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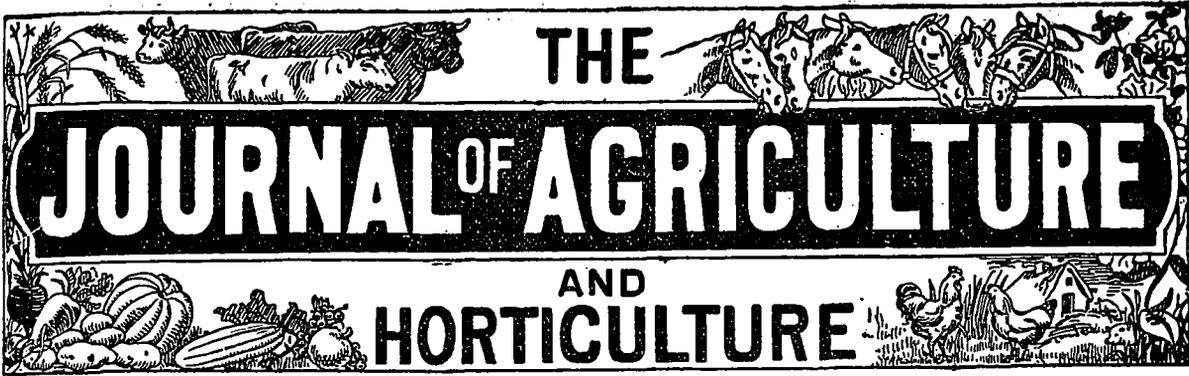
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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

VOL. 4. No. 5

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

SEPT. 1st, 1900

- THE -

INLAND REVENUE DEPARTMENT.

Journal of Agriculture and Horticulture

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

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OTTAWA, 20th June, 1900.

The British *Sale of Food and Drugs Act*, as amended last year, provides that the term "food" shall include, "any article which ordinarily enters into, or is used in the composition or preparation of human food." This amendment leaves no doubt that Baking Powder are "food" for the purposes of the Act, a point which was not made clear in the original. Since January of this year, many convictions against vendors of Alum Baking Powders have been secured, it having been shown to the satisfaction of the Magistrates, that Alum is injurious to health, and a dangerous component of human food.

The Canadian *Adulteration Act*, as amended in 1888, defines "food" as "every article used for food or drink by man or cattle, and every ingredient intended for mixing with the food or drink of man or cattle for any purpose whatsoever."

In accordance with the decisions of the British Courts, there can be no doubt that similar findings would result from prosecutions for the sale of Alum Baking Powders in Canada; and it will be obligatory upon this Department to carry such cases to court, as provided in the Act above mentioned.

Since, however, the sale of such powders has been permitted for many years, it is thought desirable to notify dealers of the intention of the Department in this matter, and to fix a time limit, after which the Act will be enforced in this regard.

The next systematic collection of Baking Powders will be made in December of the present year and proceedings will be instituted against all vendors of Baking Powders found to contain Alum.

I remain, etc.,

A. MIALL,
Com. Inland Revenue.

The Farm.

NOTES BY THE WAY.

As for the *weather* that has visited us since our last issue, it has been most depressing to the mind of any one who, whether actively occupied in the labours of the fields, or merely an onlooker, takes an interest in the well-being of the agricultural population. Our journal, or for fear of an *équivoque* we had better say our diary, which we have kept regularly for thirty-eight years, we are almost afraid to look at the entries in it for the last six weeks. In July, rain fell, more or less, usually more, on sixteen days out of the thirty-one, and since August began up to the day on which we are writing, the 19th, rainy weather has occurred on twelve days. The saddest of all things is to relate that the better the farming the worse the crops; for, whereas the late-sown grain on land in poor condition is standing up bravely, the heavy early sown oats and pease (*goudriole*, not *gaudriole*, please, Mr. Compositor) are all in a terrible state; no machine could cut them, and the *progrès* that has been made with the harvest has been done by "chopping out" the crop with scythes, with short blades, a job that, with the present scarcity of labour, has been slow, inefficient, and expensive. The hay-crop is, most of it, washed out as to quality and dark as to colour; of clover, as we mentioned in our last number, there was next to none, and, consequently, all hay must be costly.

Besides the damage done to the hay-crop by the wet after it was cut, it must not be forgotten that the mere fact of the threatening weather of the first half of July rendered it necessary to postpone mowing till pretty nearly all the first growth of the grass was dry and brown; that which was really made into hay was the latter growth of bottom-grass, very much inferior for all purposes to the rich growth of the early summer. Even we ourselves, strenuous advocates that we are for early mowing, could not blame the farmer for putting off his *hoyse* until there was something of some kind or other to carry to the barn.

Our old friend, M. LeMoyné, Principal of the Model-Farm at Compton, in the Eastern-Townships, writes us word, August 11th, that all his hay was in safe, but that more than half the hay of the neighbourhood was still out. Compton farms are extensive, most of them are largely in meadow,

and although the men are good enough farmers, they rarely begin to mow early enough, so that by the time the mower reaches its fiftieth or sixtieth acre, the hay is made before being cut down, and a very little rain on hay in that state takes most of the good that originally was in it out of it, and utterly ruins the colour.

Mr. Andres, our Poultry-editor, says, in a note of August 17th, that, at Cap à l'Aigle, where he is passing the summer, "we are having beautiful weather, cool, but fine and bright; haying is going on nicely; the crop is a light one, rather short, but is being well saved; so far, pease are looking well, and so are the other grains." Alas! he adds: "The poultry product is the worst in years."

Poor as the oat-straw is, in this district of Montreal at all events, a great deal *must* be consumed by the cattle the coming winter. Now we recommend all who are obliged to feed thus to use the following simple plan of making that, which in its present state must be highly disagreeable to all animals, sufficiently palatable if not highly nutritious: 1. Cut the straw into very short lengths with the chaff-cutter; throw over it a quantity of boiling water, in which has been dissolved half a pound of the commonest kind of molasses for every head of horned stock, turn the heap over once or twice and leave it to soak up the soup for six or eight hours before giving it to your herd. Or, 2, use the same quantity of crushed flax-seed per head, if linseed is at a reasonable price this fall, in the same way as we have directed for molasses. For ourselves, we must confess we prefer the flaxseed, but it may be difficult to get it crushed, and uncrushed three-fourths of it would be wasted, as it would pass through the animal's undigested. Linseed cannot be ground alone in the mill-stones as it would clog them and the expensive oil would be wasted; but mixed—and well mixed—with, say, three of oats to one of linseed, it might do. Wonderful what a difference in the appearance of the skin of stock even half a pound of linseed a day to each head will make in a week or two.

Hampshire-downs.—The portraits of the specimens of Mr. Cochrane's fresh importations of Hampshire-downs will strike many sheep-breeders as being the representations of animals that, to say the least, must be sheep showing indisputable signs of early maturity, and with reason, for the

lambs of Hampshire-down blood have, almost invariably, taken the first prize at the annual Exhibition of the Smithfield Club in London.

The ewes of this breed are usually put to the ram about the middle of August, having previously been brought pretty forward on a diet of rape and other forcing food, so as to bring them into season as nearly all together as can possibly be done. Lambing down about the middle of January, the lambs are usually fit to be weaned in May, and indeed often wean themselves by that time, as they are not stinted in food, but have small creep-holes in the hurdles that fence in the ewes so that the young ones can run forward into fresh food, as yet untouched by their dams. Professor Wrightson's account of the weight of his ram-lambs, given in another part of this periodical, will astonish a good many people who have never seen a seven-months-old ram-lamb of the Hampshire-down breed. So great is their progress during the first months of their life, that it is the common practice of breeders to put their ewes in lots of 40 with ram-lambs, shearlings being considered to be not so regular in service. We have bred Southdowns, and Wiltshire-downs, as well as Hampshire-downs, but were we to begin sheep-breeding again, we should unhesitatingly embark in a flock of the lass.

The crops.—We have just received the Bulletin on the state of the crops in the province of Quebec this summer, issued by the Department of Agriculture of that province. The change that took place in the weather after the late and cold spring must of necessity have greatly modified the reports made in the early summer. The general opinion seems to be, according to the notes gathered by the Director of the Ottawa Experiment-farm that the hay-crop throughout the Dominion is but very moderate. In the maritime provinces there will not be two-thirds of an average, and in Quebec it will be less than usual, except on new meadows or on old ones recently re-sown. Many farmers, in Quebec and elsewhere, keep their meadows down too long for them to give the best results. Hay, in Eastern and Western Ontario is less abundant than usual. At the Ottawa Experiment-farm, the crop is good, but not so good as usual. A great drought in Manitoba and Eastern Assiniboia caused the almost utter failure of the hay-crop; in Alberta,

on the contrary, it is good. On the whole, hay will be scarce and dear in Canada this year. (To which we may add, the finer qualities will be almost entirely wanting.)

A fine crop of spring-wheat, but a poor one of fall-wheat in Ontario; poor wheat in Manitoba, about half a crop, as well as in Assiniboia, but fair in Alberta and Saskatchewan. On the whole, the Dominion crop of wheat will be inferior.

Oats look well in the maritime provinces, and in Quebec and Ontario; in Manitoba and part of the territories the crop is fair. The straw generally very short.

Barley good in the Eastern provinces, but in Ontario the straw is like the straw of the oat, too short.

Corn is doing well. None grown in the western territories or in British Columbia.

Root-crops too late-sown; but potatoes will be good (if the rot keeps off.)

A fair crop of apples in the Eastern provinces and British Columbia; pears and plums vary a great deal; peaches in Ontario will be very plentiful.

RAIN IN THE PROVINCE OF QUEBEC.

Rain in inches.

	1895	1896	1897	1898	1899	1900	Average 40 ans
May....	2.68	2.14	5.14	3.55	2.41	1.41	3.17
June...	5.23	1.52	2.56	6.14	3.81	3.97	3.64

SEASONABLE NOTES.

Price of Wool and Sheep.

I notice that at York the top price for wool was 9s. per 14½ lb., or about 7½d. per lb., while prices generally ruled from 7s. 6d. to 8s. 6d., or slightly over 6½ d. per lb. Southdown wool and Devizes, for a fine lot of Southdown ewes and wethers, was 1s. 1½d. given by Mr. Wyman, while the general average was 11½d. per lb. Hampshire Down wool, mixed ewe and teg, has been making 10½d. quite freely. Prices for these latter wools are 1d. per lb. higher than last year, and 2d. per lb. higher than the year before, so that there is no reason for Down breeders to complain of wool. On the other hand, longwools appear to be selling badly, so that at Driffield, in Yorkshire, very little trade is passing, and prices stick at under

7d. per lb. When Down wool fetches something like double, or, to speak more correctly, 75 per cent. more money than longwools, it is time to recast calculations as to the profitable nature of certain breeds of sheep. It is here assumed that the fleeces at York and Driffield would be mostly from Leicester and Lincoln sheep, and we are therefore under the impression that such wool makes 6½d. to 7½d. per lb., while Hampshire wool makes 11d. to 11½d. The Hampshire fleece of 5 lb. would thus equal in value to a Leicester fleece of over 8 lb. When the superior value of Down mutton is considered, the balance in favour of these breeds is fairly established. The lamentation over the price of wool will not find a sympathetic echo in the breasts of Hampshire and Southdown breeders, for the value of their wool has been rising for two years.

The price of sheep is very disappointing, especially of ewes. Much has been written upon the golden prospects of sheep breeders, but for some reason not easily explainable, the early fairs are no better, and probably are lower in prices than those of last year. The reason is to be found in the extraordinary nature of the season, which is turning out dry and harsh. Although all must feel thankful for the heat and settled weather of the last two weeks, the crop does not improve, and appears stunted. It encountered cold nights and insufficient moisture in its first stage, and was then met with drought and heat not favourable to rapid growth. The last few days have turned the pastures brown and made grass scarce, and complaints are already heard of a deficiency of sheep keep. This is in itself enough to depress prices, and accounts for a certain degree of shyness on the part of sheep buyers. It is probable that in many parts of the country the state of things is still worse, as the Midlands are short of grass, and crop prospects are not exhilarating.

ENG. AG. GAZETTE.

AMERICAN INFLUENCES UPON ENGLISH FARMS.

There is no doubt as to the practical character of American books and publications on agriculture, of their judicious avoidance of any excess of technical terms. Their willingness to go into details, with a general habit of speaking out so that persons of ordinary intelligence are always

able to follow the teacher; and in this all readers of this journal will recognize that the worthy Editor is not one whit behind his American confrères.

England has admired and may be benefited by noticing the way in which the American agricultural experiment stations invariably keep themselves in touch with the immediate needs of the agriculturists of the district, but still it is only right to admit that there are some respects in which the American influence has not been to England's advantage. Probably one of the worst services the United States has ever done England is by the caprice with which they take up, in turn, each one of the breeds of farms stock, and having set breeders all agog for American offers, "chuck it all up," leaving the folks that have been catering for them with an unsaleable lot of things, bred to suit an especial fancy. The race after Bates short-horn cattle, the preference for red ones, the Hereford boom, Aberdeen Angus boom; the demand for live stock registers (whether there is any facts to put in or not), all of these have had influences which cannot be thought to be benefits. The influence on short-horns was especially hurtful, for the result was that the English herds of one of the most generally serviceable breeds of cattle became full of specimens that no one cared to buy. They excited no competition for the herd, butcher, or dairy.

The Hereford and the polled breeds did not suffer to the same extent; but there must have been many disappointments to the breeders of these after making pain-staking and expensive preparations for customers who never came. With swine, the effect on the Berkshires has been the same as on the short-horns.

The useful, partly coloured rough-coated swine, have been transformed, to suit an American whim, into a fine skinned, black carcased animal with six tiny white markings, viz., the snout, on the tail, and on the four feet. They have been made as pretty as a child's rocking horse and with as much "go" about them.

The English curers of fine bacon and ham say, "What has become of the lean meat? of the flesh that was not too oily to take the salt?" There is no answer except to challenge admiration for the exact description of the "latest thing in petitoes."

Now in regard to live stock registers—of which the larger half have sprung into existence in

response to the American demand—the influence of the States buyer has led (the fault being with the English breeder) to an enormous amount of what may be termed “jury-building.” The forefathers of the present breeders in England, gave the latter more than a century’s start in the art of producing animal life for pattern.

England can breed horses, cattle, sheep, and pigs to shape with such certainty as no other can: simply because her farmers have dwelt there for generations, with no dread of a foreign invader, and little of any home disturbance, and have surveyed their quadruped dependents with all the greater regularity and care, because they did not trouble their heads at all with books and very little with politics.

England’s farm stock is what it is—the very finest in the world—because the farmers have been plodding, reticent and undemonstrative, but shrewdly observant men. They have known the antecedents of every beast on their farms, to what type its parentages would cause its offspring to approximate, and its constitutional peculiarities. Out of this half traditional knowledge, the first of what are now called “pedigree breeds” of stock were formed. Where the Americans adopted the principle, they have done it without the aid of settled families, without hereditary dependents, by help of which the formation of the chief English breeds became possible. The new registers, made to their order, want the chief factors that gave virtue to the earlier ones, viz., long connection between men and animals and a genuine love of the former to the latter which have never existed anywhere else, except it be between the Arab and his horse.

Many of the minor registers, got up to suit the American cry for them, are neither complete or regular. They have few supporters and those lend only intermittent assistance. To put registers of this class into the same rank as those of the leading breed societies is not at all a wise thing to do from any point of view, in fact it is something worse than unwise.

W. R. GILBERT.

FEEDING GREEN SORGHUM.

Because they have seen cattle eat young first growth and second growth sorghum and kafir corn, and in some instances pretty nearly subsist

on them without apparent harm, many persons are ready to maintain that these green growth are never dangerous. Yet, under circumstances and for reasons which no one is yet able to explain, other persons in numerous instances find to their sorrow that the plants are almost immediately fatal. This suggests that no one is justified in taking any chances by permitting cattle to have access to such “greens.” Among others, Secretary Coburn, of the Kansas Board of Agriculture, cites three examples of their fatal effects occurring but a few years ago. Thomas Feakes, of Lincoln County, turned his cows into an unused corral where a few scattering bunches of kafir corn were growing. In less than 30 minutes seven of the cows that had nipped the growing blades, were dead; several others were made very sick, but recovered.

John Kaser, of Covert, Osborne County, was driving a lot of young cattle through a pasture where there were stools of green kafir corn and sorghum. Within 30 minutes ten out of eleven heifers that had eaten of these sprouts were dead. C. F. Wadsworth, of the same county, at about the same time, lost six steers in the same way.

Losses such as these are of annual occurrence, and a list of them would be very long. The fact that results are not always fatal should not furnish an excuse for taking risks so likely to prove extremely expensive. Certain safety is only assured by absolutely preventing cattle from getting within reach of the plants named, even for the briefest intervals.—*Kansas Board of Trade.*

THE DANGER LIMIT IN THE USE OF SORGHUM.

A great many letters have come to the Experiment Station asking for advice as to pasturing sorghum. The publicity given to the injurious effects of sorghum through the investigations carried on by this Station to ascertain the cause has moved people, not heretofore acquainted with this occasionally exhibited peculiarity of the plant, to become suspicious of it. While no further positive information has been obtained on the subject, there yet remains a word or two that may be profitably spoken.

The records of this Station do not show any cases of sudden death from sorghum occurring in the eastern portion of Nebraska, with the except-

ion of a few which occurred on second growth sorghum. There is also reason to believe that plants producing this disastrous effect have not made a healthy growth, and are yellow and wilted, a condition easily detected by the farmer. It would therefore seem reasonable to conclude that no danger is to be encountered in pasturing sorghum of healthy growth in eastern Nebraska.

Again it would appear that no danger is incurred if the sorghum is fed after cutting and allowing to lie for some time. A sample of sorghum was recently received by the Station with a letter accompanying it stating that the plants were parts of a very few partially eaten by a cow which was killed by them in two minutes. The sample was fed to a cow on the Station farm without injuring her in the least. This together with the fact that no poison has been detected in samples sent to the Station for analysis would indicate that any toxic substances which the plants might have contained have become dissipated after cutting. The length of the time required for this is not known, but it is certainly accomplished in a few days.

As sorghum is undoubtedly the best annual midsummer forage crop for this region it is important that its limitations should be well defined. The use of healthy sorghum for pasturage with the ordinary precautions in eastern Nebraska, and of sorghum hay, may be considered safe.

T. L. LYON.

Nebraska Experiment Station.

HANDLING MANURE.

Ed. Hoard's Dairyman.—I have been milking about 100 cows for the past ten years, and do not feel quite satisfied with results received from manure. As we feed cotton seed meal, you know it must be good. Would you kindly give me some advice as how to best care for it in this open climate, to produce best results. Is cement floor essential if one has tight floor and drop, with good absorbent as cotton seed hulls, sawdust, etc., to take up the liquid? Please explain, if it is necessary to have a building or shed to keep it in; if so, how should it be constructed, and ought it to have a cement floor?

J. S. D.

Atlanta, Ga.

The best method of handling manure depends somewhat on locality and condition.

In the north, good authorities advocate hauling

the manure directly from the barn to the field and spreading immediately, claiming less loss of fertilizing material, but of course the practicability of such methods depends on local conditions.

It would seem that in the south where weeds are an ever presence, the returning the manure directly to the land would only increase the trouble from this source, and that composting the manure would give the best results. As our correspondent uses large quantities of absorbents, he will have a material resembling horse manure, and on this point, Prof. Roberts advises as follows:

Horse manure may be fully exposed for six or eight months if piled two to four feet deep, with edges nearly perpendicular, if properly cared for. It may deteriorate as fast or faster during the summer in a covered shed, if not cared for as when fully exposed. Horse manure—by which is understood the solid and liquid droppings, mixed with more or less straw or other similar absorbents—is quite porous, contains considerable quantities of potential nitrogen, and hence heats and ferments very rapidly. In doing this, a large portion of the nitrogenous compounds may be driven off, if no pains are taken to arrest them.

One of the following methods, or better, all three of them, may be used to arrest the escape of these compounds, while the manure is being broken down, and its constituents made more readily available. If the manure is solidified or tramped, too rapid fermentation may in part be arrested. Adding water to the pile also serves to keep the mass cool, and to drive out the air, in the absence of which, fermentation goes on slowly. And, thirdly, absorbents, such as muck, soil earth or gypsum, may be used to absorb the escaping gases. Since horse manure is too dry for best results, the urine should all be added, and usually in addition water should be added to the heap, until it begins to ooze out a little around the small trenches at the base of the pile. Whatever oozes out, and there should be some, should be thrown on top of the pile with a scoop shovel. As the pile is formed some earth should be sprinkled through it, and water added as the judgment dictates. Finally, earth may be used to the depth of two or three inches to arrest and absorb the gases. If fermentation tends to go on too rapidly, add a quart of salt for each load and put on more water.

Once during the time it might be well to over-haul the pile, in order to place the outer edges of

it in the middle, that the decomposition may be fairly equal and complete in all parts. It should have been said in the beginning that the manure should be piled on ground that has been tramped, or has been made fairly impervious to the passage of water through it, by covering the area to be occupied by the pile with pounded, puddled clay. Our outdoor rotting pit is made basin fashion, roughly grouted and plastered with cement mortar. At the edge and lowest point, a cistern holding three or four barrels is constructed to relieve the seepage. Here it can be easily dipped out with a pail and returned to the pile. A common oil barrel might well serve the purpose in lieu of the miniature cistern.

Experiments conducted at Cornell University similar to the method described above showed that six months fermentation in the open destroyed the germinative power of all weed seeds near the middle of the pile where a sample of the manure was buried in a sack of wire netting. (1) A large kettleful of earth was heated for nearly a day in order to kill the weed seeds in it. The sample of manure was mixed with the earth, put in a warm place and kept moist. No weed seeds appeared. Of course, this is but one investigation, but it seems to point to the feasibility of killing the germinating power of weed seeds in the centre of the pile; it is probable that they were not all killed on the outer edges.

DESTRUCTION OF THISTLES IN PERMANENT PASTURE.

Among the various suggestions on the above subject none seems to me more practical than advice to "J. C. B." to cut them with the mowing machine; the only exception I take to it is that I consider the time named a little too early, and others I see are also of the same opinion. Mr. SHELDON recommends mowing them twice, first in June, then in September. But why need we mow them twice if once will do? Especially now that labour is scarce. Mr. PICKERING thinks that mowing them will not eradicate them upon pastures. Upon this question I must ask, how have they been mown? On July 12th I cut some with the mowing machine, the knife being set the same as I cut my grass. On the next day I had some cut with the scythe. These latter have grown con-

siderably since being cut, while the others have grown scarcely any. The cause is not far to seek, as those done with the scythe were cut at least two inches higher than those with the machine. Now, I find that when men are cutting thistles with the scythe they do not bend their backs, as they would do if they were cutting grass. And this, I think, will account for better results when the pasture is turned into a meadow. I cannot quite agree that this weed is not propagated by seed on our pastures; or how it is that they are now to be found upon some of the prairies of America where they did not formerly grow? As regards pulling them, in some places this would be an endless job, and would hardly recommend itself to a farmer who says to his men, "Come"—and they are still a number of them left. They may not take a man's share of the work; but if they only superintend and direct, I do not think that they would find much amusement in pulling thistles. But, I ask are thistles of no value? I maintain that everything which grows is of use. And I find that after they are cut and withered my cattle will eat them, particularly if keep is scarce, and they also eat them in the hay. And as they are deep rooted, they may, in some measure, improve a poor pasture. Still, I would rather be without them.

J. R. WOODHOUSE.

Eng. Ag. Gazette.

HARVEST IN ENGLAND REGULARLY BEGUN.

The beginning of harvest on a large scale may be dated from August 1st, when the cutting of wheat and spring oats become common in many parts of the Southern, Home, and Eastern countries. Winter oats, of course, were cut earlier in those parts of the country. The reports that we have published at present are quite as good on the whole as there was any reason to expect. There never was any reason to anticipate a great wheat crop, and it will be noticed that very few reports put it above average, while a good many reckon it below. Barley has given more reason for surprise, as its prospects at one time seemed worse than those of wheat or oats, whereas now it seems to have taken the top place among the white-straw crops. The converse is the case with oats, once the most hopeful, but now the least satisfactory, of the group. The pulse crops appear

(1) What we have contented for all along. Ed.

to have withstood the drought better than might have been expected, and hay grew into more bulk at the last than seemed likely at one time, though most of it stood too long for good quality. Potatoes appear to be well up to average on the whole, and mangels the same, while reports on turnips are various, most of them being unfavourable. As yet we have not received nearly all our harvest returns; but nearly all the country has been more or less represented and the general tenor of the reports may probably be fairly estimated from those which have been printed. The weather has become less settled, and most parts of the country have been refreshed more or less by storms of rain during the last fortnight, and particularly since Friday week. But a steady rain of some hours' duration would have been immensely beneficial before harvesting became common in the southern half of England. Even now an occasional shower is highly desirable.—*Eng. Ag. Gazette.*

HOW TO MAKE PERMANENT PASTURE.

The *Rural New Yorker* presents the following opinions from experts as to the formation of permanent pasture in reply to the question:

"What is the best combination of seeds for a permanent pasture? Is it not best to sow the seed alone, rather than with some grain crop? Should we sow in fall or in spring?"

There is not, on the whole, very much artificial pasture in this state. Certainly if such a pasture is to be made I should prefer to sow the grass seed either alone or in a crop of standing corn. If the land to be made into pasture should be susceptible of cultivation, I should regard as the very best way to put it into corn for the silo, and then at the time of the last cultivation, to sow the grass seeds. The culture should, of course, be level. Seeding in corn for meadows, is the almost universal method in this part of the state, and it gives better results than any other that I have seen. The corn shades without crowding, and is removed in season to give the grass plenty of time to thicken and harden before winter. The seed is generally sown here about the last of July. It should be sown before the corn is so tall that the hand cannot be swung over it.

A little more seed than usual should be used. Sown on the freshly-cultivated soil, if there is the usual dog-day weather, with occasional showers,

the seed starts without covering. I have seen it up within 48 hours after sowing. If the pasture is not sufficiently cleared to allow plowing, then I should bring the soil into the best possible conditions of pulverization, and sow at the time above indicated, alone. For pasture I should use about the following mixture: Kentucky blue grass, 12 pounds; orchard grass, 8 pounds; tall oat grass, 5 pounds; meadow fescue, 6 pounds; red-top, 4 pounds. If sown alone, perhaps Italian rye grass (1), 4 pounds; white clover, 6 pounds. After a few years I should expect the sod to consist chiefly of the Kentucky blue grass, the meadow fescue and the white clover. I might vary the proportions of the different grasses to suit different moisture conditions, but the mixture as I have designated is selected with reference to what would be called good, fairly retentive grass land. For lighter and drier soils some of the smaller fescues, such as the red fescue, hard fescue and sheep's fescue, might be used, with less of orchard grass, and tall oat grass. For moist soils I should be inclined to add, perhaps, a little tall fescue and a little fowl meadow.

WM. P. BROOKS.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

IN THE COUNTRY.

Wild fruit has been and is still to be bought in large quantities, so much so that everybody who care for the health of themselves or children can get plenty at a fair price.

When one sees such quantities one is apt to deplore the state of one's digestive organs, which if tried beyond a certain point are certain to rebel and cause trouble. Particularly is this the case with children who never know when to stop eating, and when they plead for just a few more it is just as well sometimes to let them learn by experience what over stuffing will cost them. Ripe fruit taken in moderation hurts nobody.

It is to be deplored that all fruit which come from a distance has to be gathered unripe to allow it to travel, and we have no reason to grumble, for those fruits which were once a luxury, are now to be bought at a price to suit the pockets of everyone.

(1) Will not stand this climate. Ed. J of Ag.

It is during the long winter, when we learn to appreciate the summer dainties, as those only know who preserve these wild fruits for winter use.

I doubt very much indeed if the person is not yet to be found who would refuse wild strawberry jam in mid-winter.

JAM MAKING.

Since the introduction of the nice, clean agate ware pots, the making of jam is very little trouble, and our dry climate is most favourable to its keeping.

The jam once made is secure till wanted if kept in a moderately, warm, dry place.

When making if scales are not handy, four cups of fruit to three of sugar, will be found to answer well. Care should be taken not to fill the pot too full, so as to avoid boiling over and thus make extra work; boil slowly and take off the scum as it rises to the top: this will secure a clear jam.

Test a little in a saucer now and then, and when finished have the jars or bottles handy, warm and dry; the jam can go into them at once. Cut out white paper the size of the mouth of the jar, dip it in brandy or the white of an egg, lay it on the jam when settled down and a little cool.

Tie down with larger pieces of paper, or dip the same in white of egg and cover the jar with it thus excluding the air and giving a double security to its well keeping.

GINGERBREAD LOAF.

Put $1\frac{1}{2}$ lb. of treacle and $\frac{1}{2}$ lb. of pure home-made beef dripping into a bowl, and set the latter in front of the fire until the contents are sufficiently melted to mix well together; then stir in 4 tablespoonfuls of sugar, a small teaspoonful of salt, 1 oz. of ground ginger, half a nutmeg, finely grated, and a teaspoonful of carbonate of soda dissolved in a teacupful of lukewarm milk, and mix thoroughly, after which add sufficient fine flour—a small quantity at a time—to form the whole into a *very* stiff paste, being careful to keep up a brisk beating or stirring all the time in order to render the cake light and spongy. Bake in a rather slow oven until thoroughly cooked, then turn out carefully and cool on a sieve.

RICE CAKE.

Mix together in a bowl 1 lb. each of fine flour and ground rice with a teaspoonful of salt, and

rub into these ingredients until quite smooth $\frac{1}{2}$ lb. of perfectly fresh butter; then add two dessert-spoonfuls of baking powder, $\frac{1}{2}$ lb. of fine white sugar, 4 oz. of mixed candied peel very finely chopped, and 4 oz. of crystallised cherries cut up into dice, after which moisten the whole with three or four large, well-beaten fresh eggs, and a little milk if requisite; mix thoroughly, and bake in a moderate oven.

BOILED ICING.

One cupful of granulated sugar, half a cupful of water. Boil until a little taken between the thumb and forefinger will "string" out an inch. Have ready in a bowl the white of one egg, well beaten. Pour on it a little of the syrup just before it reaches the desired point in cooking, and beat well. Then add the rest of the syrup and beat until smooth and it begins to ticken. Flavor with vanilla and spread on the cake. Be sure not to cook the sugar too long, or the icing will crack, being too hard. If not cooked quite enough, you can get it hard enough by beating hard and long.

When making cakes, be careful to dry and sift the flour, and to thoroughly mix the baking powder with it before adding any moisture. Break each egg separately, and smell each before mixing, for one bad or musty egg will spoil the whole cake. When beating eggs, be sure that the whisk is perfectly clean; any grease on it will prevent the eggs from frothing.

After greasing cake tins, sprinkle with flour, shaking off all that will come.

When you have done with a cooking utensil don't leave it to dry; fill it with water and set it on the back part of the range until you are ready to wash it, it will be so much easier to cleanse. If it is greasy wipe it out first with soft paper, which will absorb the grease; then when you fill it with water add a lump of washing soda, which ought to be kept in a closely-covered tin box under the sink.

TASTY DISHES.

Spiced fish is a novelty to many. In one tablespoonful of vinegar simmer for five minutes six

peppercorns, two cloves. Strain and add a half-pint of egg sauce, should there be any on hand from the preceding fish dinner this dish is supposed to be built upon. Should the sauce be lacking, use instead the same quantity of fish broth, thickened with a teaspoonful of flour; and one cupful strained, cooked tomatoes and bring to the boiling point, then stir in one pint of flaked, cold cooked fresh fish and simmer for 15 minutes; serve.

Fish may be curried. Take a pound of fish; one apple or a stick of rhubarb; two ounces of fat or butter, two onions, a pint of water or fish liquor, a tablespoonful of flour, salt and pepper, a teaspoonful of lemon juice or vinegar. Cut up the onion, apple, or rhubarb into small pieces, and put them into a saucepan with the butter or fat, and let them fry till they are brown. Then stir the curry powder and flour to them. Add the salt and pepper, and stir in gradually one pint of water or fish liquor. Let this all boil up and simmer gently for half an hour. Just at the last stir in the lemon juice or vinegar. Then strain it, returning it to the saucepan with one pound of fish cut up into nice pieces to get hot through. If you have no cold fish, but cook some on purpose to curry, boil it in one pint of water, and use this water to make the curry of. Serve the curry in a border of boiled rice.

To prepare lettuce salad freshen a head of lettuce, tear the leaves apart with the fingers, but do not cut them, as that impairs their crispness and flavour. Arrange the salad in a dish, and pour over it a dressing made by grating half an onion, (1) mixing it with a teaspoonful of lemon-juice, a saltspoonful each of white pepper and mustard (dry); then gradually stir into these ingredients two tablespoonfuls of olive oil and two of vinegar. (2)

To freshen green vegetables cut off the end of the stalk, and soak three or four hours in water to which a little salt has been added.

Most vegetables are better cooked fast, excepting beans, potatoes, cauliflowers, and others which

(1) We doubt the use of onions in salads. Ed. J. of Ag.

(2) Cos lettuce, properly blanched by tying up, should never be washed. Ed. J. of Ag.

contain starch. Cabbage should be boiled rapidly in plenty of water, so should onions, beets and turnips.

Never scrape burnt saucepans if it can be avoided. Fill them with cold water, changing it occasionally and removing the softened parts. Enamelled saucepans may be rubbed with brick to remove the stain if it will not yield to the other treatment.

A little vinegar put into a frying pan, and heated over the fire, removes the odor of fish or onions from the utensil. Soda may be used instead of vinegar.

If a small teaspoonful of fine salt be added to a quart of milk it will be preserved sweet and pure for several days.

The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

GERMINATION.

(Continued).

All plants, however, do not depend, entirely, upon the germ contained within the seed for a further perpetuation of their kind, but offspring are developed by other means, as for instance the bulbiferous species, of which the Tiger Lily is a familiar example. On such plants small conical, or rounded bodies called Bulblets are formed in the axils of the leaves, and each of these develops into a perfect bulb similar to its parent. Other bulbous rooted plants multiply by bulblets forming at the base of the bulb, each containing a germ of a perfect plant, and some plants are increased by stolons or branches which naturally curve and fall to the ground, and, when favoured by shade and moisture, take root and form a plant entirely independent of its parent.

The term "germ" has also been used to signify the latent, rudimentary, invisible particles which are dispersed throughout the plant for the purpose of giving origin to buds, and these buds produce the germens or ovaries from which the new plant is born.

It is of much consequence to the production of a vigorous seedling that the seed be quite ripe; in

this state it contains more starch or flour than an unripe seed, and this starch, being turned into mucilage by the process of vegetation, becomes a soluble food for the embryonic plant. Ripe seeds will be found to keep longest and to survive accidents or bad treatment better than partially ripe ones, but, from having their food in a state more easily soluble, spring more quickly and vigorously than when unripe. On the quantity of the food, thus furnished, depends the vigour with which the young plant will shoot, hence the best means to be used to furnish it in sufficient quantity and reduce it into an assimilable form, should be the study of cultivator to enable him to assist the process of germination.

Seeds which contain much oil perish sooner than those which are free from oil, and the seeds of the coffee tree and some others will not germinate after being kept only a few days beyond the time of ripening and gathering. On the other hand, many seeds possess an extraordinary degree of longevity : this has been proved by weeds growing in enclosed gardens, which, for a long series of years, have been carefully tilled. Some very interesting experiments have been made to ascertain the length of time certain seeds retain their vitality and germinating power ; in one case, a human skeleton was found, and a portion of the contents of the stomach containing a mass of small seeds which neither the digestion of the person, nor the lapse of twenty centuries had sufficed to destroyed. Many of these seeds were subjected to various experiments to prove whether they had lost their vital principle, and Dr Lindley succeeded in raising fruit from some of them which proved to be the common raspberry. Most people have heard, or read, of the mummy wheat which was taken out of a mummy case which had been entombed for thousands of years, and yet grew when exposed to the necessary conditions (1).

The conditions requisite to energetic germination are, the ripeness of the seed, the exclusion of light, a certain degree of moisture, a free supply of oxygen, a certain degree of heat, the presence of some ammonia, and suitable circumstances of soil and season.

The ripeness, alluded to, is not that over-ripeness which renders the seed dry and hard, but the completed elaboration of the principles neces-

sary to the process of reproduction ; the former is essential to preserve the germinating power of the seed for a long period, but the latter is sufficient for its healthy germination, therefore fresh seed is to be preferred, because it will develop more quickly.

With regard to the exclusion of light : it may not be absolutely necessary to germination, because some seed will germinate in the full sunlight, but the growth will be weak, and the absence of light is indispensable to such a vigorous start as will ensure a well developed seedling plant. The covering of seed with soil, not only secures the requisite degree of moisture, but excludes the light and supplies the mechanical and chemical conditions required for the development of the radicle and plumule, and reducing the food for their nourishment contained in the seed, to its proper absorbable elements.

M. Decandolle, one of the most noted Swiss botanists of the beginning of the present century, denies that the exclusion of the light is a necessary condition of germination, but the position he took has been proved to be a false one, both by experiment and observation of natural phenomena, for the fact that the plants absorb carbonic acid, and exhale oxygen during the day, and absorb oxygen, and exhale carbonic acid during the night, distinctly suggests that germination is a *night* process demanding the exclusion of light. The effect of light upon a seed seems to be to reduce its oxygen, to fix, or harden the carbon of its starch and saccharine matter, and so to parch the whole as to render it much less easily reducible into mucilage. This will teach that it is well to keep all seeds in darkness until sown.

Seed kept dry will endure a considerably wide range of temperature, a dry seed exposed to a great heat would of course not germinate, and will bear intense cold without injury, but a seed which has imbibed moisture, whether it has begun to germinate or not, would be destroyed by freezing. Water is essential to the commencement and progress of germination, not only to convert the sugar and starch into gum but to maintain the conditions requisite to continued development and increase. Rain, therefore, is always acceptable to the farmer and gardener soon after the seed is sown, otherwise water must be artificially applied, which however should always be avoided as much as possible ; making the soil pretty firm about seed or newly trans-

(1) Has not the origin of the so-called "Mummy" wheat been subject to a good deal of suspicion? ED. J. OF AG.

planted trees or plants, so as to prevent rapid evaporation, is a better expedient, in very dry weather, than artificial watering, except in the case of due necessity. It is not advisable to press the earth too firmly upon seeds because their germination depends upon the free circulation of oxygen. If moisture be too excessive, seeds will rot, therefore it is useless to sow on undrained land, and it is better to wait, than to plant, during a continuance of very wet, cold weather.

A free supply of oxygen from abundant circulation of atmospheric air is essential to germination.

The oxygen combines with the excess of carbon present in the seed and carries it off in a gaseous form, so as to leave the remaining substance in the proper chemical condition to serve as food to the developing plant, and at the same time the combustion of the carbon generates a certain proportion of heat which constitutes another important requisite of germination. The disengagement of the oxygen sets free the caloric, and hence seeds, moistened, and thrown into a heap, germinate, and are found to generate a great heat.

But irrespective of this, a certain degree of external heat is indispensable, no seed was ever known to germinate at the freezing point of water, for in that case it is entirely destitute of moisture, and yet seeds, before germination, are uninjured by the severest cold. Seeds in a perfectly dry state would not be hurt by a temperature of 167°, but if placed in the soil would be killed by two or three days exposure to 122° Fahrenheit.

The heat at which seeds germinate varies according to the habits of the plants or their native zone; the seeds of the tropics will not germinate in a lower temperature than that of our garden hot beds and green houses, while the seeds of temperate or cold climate will germinate at a temperature a few degrees only above freezing; the latter should be kept in the coolest part of the seed room, and garden seeds should be classified into three classes, hardy, half-hardy, and tender.

Ammonia is a requisite in germination, acting presumably, as a chemical force within, and a stimulating force without; and if not supplied as a principle of manure in the soil, it finds access to seeds in a state of solution in rain water, thus rain or liquid manure acts more favourably than waterings from a pond or stream.

Any one may observe how seeds, sown in the

open ground, spring up after a shower, and this is not occasioned by heat alone, as the same effect can be noticed when hot bed sashes are removed to expose the beds to the influence of the atmosphere or of the gentle rain. This may be thus accounted for: a greater quantity of sugar is present in the rain water and the air, which descending with the rain into the ground excites the seed to increased activity; and here we notice why the soil, for seed, should be well prepared by being broken into small particles.

So much for the chemical phenomena of germination, simply considered, but there are yet others which claim our notice. The nitrogenous principle in seed although small is highly important; in the earliest stages of excitement it passes into a substance termed "diastase" which turns the starch into glucose or grape sugar, and, during fermentation, 1 part of diastase is sufficient for the conversion of 2000 parts of starch; this accounts for the sweetness in seeds in a certain stage of the germinating process; the fermentation part of which is the saccharine one; the seeds at this time are particularly palatable to many animals and it is then that the greatest danger is to be apprehended from the depredations of birds, mice, and insects, and extra vigilance required to prevent them as much as possible.

(To be continued).

THE PUBLIC SQUARES OF THE CITY OF QUEBEC.

Few places have awoke to the march of improvement during the last few years than has the "Old Rock City"; those who traveled over its roughly paved and unpaved narrow streets, or were taken at a snail's gallop in slow going horse cars from one part of the City to another in past time, will realize how great an improvement, as to locomotion, has been effected by the laying of concrete road ways and the use of electricity cars.

There are no cities where the change has been more marked, or more advantageous, and not only is the betterment noticeable in these respects, but great attention has been paid to the beautifying of the place with regard to its public squares; pieces of land which were lying waste, or covered with all sort of vile rubbish have been converted by the gardener's skill, into beautiful

parterres and well kept lawns, artistically covered with elegant beds of flowers and shrubs.

The grounds around the Parliament buildings are remarkable for the beauty and appropriateness of the design of the beds of flowers and rich foliage plants which occupy them, and for the correctness with which contrast or harmony of colour has been observed, while the keeping as to neatness and order is admirable. The ancient site of the old Parliament house on Mountain hill affords an unusual opportunity for a display of the gardeners art which has been duly taken advantage of and the space laid down into grass and beds of elegant flowers and brilliant foliage plants, forming when viewed from the top of the steps leading to the Post Office, a beautiful foreground to the river and distant Laurentides to the West, and the picturesque Island of Orleans in the stream directly opposite. Great credit is due to the Department of Public Works for the improvements and to M. Chollet, the Provincial government gardener, as to the able manner in which the work has been carried out under his management, both as to the superior quality of growth of the plants used and their arrangement to produce so fine an artistic effect.

Neither have the City authorities been behind in adding to the attractions of the place, but have been alike mindful of the advantage of floral decoration and have contributed their share by laying out a beautiful park in the lower part of the suburbs, on the banks of the St. Charles river which is properly called Victoria Park but popularly Parent Park in honor of the Hon. M. Parent at whose suggestion it was formed and who has been indefatigable in his exertions for the public welfare. What was a few years ago a fever and ague breeding morass, is now a lovely promenade which is enjoyed by the people as a place of health preserving recreation.

Here are large greenhouses where are raised thousands of plants for the embellishment of this and other parts of the City. Quebec may boast of her gardens and has taken a step in the right direction in this as well as other improvements.

GEO. MOORE.



PARIS EXHIBITION.

Another Canadian victory.

It is gratifying to notice, by the reports from France, that it is not only in war that our Canadians have distinguished themselves but in the avocations of Peace, and to find that our farmers and pomologists have been awarded the first premiums for their grand display of agricultural and horticultural products. The system of cold storage has rendered this possible and fully exemplifies its advantage in a commercial point of view; it has enabled us to show to the public, in another hemisphere, what our climate is capable of in the way of producing some fruits, apples for instance, the beauty of which, as regards colour, is unsurpassed by any raised in the old world, while the qualities for dessert or culinary purposes are of equal, and in many cases of superior merit. It speaks well too for the enterprise of the managers of our exhibit that ours is the only cold storage on the ground.

It may be well to put on record the following report from the *Montreal Witness* as it should encourage our producers of the necessaries and luxuries of life, to increased efforts to obtain them of the best quality, to carefully select, pack, and ship them properly, remembering that if we are to retain the prestige we have so well achieved, we must do all we can to place them in the market as near perfection as possible; to attempt to foist a poor or even mediocre article upon the better classes of consumers on the other side of the Atlantic is a profitless task.

GEO MOORE

OUR FOOD PRODUCTS.

THE CANADIAN EXHIBIT AT THE PARIS EXHIBITION.

The British Colonial Building at the Paris Exhibition is well placed, being on its corner of the main road through the Trocadero to the Eiffel Tower. It is a pretty building, in spite of its somewhat severe style of architecture, which has been more than overcome by the decorations and the arrangement of exhibits. Beside the main entrance, behind plate glass, is a great bank of rosy apples, with a layer of Golden Russets. Most people think they are imitation till they have tried a sample. These are in a cold storage case,

the inside temperature being 37 to 40 degrees. There is also another cold storage case, containing apples, cheese, butter and eggs, all keeping perfectly. Around this case in a hollow brass hand-rail, through which brine is circulated at a temperature of ten degrees below freezing point, so that it is quite startling to touch it. In the basement is a cold storeroom, in which reserve stocks of cheese and apples are found. This is the only cold storage exhibit on the grounds. Near the apples is a trophy of bottled fruits and grain, 20 feet high. Eight glass pillars filled with grain support a sort of roof, beneath which are arranged fruits and vegetables, prepared at the various Experimental Farms, and representing all parts of Canada. Above this a pyramid of bottled grains of all kinds, in fancy jars. The whole is crowned with festoons and sheaves of grain in the straw. This trophy is the work of Mr. Hay, of the Central Experimental Farm.

At the right is a three-story stand displaying honey, liquid and granulated, in bottles, and comb honey in the familiar square boxes. The light shines through it all, giving beautiful effects in shades of pearl and amber.

Less beautiful, but not less interesting, is the display of flour, breakfast foods, etc. Columns of glass, filled with flour or wheat, support the barrels, boxes and bags in which these products come. Here, of course, the west is the greatest exhibitor. Near by are the canned fruits, tinned meats and potted cheese. Further along are the liquid productions of the Dominion, which include ale, wine, champagne, whiskey, gin, and a fine show of mineral waters. Beyond this is a cone of bottles of ginger ale, soda water, Vichy, etc.

Facing the agricultural trophy is the exhibit of maple syrup, in Columbia show bottles, besides cakes of maple sugar, and the granulated product, also tins of syrup and samples of maple vinegar. This exhibit is mainly from the Eastern Townships.

There are also several wall-cases containing fish, canned and dried, and canned lobster, fish oil and table salt.

One particularly attractive case is that containing confectionery and chewing gum. Three sloping shelves are adorned with exhibits of candy, while above them is an assortment of pepsin and fruit gums. This is a novelty to most visitors, for chewing gum is a New World article.

The universal opinion is that Canada has an exhibit to be proud of, a serious, business-like display of the resources and products of a great country.

THE HORTICULTURISTS.

Papers read at last night's session.

At the last evening's session of the Canadian Horticultural Association's convention the Rev. Dr. Campbell called attention to the neglected wild flowers of Canada. Many of them, he said, were most beautiful in themselves, and if they were rare, would be highly prized. He held that every well-equipped horticultural establishment should have specimens of every variety of our native ferns and orchids.

Mr. S. S. Bain, of Montreal, read a paper on "The advantage of organization in our business." He thought that few florists worked on business principles, or priced their plants on any intelligent system. Hence arose underselling, with all its consequences. He enumerated several points, in which organization was desirable, the most important being grading, by which flowers of a certain perfection would bear a certain value, and which would enable advance orders to be given with a certainty of satisfaction to both buyer and seller; mutual help, by which one dealer would sell to another; purchases in bulk, by which individual retailers would be able to get the advantage of wholesale prices.

Mr. J. H. Dunlop, of Toronto, read a paper on "Roses up to date." After discussing the American Beauty, Bride and other varieties of this flower, he described two of this year's novelties, the Liberty, of a glowing crimson color, with a very sweet perfume, and the Lady Dorothea, a sprout from the Sunset, which flowers well in winter, and is of a soft shade of peach pink, deepening to a red at the base of the petals, outside, and a bright flesh pink inside.

Mr. G. Robinson, of Outremont, discussed "How to make a private place most attractive," and gave many practical suggestions for the management of a garden. Trees and shrubs must not be planted too thickly, even at the cost of the immediate appearance. Beds should be laid out with a view to variety, and carpet beds should be mixed with moss beds. Every piece of ground

should either have flowers or the immediate prospect of flowers. Neatness and order must be everywhere, especially in the lawns, the edge of beds and the walks. Staking and watering might be overdone, and herbaceous plants should be allowed to grow as much as possible in their natural shape. Green-houses must be made attractive, and this could be best done by keeping a good selection of all varieties and one specialty for each season.

Certificates of merit were granted by the judges of the association, Messrs. William Scott, of Ottawa; Thomas Manton, of Toronto, and S. S. Bain, of Montreal, to Mr. William Gammage, of London, Ont., for some very thrifty carnation plants, a fine young begonia, Gloire de Lorraine, some vigorous violets in pots, and a collection of small ferns; to Graham Bros., Ottawa, for a collection of useful commercial ferns; to Mr. John Campbell, Simcoe, Ont., for 250 spikes of gladioli, with very fine flowers, which consisted of upwards of fifty varieties; to Mr. C. A. Smith, gardener to Mr. T. A. Dawes, for two vases of fine dahlias, and a splendidly grown specimen of *Achylifa Sanderii*; and to Mr. Charles Scrim, of Ottawa, for six plants of *Erica* in various sizes and of fine, vigorous growth, and for a collection of small, well-grown commercial ferns. *Witness.*

WHEN PASTURES ARE SHORT.

Green cut grain makes best substitute.

D. M. Macpherson, Lancaster, Ont., writing to *Farming*, on summer feed of cows, says:

"In reply to your esteemed letter asking for information as to the value of feeding silage in summer, etc., would say that I have fed much silage myself to milch cows during the summer when pastures are short, but have experienced the results that other dairymen have obtained with the use of such feed, and I take pleasure in given you what information I have obtained on this matter.

A number of farmers sending milk to my factories for some years past have used silage in summer and have found it very good feed; as bulk food in all cases, a portion of meal should be fed with it, and a fair allowance is about one pound of meal to eight or ten pounds of silage (corn).

This proportion makes a balanced food for milk production.

My own experience and practise of feeding milch cows so as to keep up a full flow of milk on short pasture is that the best and cheapest feed is green cut grain, used when the grain is well formed. A field used for this purpose is divided into several parts, (three or four,) one sown very early, the second in ten to fifteen days, the third ten to fifteen days, and so on until all the field is sown. The grain used is a mixture of peas, oats, and buckwheat, in the following proportion and amount per acre: One and a half bushel of oats, one of pease, and half a bushel of buckwheat. This green feed is fed night and morning along with a small allowance of meal—about one pound of meal to fifteen pounds of green feed. This green feed is cut with the mower during the forenoon and allowed to wilt until the evening, when it is drawn to the stable and fed, twenty-five pounds night and morning.

The succulence of this green feed, with mixed grains along with the meal, gives a balanced ration of the ratio of 1 to 6 and milch cows do their best on such feed along with pasture. A milch cow giving 25 to 30 pounds of milk daily needs to consume 100 pounds of grass daily, and when the equivalent of 50 pounds of grass is given in green feed and meal then the cow needs to consume 50 pounds of grass. If she gets only 75 pounds of grass daily she will shrink in her milk to 20 pounds or less, but by giving her 20 to 30 pounds of green feed and meal she will do her best work of 30 pounds of milk.

The food of support of a milch cow on grass is about 60 to 70 pounds of green grass or green grain. The milch cow must first absorb the food of support; after that the amount consumed up to the maximum limit of assimilation goes to milk production. It is quite evident, therefore, that the dairyman to get the best work from his cows must supply daily the full requirements of food in a balanced and digestible condition, sufficient in amount to meet the food of support and the food of maximum production.

A rather remarkable coincidence is shown in the food of a milch cow and her milk product. They contain pound for pound the same digestible constituent; for instance, 100 pounds of good pasture grass contains about the same animal nutriment as 100 pounds of whole milk of average quality, and so if a milch cow consumes 100

pounds of pasture grass, giving a good flow of milk of say 25 pounds, she is practically taking into her stomach daily the elements of 100 pounds of milk, to give from her udder 25 pounds of milk; in other words, she consumes the elements of 100 pounds of milk daily, of which 75 pounds go to the food of support and 25 pounds to product.

The Dairy.

The Motel Farm, Compton, Que.
August 18th 1900.

A. R. JENNER-FUST, Esq.,

Editor *Journal of Agriculture*,

Ste Anne de Bellevue, Q.

DEAR SIR, — I have your letter of the 3rd inst. with letter (copy) from Mr. C. E. Standish to Mons. Gigault enclosed, as stated.

I note what Mr. Standish says with regard to the shipment by the makers of too green cheese.

That the buyers have reason for complaint there can be no doubt whatever, nor is their complaint anything new. It is only within the last few years that the curing of cheese in a proper manner has engaged the attention of the cheese-makers in general, and the action of the government in granting substantial aid to proprietors of cheese factories who put up curing rooms according to recognized plans and specifications ensuring control of temperature and humidity of the atmosphere is greatly to be commended. Yet, I cannot but feel, that this government bonus itself, is most discreditable to the proprietors, in so much that it affords very evident proof, that so important an item in the manufacture of factory Cheddar, as curing, has failed to receive that intelligent attention, which other and perhaps less important items in its manufacture have not failed to receive. And why? It cannot be possible that the makers consider their cheese a finished article and ready for the market and consumption, directly they are pressed. It is more than likely that all the makers are perfectly aware, that their cheese needs curing, and more than that, that there is a certain amount of curing under correct conditions required. Then the only reasons that a maker can have for shipping his cheese too green, are: First: that he is in hurry to realize on his output, or perhaps his patrons are; second:

that he has not a suitable room in which to cure his cheese; third: that he hopes to gain by disposing of his cheese before any material shrinkage occurs; fourth: that he is not capable of judging how long to cure.

In answering these, it must not be lost sight of that all cheese (even of the same make) does not require the same length of time for curing, but that a rule can be established in this connection there is no doubt. The rate at which the cheese will ripen will depend upon the acidity of the liquid from press more than upon any other factor, assuming of course the cheeses are kept at a uniform ripening temperature. But as this acidity cannot be accurately judged without the use of the acidimeter or some apparatus of the same sort, perhaps the best practical test of ripeness is when the cheese show sign of "breaking down."

Prof. J. A. Ruddick, the newly appointed official referee on cheese and butter, Montreal, writes me, that one of the principal reasons why cheese should not be shipped too green, is "that a green cheese require frequent turning to prevent the moisture from setting in the lower end, thus making that end too moist, and softening the rind, while the other end dries out and may crack." When the "breaking down" process begins the moisture is then more or less assimilated with the curd and will not pass from end to end.

Prof. Ruddick goes on to say, that, "the maker and patrons may not suffer any immediate loss by shipping cheese too green, but if anything is done which will effect the reputation of our cheese they will eventually lose by it. There may even be a temporary gain in shipping early, but it was for the sake of a temporary gain that the Americans ruined their export trade in cheese." (1)

Undoubtedly the shippers have a standard upon which they base their judgment of the correct, or let us say, most suitable, degree of richness of cheese for export purposes. Seeing that cheese needs to be kept under certain favourable atmospheric conditions (of temperature and humidity) to develop the ripening process to best advantage, it stands to reason that any changes in these conditions which the cheese undergo, such as shipment, by road, rail or water, will affect the ripening process more or less directly, according as the

(1) Very worthy of attention. Ed.

new conditions vary more or less from the most favourable conditions. Therefore in buying cheese for shipment, the buyers must be perfectly aware of the conditions which the cheese are liable to be subjected to before they reach the consumer and should be in a position to advise the maker when to ship his cheese.

The ripening of cheese proceeds faster in a high temperature than in a cool one, and it has been found by experience that a uniform temperature of 62° F. is most suitable for the ripening of a factory Cheddar. It is very evident that if cheese is kept until cured before being disposed of, that the subsequent conditions should be such that the ripening process be retarded or better still stopped entirely if such be possible. Under present conditions in which the refrigerator service at our disposal plays so important a part, it will be easily understood that cheese can be brought to far greater ripeness before it leaves the factory for export, than formerly. But of course it is always advisable to ship closer to the hoop in hot weather than in cool weather. In explanation of the "breaking-down" process I would add, that in milk there are several types of fermentative action due to different classes of organisms. One class of these, the ferments affecting the casein, so change this compound that it is easily dissolved. This dissolution is really a process of peptonization in which the proteid compounds of the milk are changed into soluble peptones. In factory Cheddar, the change goes on throughout the whole mass simultaneously, provided the cheese are turned regularly, and has no reference to the organisms that may be present in the air or on the shelves of the curing room or the free access of oxygen. So long as lactic acid is being developed in the curd, so long is the cheese ripening. When the maximum acidity has been attained, it then begins to gradually diminish, decomposition sets in, and the cheese become in time absolutely valueless.

Trusting these few notes, on the subject of shipping too green-cheese, may draw out a few words of advice from the shippers themselves ;

Believe me dear Sir,

Yours very respectfully,

H. WESTON PARRY.



CANADA IN PARIS.

The dairy exhibit is much admired.

The section of the Canadian Pavilion at the Paris Exhibition devoted to the dairy industry is very much admired and attracts the attention of many visitors. Canadian cheese is specially worthy of note, having received several awards. Seventy-five large cheeses (1) were forwarded from Canada to Paris ; they are exhibited in one of the largest halls on the ground floor, where they form a fine display. In order that the public may be assured of its good quality, samples are presented to those desirous of tasting it. Canadian cheese is considered of superior quality, in France. Every day inquiries are made of the commissioners as to where such good cheese can be obtained. Of course these inquiries are referred to grocers, to whom so many requests will be made, that they will have to provide themselves with this much desired commodity.

Amongst other applicants, a wholesale cheese merchant from the south of France, having visited this section of the dairy industry, and tasted our cheese, decided to deal with Canada directly. He, at once, gave a very large order to one of our important Montreal firms, enclosing, as guarantee, a letter from the Credit Lyonnais, certifying that the goods would be paid for C. O. D. Canadian cheese will, therefore, follow the Montreal-Bordeaux route, and one may expect that many similar orders will be given.

With regard to the appearance, yellow cheese is preferred to the white ; so it is advisable for manufacturers to give it the favorite color. Canadian cheese has already won an extended reputation ; in England more than two hundred millions of pounds are disposed of annually, and the Exhibition is sure to spread its reputation everywhere and increase the trade.

Canadian butter is very much admired on account of its appetizing appearance, and the fine manner in which it is prepared for the Exhibition. It is well known that this product holds a prominent place on the English market, where twelve millions of pounds were sold last year.

Canadian maple syrup is very much admired, as well as the sugar, while the honey is declared

(1) The writer of this, like the editor of the JOURNAL OF AGRICULTURE, makes the plural of cheese cheeses. ED.

by the jurors to be unequalled, and to compare favorably with the Russian honey, which is considered the best in the world.

In cereals and other agricultural products, Quebec, Ontario and Manitoba, are declared by the jurors to be the best, Manitoba wheat being especially admired. The exhibit of flax and wool is also very good.

Witness.

GRADING DAIRY PRODUCTS IN NEW-ZEALAND.

The last report on New-Zealand Dairying service published by Mr. J. A. Ruddick, ex-Dairy Commissioner, contains many useful informations, a close study of which cannot fail to interest and benefit our readers. The progress made by New-Zealand since it engaged in the Dairy Industry has been very striking. Though a good part of it is undoubtedly due to exceptional natural advantages, and to the fact that production is especially active there at a time when it has ceased in the Northern hemisphere, yet the system of Dairy organisation of that country has had much to do with the rapid improvement in the quality of dairy produce. Though Canada is much older in the Dairy industry than New-Zealand yet it may be said that it has much to learn from the latter, and were the same laws which govern the exportation of dairy produce in New-Zealand to be put in force in this country, a great progress would be accomplished.

Exportation of dairy-produce in New-Zealand can lawfully be effected only from certain ports which are provided by the government with cold storage buildings. All dairy produce intended for exportation must be sent at least 4 days before the shipping date and placed into cold storage for the purpose of being cooled or frozen, and classed according to merit by expert graders appointed by the government. Both cheese and butter are graded into 3 classes according to a scale of points, which is the same for all graders. All produce condemned by the graders is judged unfit for human consumption and sold for soap making or other works.

A report of the quality of the produce examined is handed by the grader to the maker unless the latter has given his right to receive this report to another person. Graders must also send a full report on each parcel examined to the Dairy

Commissioner who is thus enabled to form an exact idea of the progress of the industry.

Uniformity in scoring being rightly considered as a most important point, if not an absolute necessity for the efficiency of the service, no efforts are spared in order to attain it. Graders meet twice during the year and examine together similar lots of butter and cheese in order to arrive as much as possible at the same results in judging. These semi-annual meetings have so far settled all difficulties regarding this important detail.

The advantages of such a system are too obvious to be much insisted upon. The maker, whose cheese or butter has been graded second or third class obtains, from the report handed to him by the grader, some reliable and definite information, which should enable him to prevent the recurrence of such defects in the future. Thus all doubts and suspicions on the part of the seller which too often occur when the buyer is left to be the sole judge of the produce, are dispelled. Definite reasons being given by disinterested experts for placing the produce in any grade, and for the cutting in prices resulting therefrom, the maker's only resource would be to improve his methods, without believing, as he often does now, in some injustice or dishonesty on the part of the buyer. Furthermore, through the reports received upon each parcel examined, the Dairy Commissioner knows at all times just how the business is progressing, the needs and defects of each factory, and the remedy to be applied. The task of the instructors is thus rendered easier and their work much more effective. Such a system, in bringing about a uniformity of quality in the produce, has done much to create a high reputation for New-Zealand produce on British markets and undoubtedly Canadian Dairymen would secure the same results by adopting it.

We have thus briefly reviewed the advantages which might reasonably be expected from the adoption of this system. Let us now see if the statistics of New-Zealand bear out this statements :

“The quantity and value of Dairy produce exported during the year ending the 31 March 1900 show an increase over the previous year as follows :

	cwt.	%
Increase in quantity of butter....	58,135	57
Increase in quantity of cheese....	45,359	90
	£	
Total incr. value of Dairy produce...	358,728	67

True, similar progress, at least in the case of butter, may also be quoted from Canada's statistics, but could figures similar to the following, compiled from the graders' reports on creamery butter, be given on our exported produce :

	1898-99	1899-1900
Number of packages scoring 90 points and over	98,723	172, 145
Number of packages scoring 94,12 points & over	12,205	18,445

Quoting from Mr. Ruddick: "As anything scoring over 90 points may be called first class butter, it will thus be seen at a glance that we have sent nearly twice as much butter during the year as we did in 1898-99, and thus our position on the market is that much stronger. The great output this year was rather against the quality because the capacity of many of the factories was over-taxed." A lack of uniformity in the quality of the cheese is still noticed, though steadily decreasing, but, as we can see from the above figures the improvement in the quality of the creamery butter is especially noticeable.

In the competition for the markets of the world quality of the produce and uniformity in quality are two most important factors, and the victory will remain to the country who has the best endeavored to secure these. It is time that Canadian Dairymen, following the example of New Zealand, should take energetic means to stop the flow of inferior produce, and firmly establish our reputation by manufacturing and exporting only the best quality of butter and cheese.

C. M.

DAIRYING IN DENMARK.

Properly sterilised milk ought to keep sweet and fresh for any length of time (so long as the vessel is kept unopened), and is a type of milk that has attained considerable popularity in Europe. In Holland, Germany, Switzerland, and other countries, sterilised milk is very popular, but comparatively little seem to be used in English-speaking countries, as it is as rarely distributed in America as it is in England. In Denmark pasteurisation is the system adopted, and pasteurised milk seems to be very largely used in Copenhagen and other large towns. The amount of pasteurised milk sent out in sealed bottles by one company alone in Copenhagen reaches the enormous quantity of something like 8,000 gallons a

day. At the depôt of this company, the milk, after being sampled and weighed, is passed through what appears to be a very efficient pasteurising apparatus. During its passage the milk is heated to 175 deg. Fa., and then (which is most important) suddenly cooled down to a low temperature, and run straight away to the bottling apparatus, where it is rapidly bottled and quickly sealed by means of an ingenious mechanical contrivance. It was said that this special pasteurising plant was capable of dealing with 500 gallons of milk an hour. The particular method of sealing is worth noting, as it is, so far as the present writer is aware, unused in England, although he has seen it in use two or three years ago in the dairy of the Agricultural School of the University of Wisconsin. The bottles are provided with a circular shoulder within the neck about an eighth of an inch below the rim of the mouth. To exactly fit the inside of the mouth, cardboard discs are cut out by machinery and stamped with the company's name. The rest is simple. The bottler picks up a disc, puts it in a machine that is kept constantly working, places the neck of the bottle in the right spot, and the disc is driven into the neck with lightning speed, the shoulder holding the disc in its proper place. During the process the disc has been passed through melted paraffin, and this renders the sealing quite air-tight. Paraffin, of course, is insoluble in milk, and is without either taste or smell. The customers, before using the contents of the bottle, have simply to remove that wad and throw it away, so that there is no trouble with corks or patent stoppers. On the return of the bottles to the depôt they are first thoroughly washed, and then steamed in huge iron sterilisers with super heated steam, so that perfect sterilisation is secured. In England one is frequently met with the objection when advocating the use of pasteurised milk that the expenses attending its production would so increase the retail cost of the milk that it would never pay a dairyman to supply it. Yet here in Copenhagen this company can afford to retail pasteurised milk at exactly the same price as the raw milk of other companies. The explanation seems to be that milk must be preserved either by the application of heat or cold, and that heat can be produced quite as cheaply as cold.

Another company claims to supply pure, raw, or natural milk by following a rational system of dairying. First of all the farmers supplying the

dairy with milk must agree to adhere to the rules drawn up for his guidance by the company. These rules include directions as to feeding the cows, the sanitary arrangements of the cow-houses, the grooming of the cow, the conditions of milking, and the immediate cooling of the milk after its withdrawal from the cow. The company seems to have its own vans for the conveyance of milk from the country, and on its arrival the seal of the can is broken, the lid opened, and the contents tested. The sampling and preliminary testing done by a woman, who takes the temperature of the milk, ladles out a sample, tastes it, and fills a small bottle with the sample for testing for fat, &c., in the laboratory. The milk is then weighed, and the weight, temperature, taste, &c., entered in a book kept for the purpose. The milk when it leaves the farm must not exceed 41 deg. Fahr., and so particular is the company in this matter that the milk is rejected if, when it reaches the depôt, it has acquired a temperature of 50 deg. Fahr. At this establishment all the milk is cleaned by upward filtration through beds of clean, sterilized coarse sand and layers of fine cloth, and the result appears to be particularly satisfactory. As in the other dairy, the milk is distributed to the consumer in sealed bottles.

The preservation of milk by refrigeration is also practised by milk caterers in Copenhagen, who receive their supply from a long distance. At the town of Odense, in the Island of Fünen, for example, there is a large co-operative dairy that supplies fresh milk to the capital 80 miles away, the journey including a short sea passage of about 16 miles across the Little Belt. By the use of special appliances milk is frozen in huge blocks, and these are broken over and into enormous cylinders of milk, and despatched, packed in straw, in special railway vans, to Copenhagen. It is said that over 22,000 lb. of such Milk are daily supplied to the city. On its arrival at the depôt it is very cautiously warmed, and immediately distributed, or it may be kept for several days in a state of refrigeration without in anyway affecting its freshness. The milk that was being thawed on the occasion of our visit was stated to be five days old. To the taste it was quite sweet, and undistinguishable from ordinary fresh milk a few hours old. The advantage of such a system when the supply of milk temporarily exceeds the demand is very obvious.

DAVID HORTON.—Ex.

The Poultry-Yard.

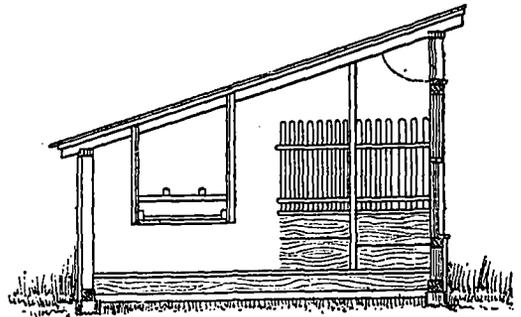
(CONDUCTED BY S. J. ANDRES).

SCRATCHING SHED HOUSE.

How to make the house that is popular with poultrymen.

Unless for a very cold climate, we believe that no other house equals the one with a scratching shed for keeping fowls in health. There are many different styles of these, and details vary, but the general plan is the same in all. Any plan given must be adapted to individual needs and circumstances. We give herewith some illustrations and description of a scratching shed-house and yards, taken from Berlin Bridges and Buildings, by courtesy of the Berlin Iron Bridge Company, East Berlin, Conn.

A cross section of the house is given, which shows the plan of the frame-work, the partition between the two pens, and the roosts suspended from the rafters. The house is 12 feet wide and 16 feet long, divided in the centre by a partition made of tight-boards about 18 inches or two feet above the floor and with slats, lath or wire netting extending four feet above the top of the boards or



Cross section of interior.

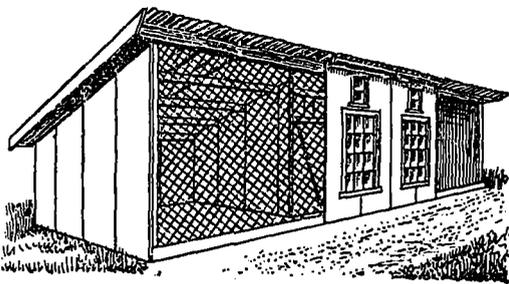
clear to the roof. On each end of the building is an open front scratching-shed 12 feet square, which consists of a plain shed with the south-front entirely open, except an inclosure of wire netting, which prevents the fowls from getting out into the yard in wet weather or when the snow is on the ground. We should prefer to have this shed boarded tight about half-way from the top down.

The yards in the front of the building are 20

feet wide and can extend any distance away from the buildings.

The house, according to the plan given, is built on foundations made by placing chestnut or spruce posts in the ground, on the top of which are placed 4 by 6 inch sills at the height of about eight inches above the natural ground surface. To avoid dampness and vermin, a board-floor is preferred, but the character of the soil and circumstances must decide this. This is made of 7 by 8 inch matched spruce or pine, resting on 2 by 6 inch outside sheathing seven-eighths inch matched boards, planed on both sides. The sides of the building should be covered with a first-class quality of outside building paper, secured by cleats at proper distances apart to keep the paper smooth and well fastened to the boarding.

If a more expensive house is desired, an inside sheathing can be placed on studs, which would give an air space and would make the house much warmer during severe cold weather. The roofing board should be matched spruce or pine, planed on one side, the smooth side showing on the inside of the building. On the top of this is recommended placing a first-class quality of tarred building paper, on which the roofing of galvanized corrugated steel should be placed. The height of the coop in front should be about $7\frac{1}{2}$ feet and the height at the rear about $4\frac{1}{2}$ feet, which would give a pitch of four inches to the foot to the roof. In the south front should be placed two windows, one in each pen, made of two sashes, each sash having six light about 8 by 10 inches. The sill of the windows should be placed about one foot from the floor. On the inside, the windows should be covered with wire netting, to prevent the fowls from breaking the glass, should they become frightened and fly against the window. Above should be placed the roosts made of 2 or 3



Perspective view of house.

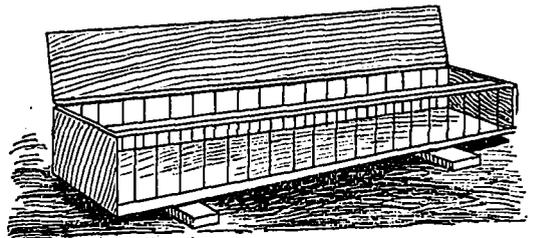
inch timbers and 3 inch dimension vertically with the upper edge rounded. The top of this platform

should not be over 30 inches above the floor, and the roosts so arranged and spaced as to give each fowl sufficient room without crowding. The roosts and board platform should be arranged so as to be moved readily and taken out of the building for a thorough cleaning. The object in not connecting the platform with the sides of the building in any way is to give no encouragement for vermin to collect in the walls of the building and to facilitate the labor of keeping the coop thoroughly cleaned and whitewashed. The nests, which should be of light construction, should be hung on the partitions and the sides of the coop.

S. J. ANDRES.

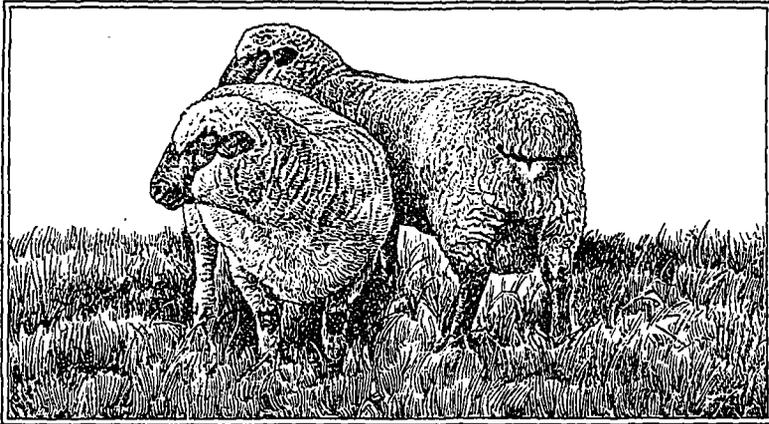
IMPROVED FEED TROUGH.

This illustration is one coming from one who used it with satisfactory results. A hen is sadly deficient in the makeup for cleanliness. If permitted to have their own way they will soil their feed and water troughs without any compunctions of conscience to all appearances and without doing any offense to their sense of propriety. "Cleanliness is next to godliness" we are taught in human conduct. It may not be a virtue of such



Poultry feed trough.

importance in chicken life, yet we believe that even in these dirt should have its limitation. And we draw the line decidedly when an old hen proposes to jump into feed or water with her filthy feet. And it may be prevented by the use of this trough. The bottom and ends are made of ten inch boards. The top consists of a strip one and one half inches wide at each side and a hinged lid covering the space between them. The sides are made of a strip two and one half inches wide at the bottom and above that heavy wire slats about two and one half inches apart; these are fastened with staples at the lower end, and turned at right angles, driven through the one and one half inch strip and clinched at the upper end.



Imported prize winning Hampshire Down ram lambs, the property of Hillhurst Farm, Hillhurst, P. Q.

Strips of board would do, slats or the other common plaster lath I have used sometimes. The rack should be ten or twelve inches high and may be of any length desired.

Water in vessels can be placed in this rack as well as feed of any kind including cabbage heads, turnips, beets, etc., of which they are very fond, and you will find that all will be kept clean and not wasted.

S. J. ANDRES.

Live-Stock.

CORRESPONDENCE.

Hillhurst Station, 7 Aug. 1900.

Dear Mr. JENNER-FUST.

You have probably received the *London L. S.* (1) *Journal* for July 27th and I am sure you will be pleased to learn that two of the Royal prize Hampshire ewes are now in quarantine at Levis and will be at Hillhurst this week, as well as 4 ewe lambs, 2 ram lambs, and 15 field ewes from Mr. J. Flower's flock.

I hope, to-morrow, to have photographs of the lambs and prize ewes, copies of which I will send you and shall be glad if you can make use of them.

The Hampshire Downs have done very well and I think them the best mutton sheep we have had at Hillhurst; we shall have a flock of 75 with this last importation. Some of our home bred lambs

(1) That is, "Live-Stock Journal," which we never see. Ed.

I have sold to go to Wisconsin after the Toronto Exhibition.

It would give me a great pleasure if you could run out for a day at Hillhurst. I should like you to see the Shorthorns as well as the sheep. We are doing more in the Scotch strains but will not lose sight of milking qualities which will be more sought after, in my opinion, when the value of beef cattle falls.

With kind regards, I am yours sincerely

JAS. A. COCHRANE.

(NOTE.—The above letter we have just received from Hillhurst. Mr. James Cochrane evidently remembered the talks we used to have as long ago as 1872 on the subject of the superiority of the Hampshire-Downs in early maturity, and other good qualities, over all other breeds of sheep).

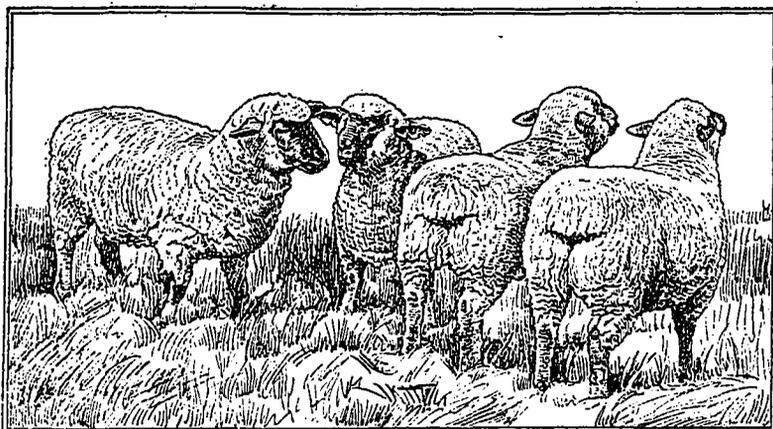
REPORT ON SHEEP CARCASSES. (r)

BY WM. DAVIES CO., TORONTO.

The Wm. Davies Co., Toronto purchased all the sheep carcasses from the block tests as well as those of the swine. The report of their beef and mutton buyer and of the foreman of their retail depots on the suitability of the sheep carcasses for the needs of the markets of to-day is as follows:

"All the men in charge of our various retail depots express the same opinion, viz., that what lean there is in the mutton is of very great excellence. Several speak of some of their customers who are

(1) From Report of Ontario Live Stock Association—
111, 12



Imported prize-winning Hampshire-Down ewe lambs, the property of Hillhurst-Farm, Hillhurst, P. Q.

critical, and who have always found fault with Canadian mutton, stating in relation to this mutton that it resembles English stock more than anything they have ever received in Canada. Every foreman, however, advises, that, owing to the excess of fat there is a very limited demand for it, and that what they are selling of it is very unprofitable, owing to the fat having to be trimmed off before the buyers will take it. The waste in this respect seems to run to about one-third. One of the foremen advises that the president of our company purchased a saddle weighing 28½ lbs., but required 9 lbs. of fat to be trimmed off it. This doubtless, proved very satisfactory eating, but you will easily see that this method of sale was very unprofitable to the retailer.

11. The general report furnished by our beef buyer, who is responsible for the fresh meats handled of our various depots, is as follow :

Cotswold.—A good fleshy sheep ; does not carry too much suet, but fat on the back is too thick.

Leicester —A little leaner sheep than the Cotswold ; suet about right ; reasonably fleshy.

Lincoln.—Fat too thick on the back ; too heavy in suet ; what flesh there is is good.

Horned Dorset.—A nice retail lamb but hard to sell to the retail butcher because it is heavier in the front quarters than other lambs.

Shropshire.—Makes a nice sheep in all parts, but the flesh wants to be of a better quality.

Southdown.—Cut very thick and fat ; an absence of flesh, but what there is is of exceedingly good quality ; altogether too much suet.

Suffolk.—Very full of flesh, but not of so good a

quality as the Southdown ; does not carry too much suet."

THE FOREMEN'S REPORTS.

(1) "I might say in regard to the sheep purchased at the Provincial Fat Stock Show, that although the quality was A1, they would be very unprofitable for us to handle, but altogether too fat for our trade."

(2) "In reply to your letter asking for report on the prize mutton received I would say that the public do not seem to appreciate it on account of the abundance of fat. The few who have tried it, speak in high praise of its quality.

"It is useless trying to sell it without trimming, fully 40 per cent being fat. This brings the cost of the whole up to about 8c. a pound, buying price."

(3) "In regard to the show sheep received by us before Christmas, I beg to report that the quality was all that could be desired. We found, however, that it was hard to realize a reasonable price, and think that stock of this description would be unsuitable for this locality."

(4) "The sheep received by us, from London Fat Stock Show, we found much too fat to be of any use for our local trade. The public simply refused to buy at any price. The only way I was able to dispose of it was by cutting it upon the counter after trimming 45 per cent. of fat from it. The breast and flank were only fit for the fat box, and there was altogether too small a proportion of lean meat for it even to be of any use for our retail trade in Parkdale."

IN THE MARITIME PROVINCES

The Bacon Hog.

ED. HOARD'S DAIRYMAN:—The bacon hog is now in evidence more than ever, and is another incentive to farmers going more strongly into dairying, from the fact that choice export bacon can only be produced from dairy bye-products, as whey, skim milk and butter milk, mixed with grain food, of course.

Just now bacon hog has reached the unprecedented price of \$7 per cwt. This is a great price, and what is regrettable few farmers are in a position to take advantage of this price, from the fact that winter fattening of bacon hogs, like winter dairying, has not made the progress it should. In fact, for profit in the bacon industry, a radical change must be made in the time of breeding. The progress of winter dairying had been slow at first, but, as the farmers are seeing the advantages and the necessity of it, it is now fast becoming general in all dairy districts. If the bacon industry shall become a success, more attention must be paid to winter hog-raising.

As a general thing farmers are in the habit of raising but one litter a year from the sow, and that in spring. Now the spring is the very worst time in the year for the litters to come, for the reason that the spring litters will be put on the market in the late fall months, when bacon is always at the very lowest notch. Fully three-fourths of the hog crop are placed on the market in the months of October, November, December and January, the very months in all the year when hog products are the lowest. The history of the past show (and there is a good reason for it) that the bacon hog market begins to rise in the month of February, and there is a steady rise in price of bacon hogs through March, April, May, June, July and August, and the price reaches, as a rule, to the highest point in the early part of August. After this period there is a gradual descent in the market. By the end of August prices have begun to fall; the fall in the market is gradual through September and October, when rock bottom is generally reached sometime in the month of November. For some reason the greatest consumption of bacon takes place in Britain from April to August, while the supply in this period is lowest. These facts should be a lesson to farmers who have hogs, particularly bacon hogs.

When should the bacon sow farrow? The answer to this question can be easily given from a study of the foregoing facts of the market. Now, a bacon hog is right to market at seven or eight months of age, therefore autumn months are the right time for the litters to come. If but one litter a year is raised that litter should be raised in the months of September, October, November

or December. But there is no reason why a brood sow should not raise two litters a year. There is no valid reason why a brood sow should be allowed to rest—farrow—for six months of the year. Most writers on the hog say that fall litters should come not later than September. This is a grave error. A sow that has farrowed and suckled a spring litter is often tardy about breeding a fall litter so early as September following, and when the owner finds that he is unable to have his sow served, to farrow in the month of September, decides not to breed her at all, but confine himself to having his sow breed but once in a year. Well it may be different with the pork-hog, but with regard to the bacon hog the later in the fall the litter is farrowed the greater will be the advantages. As a rule the December litter will fetch a higher price than the September litter.

Let it be understood, then, that the months of March, April, May and June are the four worst months of the year for the bacon hog to be farrowed, just the same as these months are the very worst months for the dairy cow to calve, but the cow breeds but once a year whereas the sow may, and should, breed twice a year. It is all right for one of the litters to be farrowed in those spring months, but the principal litter of the year and the litter, if the sow is bred but once, should come in the late fall and early winter months.

True, the spring litter can be raised somewhat cheaper than the fall and winter litter, and this will compensate in some degree for the lower price that will be obtained for the spring litters. Most authorities hitherto advise in favor of March and September as the most suitable months for the sow to farrow. For the bacon hog this is not so.

June and December would be the most suitable months of all the year when two litters a year are sought. Let the breeders be in not too great a hurry in breeding the sow that farrow in March or April. Let the pig suckle at least eight weeks, and if the sow is bred three months after farrowing it will be time enough. All this presupposes warm, well-ventilated and roomy winter quarters for the pigs. It also means the growing of abundance of roots for feeding, both cooked and raw, during the winter. It means, too, abundance of skim milk for the winter fattening of the fall pigs. In conclusion, then, the *sine qua non* of successful bacon raising is fall litters, warm and roomy quarters, abundance of skim milk and lots of roots, as turnips, beets and potatoes. With all these handy, the choice of grain foods is not important.

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