 of oats, 125 of potatoes, 67 of roots, swedes, potatoes, etc. Thirty-six kinds of corn are grown for cow-fodder; so, as you see, experiments in all the branches of farming are carried on. The branches in the other provinces do the same kind of work in accordance with the needs of their respective province.

Besides this, there is the *stock* of the farm: 100 to 110 head of cattle, and 60 to 75 pigs, besides poultry, of which we have 17 breeds, and 300 subjects; as to bees we have 60 hives.

The work of all this is done experimentally, practically, just as it ought to be done by farmers.

At the head of each department, there are professors: a specialist to attend to the poultry; another for the bees; a botanist, an entomologist; a chemist to analyse everything pertaining to agriculture, and a horticulturist to make experiments and to reply, as all the others of the staff have to do, to every question asked by the farmers.

This great farm publishes yearly a complete report of all the experiments made, not only at Ottawa, but at all the branches; all the experiments there are reported and explained. This report is sent, free, to all farmers who ask for it. You have not even to prepay your letters; all correspondence with the officers of the experiment-farm is free of charge.

Now, every variety of pease, oats, barley, wheat are also placed, free, at the service of any farmer who wants to try them. You have only to write to us and say that you want a good kind of pea, potato, wheat, etc., and a bag of 3 lbs. weight will be sent to you free of charge. This is another service the farm does you.

In the annual report of the farm, printed in both French and English, you will find a full report of everything we are doing. In 1877, Ink, all the grain in Manitoba was ruined by a general frost. There was no Canadian Pacific then; the Government was obliged to buy wheat in the United States, and to send it through Dakota to be able to distribute it for seeding. Then, we tried to find a more suitable variety of wheat. A Russian kind was imported and tried. It was found to ripen well, but the straw rusted a good deal. Then this was crossed with another kind of wheat, just as in crossing stock, with this difference, that this operation on wheat is one of the most difficult and delicate that can be done.

By this means, a new wheat was obtained that does well in the Northwest. All these investigations and experiments were carried on at the Experiment-Farm.

The prosperity of our farmers and the success they have met with are due in great measure to the labor and experiments of the Experiment-Farm. The work done there is slow and costly; it requires much study from each of its officers; but when once an experiment succeeds, it is spread all over the country, through the reports and bulletins, and every one is enabled to benefit by it.

Look, gentlemen, at the work being done at the Experiment-Farm. Ask for and read its reports; you will find in them many things useful to you. They are all sent out gratuitously; not even your letter asking for them needs pre-payment.

(From the French).

(To be continued).

THE BACON-HOG.

Why are long hogs wanted? They are more profitable, for no matter how long, there is only one head to lose money; the shoulder is not much in demand and does not seem to be materially increased with the increase in length. It is the middles and hams that are wanted, and perhaps the middle cut brings the most money all the time, and herein lies the reason for the demand for long pigs.

SOFT AND LIGHT HOGS.

There are still two classes of pigs that are constantly being marketed that cause much annoyance and loss to the trade, and are a damage to the reputation of Canadian bacon generally, viz., soft hogs and light skinny ones of 70 to 140 pounds each. In our opinion soft hogs are the result of soft feed in nearly every case, and are produced by those who are lacking in common honesty. They are trying to get something for nothing, and when they feed cooked roots and other soft, mushy food only, and say they think it makes first quality of meat, they disclose their ignorance, or rather, they do know that by such means the weight of their hogs is easily and cheaply increased, and that is as far as they are concerned. Grass feeding is also a cause of soft pork, and in addition to being soft the fat turns to a greenish yellow. Grass is well enough in its way, but pigs should be kept off it at least a

month before being sold to the packers. Soft pork is produced just because it costs less than the right kind, and if the trade is thus ruined, those who are guilty will try and look surprised. Why so many light hogs are forced upon the market has always been a mystery; lack of food or lack of money on the part of the feeder will account for some of them but not all. The meat of immature pigs is not satisfactory, being soft, flabby and of poor flavor. It is bad policy to market any animals before they are in a fit condition.

As to the feeding of corn; this is a very important matter. We do not claim that the soft, trashy stuff that is marketed is fed wholly on corn, but we wish to call attention to the farmers who persist in feeding corn alone, that they should not expect to get more for their hogs than American corn-fed hogs are worth, as corn-fed hogs will not make the firm and lean meat that mixed grains will do, and on account of running too much to fat will not suit the fancy export or domestic trade.

WHEN IT IS BEST TO SELL PIGS.

We would say, sell them when they are ready, that is, when they are in good flesh and weighing around 175 pounds. Sometimes the demand will call for them somewhat heavier, and now and then a little lighter, but a good bacon hog of 175 pounds usually tops the market. Remember the demand for bacon runs all through the fifty-two weeks of the year, and it will often pay to have them ready between times. October, November and December are not remarkable months for high prices. We give the above only as a hint. Every feeder must decide this matter for himself. We desire to serve you by doing what in us lies. Produce a steady supply and thus maintain as steady a price as possible. *We see nothing but injury for the trade in sudden and violent changes in the price.*

The Ingersoll Packing Co.



The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

QUEBEC COUNTY

Agricultural and Quebec Horticultural Societies Exhibition, Sept. 6 & 7, 1899.

The annual shows of these societies were held jointly this year, and the plan proved to be a good one. As it gave the city people a good opportunity to see the agricultural display of live stock, and the county folks the beauties of the Garden and the Hot-house.

The exhibition in both departments was highly creditable to all concerned, and a great improvement on former years. These County and local shows are, in some respects, more interesting than the large open ones. They exemplify more exactly what a certain district is capable of, and should excite a spirit of friendly emulation amongst neighbours, more important than the mere fact of winning a prize, are more likely to benefit the locality by showing what crops can be raised successfully in it, and what improvement have been made from year to year in the breeds and management of Live Stock.

The cattle exhibited by Messrs Delaney, Ashmead, Dundon, Tozer & Co., Michael Connolly and John Jack were excellent, horses of the useful breeds were well represented. Mr. Delaney's one year old boar, was a fine animal, and the litter of pigs bred between the Tamworth and Berkshire, showed the advantage of crossing these two hardy and useful breeds. Mr. Delaney also had some fine pens of sheep.

The Horticultural department was characterized by the marked excellence of culture, proving that there is good land and good cultivators in the county and suburbs of the city of Quebec. It is safe to assert that, great as the improvements have been during the last few years, in and around the ancient capital, farming and gardening have kept pace with them, and not only the exhibition, but a walk through the various markets, on a market day, will illustrate the fact.

There are few places where the public are better supplied with fresh vegetables, almost entirely brought in by small farmers and market gardeners of the district, and are consequently much fresher than those brought from a long distance.

The prize winners for the class for vegetables, were Messrs Delaney, Jack, F. Byrne, Ecuyer, Paradis, Jas. West, Messrs West, A. West, E. Paradis, A. E. Bédard, Leclerc, O'Neil, T. Moore, A. Moore, junior, &c., and for plants and cut flowers, Mr. L. Chollet, gardener to the Lieut-Governor, bore off a great many of the principal prizes, closely followed by:—M. W. Wilcock, M. A. Rhodes, G. Leclerc, M. Langton, gardener to G. T. Ross, Esq., The Sillery nurseries, F. Ross, I. Verret of Charlesbourg, whose cut flowers, particularly the Gladioli and perennial Phloxes were especially fine. Mr. Verret also had some excellent honey, proving his success as an apiarian, in fact, few things which this gentleman undertakes prove to be failures, and it is due to him to state that he has done much to excite in his neighbours greater interest in their rural pursuits, particularly the raising of fruits, flowers and vegetables.

In the Agricultural Department we noticed that the President, S. Lesage, Esquire, the Vice-president, Mr. J. Jack, Messrs W. Lee, C. P. Delaney and others, took a very active part

While the secretary, Mr. F. Connolly, performed the onerous duties of his office with his usual energy and to the full satisfaction of all.

Mr. E. E. Ouellette, the indefatigable secretary of the Horticultural Society had his hands full, but did his work to every ones satisfaction, and the judges, Messrs Geo. Moore and William Penny, who received very valuable assistance from Mr. Thos. Brown, got through their labors which were not small on account of the close competition in many classes, only regretting that the funds did not admit of their awarding many more prizes to deserving specimens which were necessarily left out.

The subsidy granted by the Quebec Government was money well invested, the societies scored a marked success, and it is easy to predict that another year they will receive, as

they deserve, more public recognition. The Exhibition was opened in due form by His Honor, Lieutenant-Governor Jetté, and a numerous staff, and was well attended.

PUBLIC GARDENING IN THE CITY OF BOSTON.

Those who have visited the public gardens of this highly esthetic city must realize the fact that gardening has received its share of attention, amidst all the triumphs of art, with which it is so richly embellished.

Its churches, in all their architectural grandeur of spire, dome or pinnacle, pointing to the sky. Its institutions, libraries, museums, palatial hotels and stores, and private mansions, in all imaginable styles, make Boston one of the most beautiful cities of the New World, and to add to this beauty are its avenues of trees, stretching in every direction, and its public squares and gardens in which the most refined taste, backed by ample funds and great executive ability, exercised during a series of years of the most indefatigable enthusiastic and well directed effort, has produced effects in harmony with their environments.

Mr. William Doogue, the head city gardener, has held the position for more than a quarter of a century having, by his efficiency, justice to his employers, and equally justice to his subordinates, of which he has several hundreds, retained his place against all the machinations of municipal politicians; and the wisdom of the authorities in sustaining his claims is apparent in the order and beauty which characterize his work, and the harmony which exists in his department.

Mr. Doogue is an example of what enthusiastic devotion, added to knowledge and backed up by capital, can accomplish.

My first sight of Boston common, was in 1863, and then it was a rough, uncultivated piece of land, the chief attractions of which were its "Frog-pond," and its Jinko tree, a very fine specimen of the curious conifer *Salisburia adiantifolia*; and the lower part of the enclosure was a miasmatic swamp.

After the Southern rebellion, the Bostonians turned their attention to the improve-

ment of their city with their usual vigor, and lavish expenditure, and now, the barren waste has become a scene of horticultural beauty and delight to the thousands of the citizens who can enjoy a few hours of needed recreation, within the leafy shades, ramble amongst the gay parterres, or sail in miniature propellers round the willow-embowered islands which add charms to the lake which intersects the grounds, and in the clear, pure waters of which the sunbeams sparkle to the happiness of the little people who play upon its bank, or sail their toy-boats on its bosom.

Observing that the exotics which require winter protection had grown to very large proportions, and would require considerable space in the winter quarters to which they must annually be removed, I concluded that the city greenhouses must be an interesting place to visit, and so took the electric which conveyed me to Dorchester where they are situated.

I knew I must find some extensive glass structures to accommodate so many large specimens I had seen in the public gardens, but was scarcely prepared to see nearly four acres of land covered with glass.

Of course, the plant houses were all empty, their contents at this season being planted out, but, perhaps, this gave me a better opportunity to examine their construction and for the convenience of the purpose for which they are used, it is doubtful if they can be excelled. The heating is done by hot water, and the pipes are so arranged, that there is a perfect and rapid circulation, a matter too frequently overlooked in hot water heating. The extensive propagating houses, in which are raised the hundreds of thousands of bedding plants, required for the city, are built and arranged as to bottom-heat, and the admission or with holding of air to the cutting as required, with the greatest nicety of detail which renders propagation a rapid, certain and easy process.

The plan of the building is such that every part can be reached, in the winter, without going outside.

The large palms, Cycads, ficus, hollies, dracenas, and other exotics occupy the centre houses, and the smaller houses branch out of

these centres, on either side. They are so arranged that the plants can be readily taken in and out at the right season, and their removal is so systematically done that the difficulty is comparatively small.

I had the good fortune to meet the superintendent, Mr. Doogue, who kindly explained to me many matters relating to the working of the establishment in which he took a pardonable pride, seeing that it had grown up under his planning and supervision. Mr. Doogue also furnished me with some few statistics, which are interesting as showing the extent to which public gardening is carried in Boston. He said that he had, under his care, 76 parks and squares of various dimensions, the public gardens being the most important. On these eight distinct crops or displays of plants and flowers are made every summer:

- 1st. Early bulbs, Crocuses, etc.
- 2nd. Hyacinths and Narcissi.
- 3rd. Tulips.
- 4th. Pansies, Daisies and Forget-me-not.
- 5th. Lilies and mixture of other bulbs.
- 6th. Rhododendrons.
- 7th. Hybrid perpetual roses (of these ten thousand are used which are all potted and plunged in the earth, just as they are coming into bloom).

8. Bedding plants generally, such as Geraniums, Coleus, Dracaenas, Coladiums, and also exotic ornamental foliage plants, Fancy Coladiums, Crotons, Ficus elastica, Araucarias, etc., all arranged to produce the most beautiful effects of contrast or harmony of color, throughout the late summer and autumn months. These displays are so arranged that they succeed each other, one occupying the space as soon as its predecessor is removed.

To do this successfully, involves an immense amount of labor and judgment, but it makes the garden a complete floral kaleidoscope throughout the season. Besides all this, much attention is given to what is technically called "Carpet Bedding," in which are used the dwarf, compact growing plants, such as sedums sempervivums, alternantheras, alliums, etc.

These are planted in patterns appropriate to the current events of the time, with mottoes and emblems, as for instance, when the socie-

ty of Christian Endeavour held their convention in Boston, the carpet flower beds represented the emblems of the Christian faith.

On all great national fêtes and occasions, these beds are appropriately filled. This appeals to the popular taste and sentiment, an excellent idea of Mr. Doogue which will be copied in other cities, some of which have applied to him for plans and information on the subject.

I also noticed some plants which are remarkably effective, Lantanas trained as standards, four to five feet high, their round, bushy-heads literally covered with various colored flowers, orange, red, pink, yellow and white, planted amongst shrubs whose blooming season is over, give them a very gay appearance.

Of course it has taken years to bring them to their present state of perfection, but they will repay the care they have received.

Mr. Doogue had just finished sowing the pansies and daisies for next season's crop, and the extent of the number of plants generally required, may be judged by comparison with these, they occupied according to the book (and a record is kept of every transaction) 984 hot bed sashes, 25,000 hydrangeas, over 10,000 roses and other plants in proportion are needed to decorate this immense system of parks and squares.

This will give a faint idea of the large sum expended annually to please the public taste, and encourage the love of flowers in the United States, and what money skill and well directed industry can accomplish. And who shall say that these efforts are squandered, or that the moral tone of society is not benefited? Men and women locked up all day in a dusty workshop, a too often poorly ventilated office, or crowded retail store or restaurant, can not fail to find some relief in the enjoyment of these open air spaces, embellished as they are by the gardener's art and the wondrous vegetable production of other climes.

To the observant mind, "a thing of beauty is a joy for ever," and who can tell how soon the careless and unobservant may be led to observe and profit by the works of the great Creator, thus presented for his contemplation. In addition to watching all the details of pro-

viding the plants, planting and keeping in order so much pleasure grounds, the superintendent has also the oversight of over 30,000 shade and ornamental trees, of course, he has a large staff of foremen and assistants, but the responsibility of keeping these trees in health, properly pruned, and free from insects devolves upon him, so his office is no sinecure, and the whole condition of trees, parks, squares and gardens, shows that he well perform his part. In conversation with Mr. Doogue, I found that the rich dark green and dense appearance of the lawns is kept up by the application of Canadian wood ashes, which must come up to a standard of 8 per cent of potash, and several carloads of which are used annually.

What a lesson for Canadian farmers to make, keep and use all the ashes themselves.

G. MOORE.

THE ANNUAL EXHIBITION

*Of the Montreal Horticultural Society, and
Fruit Growers' Association of Quebec,
Sept. 21st and 22nd, 1899.*

The above Society held its display of fruit, flowers, and vegetables this year in the Windsor Hall; it was creditable in most respects. The falling off in competition is to be regretted, for instance, Mr. I. Rubenstein was awarded 20 first prizes in the amateur class, 13 of that number being without a second award. Again, in open class for plants, Mr. R. B. Angus took 8 firsts without competition. I am afraid that until the Society is better supported by the public, the same thing will again occur, the absence of stated money prizes in the schedule no doubt deterring many from exhibiting. The directors behaved handsomely in guaranteeing the hire of the hall. Much as these gentlemen are to be admired for their public spirit, it is a pity that not one of the practical gardeners of the district is on the board. A rule, which was better enforced this year than usual, was that all specimens must be grown by the exhibitor, a much needed reform. Another rule, only carried out to a small extent, and most necessary as an instructive feature, viz: the correct naming of all specimens, especially of vegetables and fruits, potatoes for instance, if not so named are puzzling to visitors looking

for knowledge, also to ensure the varieties in collections being distinct.

In class A (open) plants, the most notable feature was the really fine display of ferns by The Mount Royal Cemetery Co., Lord Strathcona and Mr. R. B. Angus, especially *Adiantums*. The varieties *Pacottii* and *Farleyense* being the finest yet shown here. The *Anthurium* grown by W. Wilshire, with 16 flowers, was remarkable. Palms and Crotons were the great decorative feature, the former being well grown healthy specimens, and the latter, fine plants, but not so effective in color as last year. *Gloxinias*, fairly well grown and flowered, were shown by G. Buddo and G. Trussel; a hanging basket of Ferns *Devallia* (*Hare's foot Fern*) was beautiful, also a blue orchid *Vanda cœrulea*, two large finely coloured plants of *Marranta Zebrina*, a finely grown and large plant of *Dracena Lindenii* with a beautiful sample of the variegated pineapple. Blue *Hydrangeas* were shown tho' rather past their best, the colour is not natural but produced by the use of Albert's horticultural manure; iron filings mixed with the soil or watering with alum water will have the same effect. A remarkable sport shown by Mr T. A. Dawes, Lachine, C. A. Smith, gardener, of a white and green *Coleus* was very attractive.

Class B, Cut Bloom. — Sweet peas were to the fore, Mr. J. S. Harkom, Melbourne, P. Q. showing a splendid collection of distinct colours, and large flowers. The collection of out door flowers shown by C. A. Smith and G. Trussel were good in variety and arrangement. *Gladioli* were fine, *Dahlias*, *Tettnias* *Pansies* and *Phlox* were fairly good considering the late dry season followed by heavy rains. *Dianthus*, *Hollyhocks*, *Verbenas*, and *Asters* were much short of last year exhibit both in number and quality. Mr. D. Williamson's collection of *Violas*, unnamed seedlings, was very fine, eclipsing their relatives the *Pansy* altogether, and appearing to stand the heat and drought better. Bouquets and roses of cut flowers were staged by G. Buddo, Mr. Wiseman and Mr. Williamson, and Mr. Dunlop of Toronto sent 8 vases of roses, amongst the newest varieties of which were *Lady Dorothea*, *President Carnot*, and *Golden Gate*, pretty white, shaded salmon, pink and yellow respectively.

Class C, Fruit (open). — Apples, Canada's leading and world renowned fruit, were finely represented. Perhaps in size, the fruit was rather smaller than usual, but colour and therefore flavour were very evident. Mr. Malcom Smith, Lachute, was prizeman for 25 and 15 varieties; also for a new seedling, apparently a good late cooking. The same gentleman was again 1st for 6 best varieties for commercial purposes viz: Duchess, St. Lawrence, Wealthy, Alexander, Fameuse, and King of Tomkins' County. I suppose the 6 varieties above named, with the exception of Wealthy are meant for local Autumn trade, as they are not first class packers for export. In separate varieties, 5 of each, Mr. R. Jack, Chateauguay Basin, Miss Fulton, Maritana, and Ignace Morand were leading winners. The Rev. Robert Hamilton, Grenville, Que., as last year, had a splendid exhibit of apples the best of which will be preserved in acid, for the Paris Exhibition of 1900. He also staged over 50 varieties of Russian apples, the 6 best of which are named Switzer, St. Peter, Winter apart, Lord's apple, Seveland and Raspberry. In Pears, G. Trussel, and G. Buddo were most successful, Flemish Beauty being the leading variety. Plums were in the minority. Mrs. J. Anslie, Outremont, and Mrs. Jack had fine baskets of fruit tastefully arranged.

Out door grapes, Mr. Mead Patterson, Clarence Hill, Que., G. Trussel, W. F. Denman and R. Jack were the leading exhibitors. The best varieties were Lindley red, Herbert and Barry, black; Niagara white and a new white named Eclipse said to be superior in flavour to any other out door grape. Hothouse grapes were good, especially the white varieties. Golden Hambro, and Muscat of Alexandria being ahead of the black varieties, both in size of bunch and berry, an unusual occurrence. W. Wilshire and W. Whiting, Mr. Mussen's gardener, were respectively first and second in above. Melons were very moderate, both in quantity and quality.

Class D, (open) Vegetables. — Taking the show of vegetables all round, there was a fine clean well grown display. Roots considering the variable season were good, of celery and onions excellent samples were shown; tomatoes were also good, Ignitum, Livingstone's Favourite, and Perfection being the best reds, as to yellows, they are pretty. Potatoes were very fine, a little on the large side

perhaps, and therefore inclined to coarseness for table use; Ignace Morand took honours for best 6 varieties, named Lee's Favourite, Beauty of Hebron, Vick's Wonder, Freeman, Puritan, and Rural New Yorker. Mr. Morand was also first with onion's 20 each of white, red and yellow; Mr. Thos. Hall, Outremont, being a close second. The above named were also first and second in really fine and well arranged collections of vegetables. Tho' why they should include melons in the above category I am unable to say. (1)

Class E, Amateurs. — The prize takers in this class were Mr. I. Rubeinstein, Miss Stowe, and Mr. J. L. Wiseman; the quality was equal to last year's exhibit, but in quantity there was a falling off.

Cottage Gardens Suburban. — 1st, Mr. Jas. Currie, Roslyn Avenue, Westmount. Prize given by Mr. Ramsay.

2nd, A. B. McFarlane, Aberdeen Avenue, Westmount. Prize by Mr. Vincent Meredith.

City — 1st, H. Hill, Darling street, Montreal. Prize given by Mr. D. Williamson.

2nd, Mr. Heggie, St. Catherine St.

The following specimens prizes were given as were those above by the gentleman named, consisting of pretty table ware in silver and glass.

Special Prizes.

To Mr. Thos. Hall, Outremont, best collection of vegetables, given by Mr. R. Wilson Smith.

To Mr. Harkom, Melbourne, Que., collection of sweet peas, given by Mr. Vincent Meredith.

To Mr. Molson's gardener, Geo. Trussel, for general exhibit, given by Mr. Vincent Meredith.

The judges were Messrs. Jonathan Brown, Geo. Copeland, D. Williamson, McDuff Lamb, Rev. R. Hamilton, and Walter Wilshire.

The officers of the Society and Association are: Hon. President, W. W. Ogilvie; Hon. Vice-President, Robert Mackay; President, W. M. Ramsay; Vice President, Hon. L. J. Forget.

Directors: E. B. Greenshields, Esq., Jonathan Brown, Esq., James Morgan, Esq., Charles Meredith, Esq., R. Wilson Smith, Esq., H. Vincent Meredith, Esq., R. Prefontaine, Esq., Mayor. Secretary's address, P. O. Box 778.

ALEX. GIBB.

(1) The potatoes were more like cattle-food than human food. Ed.

THE SAN JOSE SCALE

Necessary to destroy a large number of trees to exterminate the pest.

Report of the commissioners appointed by the Ontario Government to investigate its ravages.

Toronto, Sept. 9.—Prof. Mills of Guelph ; Prof. Dearness, of London, and Mr. W. H. Bunting, of St. Catharines, the commissioners appointed by the Ontario Government to investigate the ravages of the San Jose scale and the efficacy of the means adopted for stamping it out, have made a final report.

The greatest infestation, they say, is in one corner of Niagara township, near Niagara-on-the-Lake, and in the township of Harwick, Kent county, in the neighborhood of Gould's post-office. There is limited infestation at Kingsville, and smaller ones at St. Catharines, Winona, Burlington and near Chatham. In 91 other cases trees planted within the last two years were found infested. These were all destroyed and this year's inspection failed to discover scale in any but 13 of the 91 places. The scale was found in five nurseries, but the infested stock was destroyed. The inspectors estimate it would be necessary to destroy 136,200 trees to be reasonably sure of exterminating the scale.

The commissioners are in doubt as to the possibility of checking the further spread of the scale, and eventually exterminating it by the destruction of the trees as provided by the San Jose scale Act. They advise the immediate destruction of all badly infected trees, showing incrustated trunks ; the careful treatment of all others ; the granting of large discretionary powers to the inspectors in dealing with isolated cases of infestation.

The work of treating them should be done by the government, and the owner of the trees should pay for the material and board the men and horses during the time of treatment. Owners of trees not so badly infested should be required to treat them by a prescribed method once a week at least from the time of notice till Oct. 15. Owners of trees should be paid one-quarter of their value without discount, the fruit on the tree to be regarded as part of its value. The fumigating of nursery stock should be done under official supervision, and nurserymen required to attach to every parcel of stock sold a certificate of fumigation.

THE CANADIAN APPLE CROP.

THE *Montreal Trade Bulletin* reports that, judging from advices received from various sections in the provinces of Ontario and Quebec, the apple crop is a very uneven one, especially in Ontario, where, in the western portion, some districts promise a good crop, while in others a very poor yield is looked for. In a number of orchards the fruit appeared to set well, but soon afterwards from some cause most of the young apples fell off and left a very thin sprinkling of fruit. In other orchards the caterpillar pest stripped the leaves so bare that the fruit withered, and what survives of this fruit will be small and stunted if it matures. We have received several complaints from Western Ontario regarding young orchards, which were expected to bear well this year, having proved very disappointing. The crop on the island of Montreal will be abundant in some orchards, while in others the results will be poor both in yield and quality. From present appearances, however, there will be a fairly good crop of Fameuse, trees that bore spotted fruit last year now having a hang of nice clean apples. Some trees, of course, that were attacked with the caterpillar-pest will not have full-sized fruit ; but on the whole Canada may be depended upon for a fair average crop.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

AUTUMN.

This season, with its own peculiar beauty is once more upon us, and there is no other more beautiful.

The vast array of colour all over the country at this time of the year, once seen, is a picture not easy forgotten.

As one journeys through hill and valley these lovely scenes come and go, each one, seeming to outvie the other in its attractiveness.

The woods seem to say: winter is coming ; but, before I go, I must change my green coat for one of many colours to show you what real beauty I can assume before I drop into oblivion.

AUTUMN DRESS.

Those who wish to follow the fashions of this time of year, will have, like the trees, to discard their late fashionable green dresses; for a more congenial colour, and as there never was a colour less suited to many people who wore it, nobody need grumble at the change.

The new colour is brown, of which there are many shades, so every one can pick the one she like best.

It is such a nice warm-looking colour, and brightened up with any bright colour will make a lovely costume.

Take, for instance, a dress and jacket made in a very pretty shade of nut brown. A hat of a little lighter shade, trimmed with a suitable shade of brown ribbon, with a slight sprinkling of colour, say pink, rose, or light blue.

A shirt, or blouse, waist of one of the light colours chosen for trimming the hat.

This will brighten up the whole and look well when the jacket is worn open.

A pretty belt of silk; also one of the very pretty neckties made of cream silk with lace ends; these can be made at home and will look very well made in spotted net, or mull muslin, and are made two yards long and about 12 inches wide, one yard of muslin at a cost of about 30 cents, cut in two; it must have a join in the middle.

Two friends joining could get one each without the join at the same cost.

This hemmed very narrowly on either side with a broad hem at the end, and a number of very small tucks above, will make a very pretty and inexpensive tie, but there is no doubt that a bit of lace on the ends gives a finishing touch that nothing else can.

Wash, but never rub them, in soapy water, squeeze out of clear water the last thing, and, after a shaking out, iron at once: no starch is needed.

AFTER A HOLIDAY.

No matter how carefully a house is closed, nor how great pains is taken to exclude dust and to prevent the entrance of anything from the outside, yet when the matron returns to her home after her summer outing she finds

that a coating of fine, perhaps almost imperceptible, dust has settled over everything. The house, although it was carefully cleaned before it was shut for the season, has a close and musty odour, and the first thing to be done is to get rid of this. Naturally, the housekeeper opens all the windows, both top and bottom, and allows the air to pass freely through every nook and corner; and if she is careful, she is not satisfied with doing this for less than a whole day before the family reenters the house. All the taps should be turned on, and every basin and closet in the house should be flushed with running water—indeed, the water should be allowed to run freely for some time through all pipes. Especial attention, too, ought to be given to the cellar. The lurking germs of many diseases secrete themselves in closed up places which have not had the chance of air and sun, and a careless domestic sometimes leaves vegetable matter in a cellar to decay at its leisure during the hot weather, and to produce diptheria or some other serious malady when the family come home.

APPLE JELLY.

Wipe the apples with a clean cloth, remove the stalks and blossom ends, but do not peel. Then cut them in thick slices, without removing the cores, and place in a large preserving-pan with barely sufficient water to cover. Simmer until perfectly soft, the time for which will vary according to the kind of apple used. It may take an hour, but generally thirty or forty minutes is sufficient. Strain the juice through a cheese-cloth, but do not squeeze the apples, as this would make the juice thick. When the juice is drawn boil it for twenty minutes rapidly. Then add hot sugar in the same proportion as for other jellies, and boil together ten minutes. Now test a little on a cold plate. If it will not set the jelly must be boiled again for perhaps another ten or twenty minutes. Apple jelly, unlike other kinds, requires longer boiling with the sugar to make it set, and if the fruit is over-ripe, or of an inferior kind, it will sometimes not set at all.

Siberian or wild crabs can be done in the same manner.

"To Preserve Fruit."—Now that so many people do not eat sugar or sweet things, they will be glad to know of a method of preserving fruit without sugar, so that it will keep sound for years. Fill clean bottles with fresh sound fruit, adding no moisture, and cork the bottles, so that no air may get in. Tie the corks down with strong twine, put the bottles into bags, and stand them up to the shoulder in cold water over a moderate fire. Bring the water to the boiling point, and, when it has boiled for ten minutes gently remove from the fire and let all cool.

TOMATOES AND EGGS.

Take some large round tomatoes; from the stem end scoop out some of the inside, fill the cavity with mayonnaise sauce, and lay on the top the half of a hard-boiled egg. Place on lettuce leaves to serve cold. Mayonnaise sauce is one whose chief ingredient is patience, for salad oil and vinegar must be added to yolk of egg drop by drop, beating all the while until it is as thick as custard. Season with salt, pepper, and cayenne.

"Pickling Onions."—You should use the "silver-skinned" or "pickling onions.

Of course, the quantity of pickle you prepare will depend on the quantity of onions you mean to preserve. The following will give you the proportions to be observed in making the pickle.—To every quart of vinegar add two teaspoonfuls of allspice and two teaspoonfuls of whole black pepper. Boil the spices in the vinegar, but do not use it until it becomes quite cold. The onions must be ripe and quite dry when used, and the outer skin of each should be taken off with the fingers; then carefully, with a silver or ivory knife (steel spoils the colour), remove one layer of the inner skin, so as to get a quite clear-looking bulb. Have the glass jars or bottles for the pickles all ready clean, and perfectly dry inside, and as you peel each onion put it in, and when the jars are sufficiently filled pour the cold, prepared vinegar over them, distributing a fair proportion of peppercorns and allspice to each jar or bottle. When all are filled cork closely, and tie bladders over, carefully] excluding air. Store in a

dry place. They will be fit to use in a fortnight, and, if made carefully, will keep crisp and well for six months.

RED CURRANT (1) JELLY.

Remove the currants from the stalks, put them into a pan with a tablespoonful of cold water to every pound, cook them over the fire until the currants burst, then strain through a hairsieve, or cheese-cloth, squeezing them with the hands, so that nothing remains behind except the seeds and skins. Measure the juice, and to every pint allow a pound of coarsely-powdered loaf sugar. Put sugar and juice into the pan, and place on the stove. As soon as it begins to boil, and almost before the sugar is dissolved, pour the jelly into pots, after removing the scum from the top should there be any. In this way the fruit retains its flavour, and if the jelly should not be quite stiff enough when cold, stand it in the sun till it becomes so.

RED CURRANT JELLY.

(Another Method).

Put the currants just as they are without removing the stalks, into a cheese-cloth, a handful at a time, and squeeze the juice with the hands. Boil it alone for five minutes. Add the sugar, which should have been made very hot in the oven, stir with a wooden spoon till dissolved, then boil another five minutes, when it is ready. A pound of sugar to a pint of juice should be allowed.

BLACK CURRANT JELLY.

Stew the currants in half a teacupful of water to every pound until they are soft, then draw the juice, measure it, and allow the same proportion of sugar as for red currant jelly. Boil the juice alone for twenty minutes, add the sugar, which should be quite hot, and boil another five minutes, when it may be turned into pots.

(1) Originally, "Corinths"; really small grapes from Patras, in the Gulf of Corinth. Ed.



The Poultry-Yard.

POULTRY ON THE FARM.

The average farmer is slowly, but none the less surely becoming interested in the common barnyard fowls upon his farm.

They have been long neglected, chased, ducked in tubs of cold water to break (?) them of the incubating fever, and allowed to roast wherever night overtook them and there was a rail to sit on. But now they are getting their innings. The farmers' wives (and daughters, too) are awakening to the fact that here is a pleasant and profitable "employment at home." Slowly perhaps, but equally certain it is, that the inbred mongrel fowls of all sizes and colors, are giving place to pure bred birds of the different breeds each according to his own fancy as to colour, uses, etc., for which they need them for the public demand. With better birds have come better care and feed, more comfortable quarters for their biddies, and a very material increase of profits. Upon every farm there should be a neat, frost proof hen-house, and no more expecting the hens to provide their own shelter, than we would the horses and cows.

Poultry responds as quickly to warmth and feed as any other domestic animal on the farm. Their house is their home, if given one, they will always go to it, and you always know where to find them at night, they are at "home" long before the curfew rings.

Then, too, there is far more pleasure as well as more profit in rearing thoroughbreds, they are no more subject to disease, and they always present a far more attractive appearance than the mongrel. Appearances count in fowls as well as "folks."

A business that will return the original investment and give a profit besides, to say nothing of an increase over the original number of stock birds, all in one season, is a pretty good one, is it not?

If the right management prevailed and a right start was made from the first a flock of pure bred fowls have done this. I do not claim that poultry raising is a vocation that will give a fortune to everyone, but I do know

that any intelligent energetic man or woman who will engage in poultry culture with a determination to succeed and overcome difficulties that come in their way, will always get a fair remuneration for all time, labor and feed expended.

It is not the business for the doubting mind or one who is easily discouraged, such a one should not attempt it, for it takes labor, a love for the work, and a patient stick to it-iveness to win either profit or prizes,

Even those who have a fondness for the work have periods of discouragements but having faith in ultimate success, they buckle on the armor of perseverance and the inevitable result is a good degree of success.

As a "side issue" on a farm, there is no investment of a so small capital required for hens, that will pay so large a profit.

There may be for every one a three fold profit in keeping poultry: First, a cheap supply of nutritious food for the home consumption. Eggs cost less than a cent each, and chicks less than five cents per pound when produced on the average stock and grain farm. (In what other way can a farmer get so much net profit?)

Second, the sale of poultry and eggs. There is a large and an increasing demand for strictly fresh eggs, and any poultryman who has catered to a city or summer resort trade, will corroborate the statement "that it pays to raise broilers and capons also." With easy access to a good market the sale of all superfluous cockerels, will pay the keeping of themselves and the pullets too, up to the time of the pullets laying. Third, the rearing and sale of thoroughbred birds at an honest price.

There are both men and women making this branch of poultry culture a specialty, and they realize more cash every year from it than many farmers do from large farms.

Any amount of stock birds are sold at prices ranging from ten to three dollars a piece) and more too), while setting of eggs readily command from \$1.00 to \$5.00 each from high scoring breeding hens. It is a well known fact that there is still a larger demand for breeding birds at a still lower figure, and that at even a lower price than those already mentioned above means a good

profit. The fall is a good time to start. Birds can be purchased cheaper than in the spring, as dealers and fanciers always have good young stock to sell at better prices when they have more stock than they want to carry through the winter, but I must earnestly and emphatically urge upon beginners to start in with only one breed. Select the one you fancy most. Study their peculiarities and wants, treat them kindly, feed intelligently, providing warm clean houses. Learn all you can from books and agricultural journals, subscribe to good sound Poultry Journals that teach the useful as well ornamental side of the business, visit poultry exhibitions and examine the different breeds for yourself, and know them by name which breed makes the best one for your purpose, whether for flesh or broilers and roasters, or for the supply of the egg basket. Use good common sense. Keep cool yourself and keep your birds quiet, well fed, not overfed, be vigilant and methodical, keeping your accounts strictly, letting nothing be wasted and you will be sure to succeed with both pleasure and profit.

S. J. ANDRES,
132 St. Ann St., Quebec.

THE COMMON HEN.

I desire to take up the subject of the common hen in order to interest many who often make inquiries as to the relative merit of common stock and pure breeds. In the first place, it is no easy matter to define what may be called a common hen.

Sometimes, the common hens are the best of breeds as they combine the good qualities of several strains.

The Brahma hen, which lays so well in winter, may be slow in growth and late in maturity, and when bred too close through relationship, may fail to give satisfaction. The breeder of such fowls will perhaps turn them out to run with roosters of no particular blood, and the result is a mongrel half Brahma and half anything, as the case may be, but the Brahma blood is there, and tells in the common stock, which secures the credit for excellence which belongs to the Brahma alone.

As an illustration of this, the best which I now

have in mind is to see the influence of the Houdan. If this breed is crossed on any kind of hen, the best qualities of the Houdan seem to predominate and the crest and toes (five), will crop out for successive generations, even when bred away from the Houdan for five or six years, the Houdan blood not being more than the one thirty-second part, and yet it is to the dunghill fowl that the credit of egg production is allowed, while the honors gained by the crested hens which show their remote origin to the Houdan, should properly be ascribed to that source. Again, mix a flock of fowls indiscriminately, common or pure breeds, and allow among them a Langshan cockerel, and every black hen will begin to lay early for the large kinds, which means that the Langshan blood is a great improvement; but because the fowls were not kept as pure breeds, they will be classed as common kinds, and made evidences, in favor of the claim that pure breeds may be good, but common fowls are better.

Crossing fowls imparts new life and greater vigor when they are closely bred, yet crossed fowls are not necessarily common, but they are so styled, though it is not safe to say that there is not a flock of fowls known that has not been improved to some extent by our pure breeds, which have been so widely disseminated. Does any one doubt that the Leghorn, which is one of the purest breeds, lay better than any other; or can any one answer why common fowls are not uniform in other respects as well as laying? Are any two common fowls exactly alike? They should be, if they possessed fixed qualities, but the fact is they have too many different strains of blood in them. There are the Brahma, Leghorn, Houdan, Plymouth-rock, Hamburgh, Langshan, and Cochinchina crosses, which give egg production, but prevent uniformity of plumage.

The pure breed is the best breed for all purposes, and until the common flock is seen that does not prove the excellence of the pure breeds, it will not do for the advocates of common fowls, to disparage breeds that unerringly stamp good qualities on every flock to which they are united.

S. J. ANDRES.

The Dairy.

INFLUENCE OF TEMPERATURE ON THE RIPENING OF CHEESE.

By *Emile Castel.*

(Concluded).

5. "Low temperatures are safer for the ripening process."—Here, in Wisconsin, the ripening-rooms of the ordinary style almost invariably attain in summer a temperature incompatible with good ripening, so the erection of ripening-rooms of low temperature has always invariably paid, for this means the cheese was kept at a safe temperature, and not left at the mercy of the daily variations of the weather. This low temperature can be very economically maintained by improving the isolation of the ripening-rooms and the cooling of the air, by means of cellars and sub-earth ducts, and by using ice and mechanical apparatus.

6. "Central Co-operative ripening-rooms."—It being granted that the cost of a proper ripening-room and well built stores is considerable, many private factories cannot, without inconvenience, incur the outlay necessary for their erection, in spite of the profits that would be the result of the increased value of their products. This difficulty might be easily overcome in those districts where cheesemaking is a leading trade, by the erection of central ripening-rooms, with cold storage compartments, to which the cheese of a certain number of factories might be sent, at frequent intervals, there to ripen under uniform conditions of safety. The improvement of quality, and the extra value thus secured for products ripened in this way, would doubtless secure large returns for, capital employed. Wherever the majority of factories are private property, this system recommends itself. It is another legitimate consequence of the spirit of co-operation that is the main feature of dairying in this country. This centralisation and co-operation in the most important part of cheesemaking, has the following advantages.

(a.) It would decrease in the inevitable loss-

es produced in the quality and quantity of the cheese, and consequently ensure to the patrons of the cheeseries larger profits than those repaid to-day.

(b.) The same results could be secured at a less cost than in private factories.

(c.) It would admit of the employment of experts to watch the ripening of the goods and to look after them in a way much more satisfactory than can be done, in the factories, by the cheesemaker, whose time is always sufficiently occupied with other cares.

(d.) It would facilitate the sale of the goods by giving buyers a chance to inspect personally, at less expense, large lots of uniformly ripened cheese, and this would insure a higher price for the cheese, even for the same quality. This, too, would put a stop to all cuts after delivery, and the cost of freight would equally be lowered by the sending out of large consignments. In private factories, if the cheese is kept to send off by rail, the ripening of the goods undergoes great changes, by which their value is greatly diminished.

(f.) Granting that these dépôts should have cold-storages, the cheese might be kept there in safety for sale at any opportunity that might offer. Generally speaking, the cheese in factories has to be sold when the hot weather arrives, whether prices are good or not. This often places factory proprietors at the mercy of buyers.

ICE IN CURING-ROOMS.

Good results obtained at the Tavistock cheese-factory. — An improvement in the quality of cheese.

To the Editor of FARMING:

Replying to yours of yesterday's date I would say that my experience with formalin as a preventive for mould on cheese has been very limited, having only used one bottle last year. I must say, however, that I was disappointed in the results, having been led to believe by some who advocate its use that once or twice spraying would effectively check the mould. We did not find this to be the case in our experience; the cheese would still keep moulding. However, we considered it a help at the time. Probably, as Mr.

Barr has said, we did not use enough or use it often enough. We have not used any this season. Our cheese has not shown much mould, and we have just rubbed it off in the old fashioned way.

I have noticed this season in our locality a decided improvement in curing cheese, chiefly by using ice to control the temperature. We are using it, and I am pleased to say that we are very well satisfied indeed with the results, having been able, in the very hottest time, to keep the temperature down to about 70°. I have not had any experience with sub-earth ducts. There are none being put in that I am aware of in this district. They are a good thing, I have no doubt. As far as I have been able to judge, the quality of the cheese in our district is better than last year.

A. T. BELL.

Tavistock, July 27th, 1899.

REPORT OF DANISH PERMANENT BUTTER EXHIBITIONS FOR 1898.

During 1898, 713 creameries participated in these exhibitions, 2110 tubs of butter being judged in all. The average percentage of water in the butter was 13.93 per cent, the determinations ranging from 10 to 20.05 per cent; 42 tubs, or 2 per cent of the total number, contained more than 16 per cent of water. All but 5 of the creameries exhibiting practised pasteurization, and all but 11 used commercial lactic starters.

SYSTEMS OF CHEDDAR CHEESE-MAKING.

In the account of his experiments in Cheddar cheese-making, which has lately been published in a volume by the Board of Agriculture, Mr. F. J. Lloyd, F.C.S., discusses the various systems as follows:—"We pass to the consideration of that difficult problem as to whether it would be possible to construct a system which would be able to combine the advantages of all others. To commence with, it must be clearly realised that one part of a system often depends upon some preceding part. Thus, for example, the high scald in Candy's system is necessary to contract the curd, because that curd does not contain a sufficient number of the lactic acid producing bacteria to cause the contraction of the curd by the devel-

opment of acid. Had Candy used sour whey, as does Cannon, it would be difficult under ordinary conditions to also employ such a high scald. Hence the necessity of a low scald in Cannon's system. Let me take another illustration. Owing to the fact that, when the curd is taken to the cooler in the Cannon system, it already contains a large proportion of acid, and owing to the low scald, a large proportion of whey, it is necessary that the remainder of this system should be designed to get rid of this whey as rapidly as possible lest sufficient acidity be produced, and the curd be ready to grind before it is sufficiently dry. Hence the system of wrapping it up in cloths and putting pressure upon it, and of cutting and breaking it up into fine pieces from time to time.

"But in Candy's system all the operations subsequent to the curd being placed upon the cooler are devoted merely to the development of acidity, and no account is taken of the moisture in the curd. This, in fact, has already been expelled to a sufficient extent, and any surplus remaining is certain to be expelled naturally as the acidity develops.

"Lastly, let us examine the Scottish system. The great care taken to ripen the milk has produced more acidity than would be present in the mixed milk employed in Candy's system, yet scarcely less than would be present in Cannon's system, where sour whey had been used, and there is a growing tendency on the part of Scotch makers to employ sour whey. Thus we get in the first place, as regard acidity, an approximation to Cannon's system; next, in the high scald, we have one of the characteristic features of Candy's system. What is the result? The curd is dry and comparatively acid as well. Hence the subsequent operations are directed to cooling and consolidating the curd as rapidly as possible without pressure, as in Cannon's system, yet without that long and tedious waiting for the development of acidity which is the chief drawback to Candy's system.

"It will be seen how difficult is the task of endeavouring to combine in one system all the advantage of those now existing.

"The results of these observations all tend to demonstrate the advantage of using sour whey, or some other means of adding to the milk a culture of the lactic acid bacillus. If this can be done and the evening's milk well ripened, then I am

in favour of a higher scald than that employed in Cannon's system, yet one not so high as that of Candy; a second scald of 100 degs. Fahr. would, I think, be ample. (1) We should thus obtain a curd containing ample acidity, and yet slightly drier than the Cannon curd. Instead of piling the curd in the tub, I should prefer to draw off all the whey, carry the curd to the cooler, and break up fine as in the Scotch system, so as to get rid of the whey, and open up the curd to the atmosphere, as this would promote a subsequent rapid development of acidity. The curd should then be brought together with the object of consolidating it as soon as possible, and be kept warm during this process. Acidity should now proceed with fair rapidity, and also all excess of moisture come away from the curd. And lastly, the curd, if properly manipulated, should, when ground, not be at too high a temperature to vat. This system would be applicable either in a farmhouse or in a factory. Moreover, it would be possible by such a system to so manipulate the curd as to develop in it, by the time it was ready to grind, either a higher or lower percentage of acid, according to whether a rapid or slow-ripening cheese was required.

"It will be evident from what has preceded, that no system of cheese-making can be carried on throughout the year, and on every farm, without modification. Thus, in the early part of the year, when there is always difficulty in obtaining sufficient acidity in the mixed milk, it would be necessary to lower the temperature of the scald lest the curd should get too dry before sufficient acidity had been developed in it. On the other hand, where acidity had developed too rapidly, it would be necessary to increase the temperature of the scald. The tendency of the curd to get too cool, during the early spring or autumn months, would have to be carefully guarded against by means of a stove in the dairy. In fact, every dairy should be kept at a temperature of 60 deg. to 65 deg. Fahr. during the cheese-making season, whatever the temperature may be outside."

BUTTER AND CHEESE EXPORTS.

A marked increase in the exports of butter this season may, in some measure, be due to the efforts of Secretary Wilson, of the Agricultural Department, to improve the quality. But the principal

(1) The Judges, at the Montreal competition last month, advised scalding at from 104° to 106°. Ed.

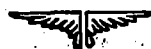
reason is probably the decrease in the available supply from Denmark and other countries in Northern Europe. During July, 20,807 packages of butter were exported, as compared with 2,587 packages in July last year. But in the corresponding month of 1897 there were 36,042 packages exported. For the week ending last Saturday 35,125 packages were exported from Montreal, more in one week than the United States exports in a month. This is due to the bad reputation United States butter obtained in Europe by reason of the large exports of oleomargarine and other imitations as "real creamery butter."

There never was a better illustration of the wisdom of the old saying that "honesty is the best policy" than in the experience of the United States in the export trade in butter and cheese. Formerly we did a large export trade in these goods—many times greater than that of Canada. Now Canada greatly exceeds the United States in the export of cheese, and sends abroad nearly as much butter, which sells for a higher price than butter from the United States. The United Kingdom imports 350,000,000 pounds of butter, (1) of which not 5% comes from the United States. This country permitted imitation cheese and imitation butter to be exported as the genuine articles. European consumers soon found that they were swindled and refused to buy either cheese or butter from this country. As a result our export trade in those articles fell off to insignificant figures.

Canada would neither permit the manufacture nor export imitation butter or cheese. Hence our loss was Canada's gain. Her exports in cheese and butter increased in proportion as those of the United States declined. This result was not because she could produce better or cheaper butter and cheese, but for the reason that European consumers could be sure of getting the real articles when purchasing cheese and butter that came from Canada.

Congress legislated to some extent on the question when it was too late. Our exports of cheese this year are only about one-half what they were last year. It looks as though more stringent legislation was needed so far as the export trade is concerned.—*Philadelphia Press*.

(1) 8½ lbs. a head. Ed.



HINTS ON BUTTER-MAKING.

The following hints on butter-making are issued by the Governors of the Munster Dairy School and Agricultural Institute:

CLANLINESS.

The first essential to good butter-making is thorough cleanliness, as dirt, either on the cow, in the dairy, or on the utensils, is sure sooner or later seriously to affect the quality of the butter.

PREPARING FOR MILKING.

Before milking moisten the cow's udder with a little clean cold water, and dry with a rough clean cloth, having previously rubbed the right flank and udder with a wisp of clean hay or straw, so as to prevent any loose hair or dirt getting into the milk.

MILKING.

Milk quickly and gently, having previously washed the hands. Dipping the fingers into the milk is a filthy practice, and results in a constant dripping of dirty liquid into the milk, causing the milk to turn sour and bad very rapidly. Milk the last drop from each cow. The udder of each cow should be stripped after the general milking is finished.

STRAINING.

Strain the milk from each cow, immediately after milking, through a few folds of clean muslin and into a cooler, which should be always kept, where possible, outside the cow-house and away from the manure heap. When all are milked set at once in tinned iron shallow pans at a depth or from 2 to 4 in. in summer, and 4 to 6 in. in winter.

SETTING.

To obtain the best results from shallow setting, the milk should be set directly it is taken from the cow.

DAIRY.

The dairy should be kept as nearly as possible at a temperature of 58 deg. Fahr., and should be dry, well ventilated, and surrounded by pure air.

SKIMMING.

Skim off the cream with a tin skimmer at the end of twelve hours, but at as the cream will not have risen in this time, the milk should be again skimmed at the end of another twelve hours, and finally after a third period of twelve hours has elapsed, or three times in thirty six hours. The

skimmer should not be perforated, and in skimming no drops should be allowed to fall back into the pan. In taking off the last layer of cream special care should be taken not to remove any skim-milk.

TREATMENT OF CREAM.

Stir the cream well as each skimming is added to the cream vessel, so as to ensure even ripening or souring. Never mix sweet with sour cream immediately before churning, as this causes some of the cream to escape with the butter-milk. All cream for churning should be mixed at least twelve hours before churning.

RIPENING CREAM.

To obtain the best results, cream should be slightly acid for churning. As acidity develops very rapidly in summer, particular care should be taken to retard it at the proper stage. If allowed to get too sour, the flavour and keeping quality of the butter will be spoiled. Keeping the cream cool by placing the cream vessel in very cold water will prevent it getting too sour.

To sour or ripen cream for churning in winter, heat it the previous evening to a temperature of 65 deg. Fahr.; then add a little sour butter-milk or skim-milk (free from any bad flavour), wrap the cream vessel up in flannel or brown paper to keep in the heat; next morning it should be sufficiently ripe.

The exact time when cream is ripe can only be determined by the taste, and a knowledge of the exact flavour indicating perfect ripeness by practice; consequently, all butter-makers should attend the lectures given in their district to receive a fuller explanation of this important part of butter-making.

To heat cream for ripening or churning, place the cream vessel into a larger vessel, containing hot water not exceeding 120 deg. Fahr.; keep the cream stirred until the required temperature is reached. Cream should be churned as soon as ever the proper degree of ripeness has been reached.

CHURNING.

Before churning, bring the cream to the proper temperature, which in summer should be from 50 deg. to 58 deg. Fahr., and in winter from 58 deg. to 62 deg. Fahr., strain the cream into the churn through coarse straining or cheese cloth until half-full. Commence churning rather slowly at first

ventilate frequently, increase the speed gradually up to from forty to forty-five revolutions per minute with barrel churn, and slow again towards the finish. Great attention should be paid to the time for stopping the churning. This should be done when the butter is noticed to be in very fine grains—when it presents the appearance of very fine meal and milk mixed. Some very cold water should then be added to reduce the temperature to 55 deg. Fahr. This hardens the grains and prevents them gathering into a lump, and also facilitates the removal of the butter-milk. Churning may again go on until the grains are about as large as turnip seed. At this stage churning should cease, as further churning will not increase the yield, but will spoil what is already made.

WASHING.

Draw off the butter-milk through a hair sieve, and pour in a sufficient amount of pure cold water to float the grains well; give the churn a few sharp turns, after which draw off the water. If the butter is for keeping, repeat this two or three times; otherwise, one, or at most two, washings will be found quite enough. Too much washing takes away the delicate flavour of the butter.

WORKING AND SALTING.

Take the butter from the churn with the "wood hands," mix the salt lightly with it; then press two or three times either on the butter-worker or on the keeler with the "wood hands." After this the butter should be laid aside in a cool place until sufficiently hard, and to allow the salt to dissolve. At the end of this time the working may be finished, when the salt should be thoroughly mixed, thus preventing streakiness, and all superfluous water removed. The dry salting of butter, as contrasted with using brine, should always be followed. The granular condition of the butter should be preserved throughout the whole process of working. This can be done by working the butter with a pressing, not a rubbing or drawing spoils the flavour, appearance, and keeping quality of the butter. Never use the hands in working butter. The heat of the hands will spoil the flavour and texture, and the insensible perspiration coming from the skin will decompose the butter.

USE OF THERMOMETER.

The regulation of the temperature by the use of the thermometer is of the greatest importance,

and, as a thermometer costs but a shilling no dairy should be without one.

PACKING.

Butter should be packed while firm into neat, whitewood packages, free from smell and flavour of any kind, and lined with the best vegetable parchment. A neat and clean package not only appeals at once to the eye, but enhances very much the value of good butter. When a firkin is not filled at once, the top layer of the butter already in it should be scraped off before adding a new lot of butter.

DAIRY UTENSILS.

Churn—if a barrel churn see that the hole for drawing off the butter-milk is at the opposite side from the opening through which the cream is placed in the churn; tinned shallow pans, "wood hands" for making up butter and for taking it from churn; a keeler, (1) thermometer, and a supply of clean muslin for straining. In large dairies a butter-worker should always be provided.

CLEANING UTENSILS.

All milk vessels and muslin should be washed as soon as possible after using by first rinsing with cold water, then washing with hot water, and finally scalding with boiling water. After this the vessels should be thoroughly dried, and put out in the air. The churn, before being used, should be first scalded with boiling water, then scrubbed with salt and rinsed with cold water.

The Farm.

ALFALFA (LUCERNE).—ITS CUTTING TIME.—ITS FEEDING VALUE.

(Press Bulletin.)

For the past five years the Utah Experiment Station has been carrying on a line of investigation to determine at just what time in its growth alfalfa should be cut for best results, composition, annual yield per acre, and feeding value, all being taken into account. In connection with this work the feeding value of such well known roughage crops as timothy hay, corn fodder and red clover has been compared with that of alfalfa.

For this experiment a field of alfalfa was divided into three equal pieces; one being regularly cut

(1) A shallow wooden tub. Ed.

when the first blooms appeared, the second when in full bloom, and the third when half the blossoms had fallen, these being denominated early, medium and late cuttings, respectively. Incidentally there was made a comparison of the first, second and third crops.

The details of this investigation are reported in Bulletin No. 61 of the Utah Station, a copy of which may be obtained by addressing the Director at Logan. Below are given the more important facts, together with the conclusions that may be legitimately drawn from the results:

1. The largest annual yield of hay per acre is obtained by the method of early cutting and the lowest by the late, the average result standing as follows: Early cutting, 100; medium, 92; and late, 85.

2. The early cut alfalfa contains the highest per cent of protein and fat, the most valuable food constituents, and the lowest per cent of crude fiber, the most indigestible portion. The former decrease constantly, while the latter increases rapidly from early bloom to the full maturity of the plant.

3. The proportionate amount of leaves to stems is greater at early bloom than at any subsequent time, and both leaves and stems contain a greater per cent of protein and a less per cent of crude fiber at this time than at any later period in the growth of the plant. The relative proportion of leaves to stems in the different cuttings is as follows: Early, 42 to 58; medium, 40 to 60; late, 33 to 67.

4. Alfalfa leaves as compared with stems are very much richer in protein, fat and nitrogen-free extract, and they contain a much smaller proportion of crude fiber. (1) The per cent of the protein and fat grows constantly less and that of the crude fiber greater from the time of early bloom to maturity. The average composition of all cuttings and crops shows the leaves to contain 150 per cent more protein than the stems, 300 per cent more fat, 35 per cent more nitrogen-free extract, and 256 per cent less crude fiber.

5. The more important nutrients, protein and fat, have the highest per cent of digestibility in the early cuttings, and it grows less and less with the age of the plant.

6. In the feeding test, the highest gains were made from the early cuttings and the lowest from

(1) Therefore, as with clover, if you make lucerne into hay, do not hustle it about, but turn it over gently. Ed.

the late, the results standing proportionately as follows: Early cutting, 100; medium, 85; and late, 75.

7. The variation in the amount of the different cuttings eaten per day was very slight, being the highest for the early cutting and the lowest for the late, but the quantity of dry matter and also of digestible matter required for a pound of gain was decidedly lowest for the early cutting and highest for the late, the relative amounts of dry matter standing as follows: Early cutting, 100; medium, 131; and late, 166.

8. The annual beef product per acre was largest from the early cuttings, not only in the general average, but in each separate season's test, and that from the late cuttings was smallest, the proportional products standing as follows: Early cutting, 100; medium, 79½; and late, 69½.

9. Taking all points of comparison into consideration, both separately and collectively, including everything that pertains to the largest yield and highest feeding value, the tests favor cutting alfalfa for cattle feeding when the first blooms appear. (1)

KILLING BARN FLIES.

Some stables are continually infested with large numbers of barn flies which constantly annoy the stock. The U. S. Department of Agriculture have completed extensive trials in the destruction of these pests and find that spraying with kerosene emulsion or sprinkling with pure kerosene will destroy the flies, larvae and eggs. Kerosene emulsion can be made up and kept ready, as it will keep in kegs a long time. With a spray pump it can also be used to keep flies and mosquitoes off the cows. By making a narrow lane and causing the cows to pass through it, first one way, then the other, both sides of the cows can be sprayed in a few minutes and relief obtained from the incessant torment. Kerosene emulsion requires to be applied frequently to keep down flies. On cattle it will give freedom from attack for more than one day, sometimes two days.—*North-West Farmer.*

(1) All of which we knew practically in England some 60 years ago. Ed.

