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THE ILLUSTRATED

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The deliberations of the Council of Agriculture. — Several people seem puzzled to know why the Journal of Agriculture has so long neglected to publish the deliberations of the Council of Agriculture. The reason is as follows: The Council is the adviser of the Commissioner of Agriculture, and nothing more. Its proceedings are addressed, directly, to the Commissioner; but they have no force in law until approved by the Lieutenant Governor in Council. Before they receive this sanction they are obligatory on no one. The deliberations of the Council of Agriculture, for reasons which it is unnecessary to mention, have remained for about two years without this sanction. The seal having been affixed to them at last, they are published at full length, in the report of the Commissioner of Agriculture

We need hardly add that we shall be always glad to place before our readers these, and all other documents of public interest, as soon as they shall have received the necessary authorisation.

Ice gathering and Ice houses.

No farmer worthy of the name should be any longer without an ice house. The simplest shed, say 14 feet square, and from 8 to 10 feet high in the square, will, in ordinary circumstances, answer fully as well as the most expensive building.

It has been clearly proved that, with milk cooled down to from 32° to 40° Fahrenheit, fully one third more butter is obtained than with the same milk at 75°, and one fourth more than with milk at 60°. Moreover, with milk kept below 45° until skimmed the cream rises before the milk sours. Such skimmed milk is thus fit for human food or for the rearing of young stock, etc. The butter made on this principle comes easier, looks better, has a most delicate sweet cream, and a nutty flavor which secures an easy sale at from 5 to 10 cents per lb. higher than ordinary good butter. Under these circumstances a few words on ice gathering should prove useful at this season.

First.—Select a stream of clean deep water, where possible, so that the ice may be perfectly pure and free from mud, water-grasses, &c.

Second. — Mark out your ice into such pieces as two men can easily handle. Where the ice is 20″ (inches) thick, blocks 30″ × 10″ will be found suitable (1). An ordinary cross-cut saw with one handle removed will answer perfectly. The engraving (No. 1) shows how the ice should be marked off for sawing. The double lines on the sides may be just sufficiently distant to make an opening for the saw. Blocks of ice sufficient for one day's sawing are marked.

Third.—Chop a hole with the axe to let in the saw (see engraving at H). Then saw in the double lines from H toward a, and then from H towards b, so as to make an opening for the sawing of the block. Having cleared a few squares in both directions, chop off these in small pieces, push them under the ice and begin the sawing of the blocks, from 1 to 3, then from 2 to 3. Thus the first block is freed; and as soon as a sufficient number

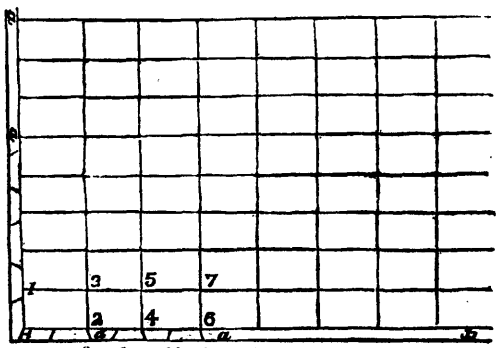


fig. 1.— Marking ice before sawing.

of blocks has been sawn, and a space cleared of snow where they may drawn and loaded, take a light, short ladder with hooks at one end (fig. 2), push it under the blocks, when they can be drawn up with ease and loaded on sleigh. When

Fig. 2.—Light ladder to drawn out the blocks.

the opening in the ice gets large, a long handled pike (fig. 3) becomes necessary. This is a simple, and yet efficient' process,

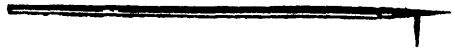


Fig. 3.—Pike used in drawing out the blocks.

which any farmer can follow out with such tools as he generally possesses. Now for the

ICE HOUSE.

The necessary requisites for the preservation of ice during the whole of summer and fall are as follows: 1st. A roof which sheds off the rain completely; 2nd. Thorough drainage below the ice, either throuhg a porous subsoil, or by a drain; 3rd. The exclusion of air, all round the mass of ice, by means of a thick coating of dry saw-dust, chopped straw, tan-bark, &c.; 4th. Good ventilation, so that the moisture arising from the melting ice may be carried off.

As a rule. ice will keep better above than under ground, as the moisture from the ice is thus more easily evaporated. However, a side hill, when convenient, will permit of easy filling without the trouble of raising the blocks of ice. The non-conducting material can either be packed between the ice and the boarding of the shed as the filling progresses, or it may be secured permanently between a double boarding. In either case a thickness of from 15 to 18 inches of such material, above, below and around the ice will be found best.

Having attended to the proper drainage of the ice house,

(1). A board 12 feet long, and 10 inches broad, and an old chisel, will be found convenient to mark the ice into blocks.

so that the water from the melting ice may escape freely at all times, place your non conducting material (1), in a dry state, on the bottom of the ice house. A few loose sticks, broken fence rails, &c., under the ice, will facilitate drainage. Now, pack the ice as evenly and as closely as possible, taking care to fill up all interstices with finely broken ice and a little snow so that tha whole may form a compact mass When the sides of the ice house are not filled up permanently with a non-air-conducting material, such filling must proceed concurrently with the packing of the ice in order to secure thorough safety.

REFRIGERATOR.

We have made for our ice-house a refrigerator which is an immense convenience. It is 3 feet deep, 2 feet high, and 32 inches broad—outside measure.—The frame is of 3 ⋈ 4 inch scantlings, 9 inches apart all round, except in front where we have two small doors. The whole is lined with zinc. It takes exactly two sheets of either galvanised tin or zinc, to surround the whole refrigerator, and make it rat-proof. This refrigerator lies on the bottom of the ice-house,and is surrounded and covered with ice on three sides. An iron pipe, 1½ with in diameter, extending from the refrigerator to the top of the ice-house, gives thorough ventilation.

This refrigerator will hold twelve cans of milk, 8 inches in diameter, and 22 inches high. Where a large quantity of milk has to be cooled, it might be best to make the refrigerator 4 feet high with a shelf, so that a double row of cans could be placed one above the other.

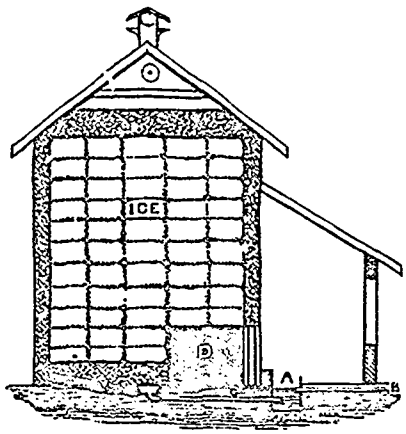


fig. 4.—Cheap ice house with lean-to &c.

Our engraving No. 4 shows a cheap ice-house, with a refrigerator such as we have described. It has however an additional feature which would prove useful in creameries or in very large dairies. The floor of the ice-house is made of concrete. with a fall towards the centre, so that the whole of the ice-water is collected and carried by a metal pipe into a tight water trough, which stands in a lean-to shed. In this trough the cans of milk, hot from the cows, are laid, until they have lost their animal heat. This lean-to is used for the making and storage of butter, and affords a most excellent store-room in summer for fruit, and any other perishable article.

The ice should in all cases be covered over with a good coating of non-conducting material. A plain ventilator should also crown the building Two 8 inches holes. under the peak of the roof, in each of the gables, will greatly add to the action of the ventilator above the roof. Our engraving No. 4 shows one of these ventilation holes; also. a ventilator figs. 5 and 6, which we can highly recommend, both for ice houses and for stables &c. It may consist of four boards nailed together, with an opening sawn off a top of each board, somewhat like the letter U. A peaked cover, extending three

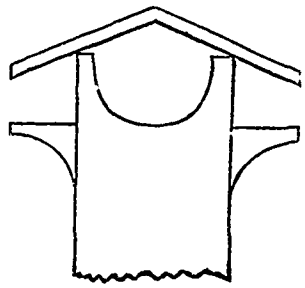


FIG. 5.

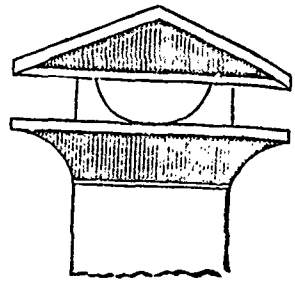


FIG. 6.

inches or more over the ends of the boards is nailed atop. Just below the openings above mentioned, a strip of scantling 3 ⋈ 2 inches is nailed all round, with the under sides bevelled off. This arrangement creates an uncommonly strong draft, which would surprise any one not acquainted with such ventilators.

(1). Saw-dust, tan-bask, chopped straw, &c.

The Milk Products of Canada.

The news of the triumph of Canadian cheese at New-York arrived to late to be noticed in our journal for January. The following article, written by a truly practical man, will be read with pleasure, proving, as it so clearly does, that we have at least one correspondent who does not grudge the trouble of visiting and investigating the exhibitions of our neighbours, actuated solely by a patriotic desire te enlighten and benefit his too careless and backward fellowcountrymen. Many a journey has he taken to view the best cheese-factories and creameries of the States and of Ontario, and he has not considered it a waste of time to study the most approved works on the subject. Lately, he has even been working for several weeks as an assistant in a butter factory, the manager of which won the first prize at the International Exhibition, at New York, last year. We are happy to say that we are promised a series of articles from the pen of this highly competent authority.

"It has been already announced by the press that the first prize for cheese, at the International show, has been won by a Canadian. This cheese, which I tasted, was exhibited by the Messrs. Hodgson, of Montreal, and was manufactured by a pupil of Mr. Ballantyne, of Stratford, Ontario.

Several times, since the introduction of the factory system into this country, has Canadian cheese won the highest prize at the chief expositions of the United States, and even in England, where the palm of the Royal, at Liverpool, July 1877, was awarded to one of our countrymen. Can any one doubt, for the future, that Canada is able to vie with the whole world in the quality of the products of the dairy?

Having no wish but to benefit our cheese-makers, I hope I shall not be suspected of any desire to wound their feelings, when I state that the Province of Quebec is very inferior, as regards the manufacture of cheese, to her sister of Ontario. The reasons of this inferiority are, first, the cows are neither so good, nor as well fed; secondly, defects exist in our dairy buildings, and in our process of cheese-making. Excellent cheese is made in Quebec—cheese as good as any made in the upper province; but the quality of the general run is very different. If not. why is the price at Toronto from one, to one and a half cents higher than the price at Montreal? If ten lots of inferior cheese are made for one lot of good, as I believe to be the case, can we wonder at our position in the market? It is the production in general that demands improvement.

It is easy to see that the season of 1880 will be, always supposing that good cheese is made, very favourable to the manufacturer, when we consider that the quantity of this staple now in store in London and New York is less by 317,899 boxes than it was at the beginning of 1878.—i. e. 1879, 646.467—in 1880, 328,568.

Many a brilliant success has fallen to the lot of our cheese; but how about our butter? That is as inferior, compared with the butter of other countries, as was our cheese ten years ago. We are told that government should attend to the improvement of our cheese factories! By all means: but, if I may have a say in the matter, I should prefer attention being first turned to the production of better qualities of butter; thinking, as I do, that a larger make of cheese would be imprudent. Unless the first step in improving the breeds of our cattle is taken by government, we shall surely lag behind in the race. (1).

Too much cheese is already made here; at all events, too much of the same sort. Besides, the consumption of cheese is a mere trifle in Quebec, compared with the consumption of butter.—(it hardly exists, in most of our country places. Ed.) and we must not expect too much from the recent unexpected rise in price of this article, a rise due to the fact that this year, the European makers, instead of storing their cheese as usual flung the whole of it on the market as soon as it was made. This, of course, caused a scarcity in the autumn, and a consequent rise in price all over the world. So, it is clear, if we rush wildly into cheese-making in 1880, the same cause will produce the same effect. (If possible, we must create a demand at home, and, for that purpose, cheeses of 8 lbs. to 10 lbs. would seem to be the best to make. Ed.)

As for an outlet for the increased production of butter which we recommend there exists an unlimited demand in South America—but the quality must be very good, in fact, choice. Such butter cannot be made by the ordinary methods pursued here. It must be uniform in texture, smell, colour, and flavour. How few people are able to make such an article as this. In general, different parcels of butter with all the colours of the rainbow, and a dozen different flavours, are all lumped together by the country shopkeeper until enough has been collected to fill his vessels, and of course the price is on a par with the quality. One lot fetches, necessarily, the same price as the rest. (2)

I fear that a large proportion of this butter, when it arrives in England, finds its way into the cart-grease tub.

Last October, when good butter was fetching from 28 to 30 cents a pound, I saw a farmer of St. Cyrille running about from Durham to Richmond, and from Richmond to Ulverton and l'Avenir, with fifteen tubs of butter, which he had great difficulty in selling for 12 cents a pound. It is only at Brockville and Morrisburgh, and in the Eastern Townships, that a fair price can be got, and that price might be improved upon if the creamery system were introduced.

Seven to eight cents a pound on the butter, and three or four cents a pound on the cheese is a fair estimate of the loss to our farmers from the general inferiority of the dairy products—in all, about $16,000! Add to this the loss of possible consumption by the usual bad quality, and $40,000 will not be too high a total. What a tax for the farmers to lay on themselves! And yet people complain that farming does not pay! People wonder that farmers, and the sons of farmers leave their homes for foreign climes to seek that prosperity which their own country *seems* to refuse them. Hence it is that so many of our younger country-folk enter the professions to meet with nothing but disappointment and loss! Ah! we have never followed the direct road which Providence has laid out for us. Canada is, purely and essentially, an agricultural country, and to develope its agricultural productions is our easiest and shortest way to wealth. Then will the population of our villages become more dense, the consumption of our products, whether of the barn floor or of the dairy, more liberal; and commerce and manufactures will be equally benefited. Thus the farmer, while enriching himself, will contribute importantly to the enrichment of his fellow citizens, and the improvement of his native country.

S. M. B. St. Hyacinthe.

(1) My reading and my experience, both, lead me to distrust the power of government to interfere beneficially in such a matter.
A. R. J. F.

(2) In 1877 when Mr. McGibbon was paying me 25 cts. a pound for my butter, the shopkeepers of St. Hugues only offered me 15 cents. A. R. J. F.

The two following letters will tell their own story. The observations of Messrs. Ayer are worthy of all attention, particularly the passage "a section of the country with good grass, or, at least, pastures where good grass should grow." One of the delegates from Scotland, Mr. Elliot, says; "Oct. 27th.—Left Montreal by train for Cookshire, in the Eastern Townships. Crossed the St. Lawrence, and passed through a very extensive tract of flat land, mostly occupied by French settlers. Apparently good land, but very much exhausted—in parts nothing but a bed of thistles."—A. R. J. F.

Dear Sir,

Owing to being out of town, I have not had an opportunity of giving you the information requested.

The butter taking first prize for best made in Canada, salted with Higgins salt, was made at Athelstan, P. Q., by James Tolan, who is employed by me, and Wilson and McGinnis of that place.

The 3rd prize butter was taken by Corbin factory, and owned by me and F. A. Cantwell. The maker's name, C. B. Church.

If you want any further information I shall be glad to give it to you. Yours truly.

FRANK WILSON.

Dear Sir,

Mr. Ayer having been absent from home, your letter has not been answered.

We have not the name of the first prize dairies. They were picked up by our men in the Townships and we consider there are hundreds of dairies there about equal. Dairies about Durham and Cowansville, in Missisquoi county, or about Barnston, in Stanstead county, are making first class butter. We consider one of the best creameries in Canada to be that run by C. Turcot of Russeltown, Q., and the one that has taken prizes in New York for 2 years. The great difficulty in both creameries and dairies that we have to contend against in Canada is, that the cellars for storing butter are not good enough, and the places for manufacturing are not good enough either, they are too common buildings. The bottom principle of butter making is a cool even temperature, all the way through, from the time the milk is set until the butter is sold, and unless proper buildings and appliances are had for this, it is impossible to make fine butter. There is no section in Canada that needs education in this matter so much as that section lying between Richmond, in the Townships, and Rimouski below on the St. Lawrence, following all along on the line of the Grand Trunk and Intercolonial; this is a cool section of the country with good grass, or at least pastures where good grass should grow, and nothing is wanting but care and attention and proper appliances to make the very best of butter. Yours truly.

A. A. AYER & Co.

Mr. McFarlane, North Sutton, P. Q., took the 3rd prize for best cheese manufactured in Canada, at the last International Fair in New-York.

Hay and Hay.

I have, for a long time, doubted very much, whether a grass, that would not admit of autumn feeding, could be worth growing. Now, every inhabitant of the Eastern-Townships will admit that the *Timothy, Herds grass (Phleum Pratense)*, cannot be pastured after mowing. It starts late, flowers late, and is slow to start again after being once cut down. I can only attribute its popularity to the fact of its persistent adherence to the soil when once it has obtained possession of it. Nothing else would induce the farmers of the best parts of the Province of Quebec to grow it, for they must see (laziness apart) that the necessity of their meadows lying idle one-fourth of the season cannot be an advantage to them. I can conceive nothing more aggravating to the mind of a sensible man than to see six or eight inches of flush grass uselessly growing, with the consciousness that he dare not turn his cattle into it for fear of damaging the prospects of his next year's hay crop. That it is most injudicious to feed off "aftermath" of this grass is patent to any one who considers that, owing to the bulbous formation of the roots, cattle do not bite off, but tear up the mouthful they take in the grasp of the tongue. Long grass is a necessity to the easy pasturing of horned stock, as any one who has ever watched the manner in which a bullock feeds must acknowledge. Look at the greedy way in which a cow when first turned out to grass in the spring laps her tongue round the first tuft of grass that comes in her way, and twitches it off with a jerk, or cut, of her incisors! Then see, when from siccity, or too frequent grazing, the same pasture has become short, how dully, though persistently, the poor animal keeps on sadly cropping the short herbage—a feast to the sheep, the deer, or the horse, but a miserable torment of Tantalean promise to the unhappy brute whose ignorant proprietor neglects the clearest commands of nature. What can be said in excuse of the man who, with all the counsels of modern scientific information at his service, persists in neglecting the easily seen wants of his poor slave for fresh food, and ruthlessy remits her to the old worn out, breath-foiled, foot-stained pasture; ordure-covered with the refuse of so many weeks grazing, and stained with the tramping of extraneous feet. No wonder the pail takes small force to carry it to the dairy! No wonder by November the ribs show through the flesh, and the feeble beast, in spring, resenting her autumn starvation, can hardly be persuaded to rise from her duly couch, to wander her weary way to the better quarters of the more merciful New-Englander! Horned stock—*especially* cows—are not, believe me, animals to be played with. If they cannot be fed fully, some other stock should take their place. You never see in England, or in Scotland, bullocks feeding on sheep-pastures, or sheep nipping off the blades of the succulent grass that will ripen heavy oxen! No, everything has its place—cheese land for cheese—butter land for butter—grazing land for beef, and down-land for mutton.

And what does all this talk amount to? To this simply, as we have not the old meadows (some of them a thousand years old, as far as we can judge, by tradition, and the Church "terriers") of England, we should try to obtain the nearest approach to them in our power. remembering that the closer the bottom is, and the more numerous the species of grass are, the more free from extraction by frost the herbage will be, and the more sure the persistence of the crop to afford food during the changes of weather.

To return to my first point, viz. that Timothy is not what it is thought be, even as hay, take the following analysis of "Best Timothy hay," and "Best Clover hay".

Clover-Albuminoids,	13.5	fat	2.9 = 16.4
Timothy "	9.7	"	3.0 = 12.7

In other words the value of Clover hay is to the value of Timothy hay as 7.9 is to 7.0! And yet I read in the daily report of the Montreal Hay market, that "Best quality Timothy hay is worth $8 per 100 bundles of 15 lbs. each, and best quality Clover hay $4! (Star, Dec., 13th 1879) i. e. the nutritive value of Timothy hay is to the nutritive value of Clover hay as 8 is to 4! In England, Clover hay is always worth, in the market, one fifth more than meadow hay, and is always sought after, for feeding hunters, racers, and such like. There must be a reason for this, and the reason is simply this. in England, the treatment of Clover, when cut for hay, retains all the leaves, stalks, and flowers, in their full succulence, in Canada, the crop is allowed to stand until the plant has almost formed its seeds, and the leaves fall, the blossom is dead, and the stalk is an indigestible residuum of woody fibre. Not that the fault is in the crop, for I have never seen so superb a crop of clover in Britain as I saw in 1860 at Mr. John Yule's farm at Chambly—certainly 3½ tons per acre. The way of making is the error. It is allowed to stand too long—the idea is that it gains in weight by standing, where as the reverse is the truth. If, out of ten heads, five are in full bloom, then is the time to cut. Let it lie until the upper side is fairly wilted, not scorched—turn it, and let what was the under side wilt—then put it into cocks *well shaped, and, when fit, stack it out of doors; clover* hay, that will keep in a barn, without burning the whole place down, has been either cut too late, or made too much

Now compare a fair crop of Clover with one of Timothy.

Clover, first crop,	2 tons	Timothy, one crop,	1½ ton (?)
" second "	1½ "	And no grazing on aftermath!	
	3½		

Nutritive value of 3½ tons of Clover, as per analysis, 27 64
" " of 1½ " Timothy " " 10.05

In other words, one year's crop of Clover gives 2.7 times as much nutritive value as one year's crop of Timothy—of course the making of the crop into hay will be more expensive for the Clover—the aftermath grazing will go far to pay for it, besides I have very much underrated the yield of the Clover, which might fairly be put at 4 tons, for the two cuttings, on land that would yield 1½ ton of Timothy.

When we have got into the habit of sowing one sort of good seed it is difficult to see that anything is better. Now my own idea is that, as Timothy hardly shows itself the first year, never makes a good bottom, never endures close grazing, and is inferior in nutritive quality, that some *other grass should be sought for which will answer all these* desiderata. Is there such a grass? Yes, Orchard grass—Dactylis glomerata! The Author of "Among the grasses and clovers" says". "For the past six years I have had from fifty to one hundred and fifty species of grasses and clovers growing at the Michigan Agricultural College. Orchard grass (D G) has done *remarkably well* wherever I have seen it tried. Why it is not more used I can hardly imagine. Perhaps it is *because the grass grows too fast and flowers too soon for the farmer.* I belive that *Timothy is too highly estimated*, and is too often used exclusively in places where some others would thrive better."

The great English seedsmen, such the Gibbs, the Suttons, and the Carters, supply to their customers grass-seeds of all descriptions, suited to all sorts of soils, distinctively, and to all terms of years, from one to three, or for permanent pasture For they do not expect one or two sorts to fill up the top and bottom grass of meadow, or pasture, after the first year's crop is taken — and consider that, in England, the clover makes but a poor show the second year; in fact it generally dies out altogether at the end of the first season. But the artificial grasses, if properly selected, fill up the vacant places left by *the deceased clover, and, bit by bit, the natural grasses* of the

soil and climate exert their energies (torpid enough they lie, up to the due time) until one square foot of turf presents to the careful observer from one hundred to two hundred and fifty different plants of grasses, embracing frequently 20 different species. As to the effect upon the succeeding grain crop, enough has been said to show that the creeping roots of the *trefoils* afford it far more abundant food than can be expected from the bulbous roots of Timothy-grass.

Notes on Annual Fodder Plants.

PEARL MILLET.—Of this I sowed broad cast on 27th May last about one-sixth of an acre. The soil was a dry gravelly loam, but rather rich, and I also scattered broad cast upon it 3 pecks of phosphate, which was harrowed in.

The millet was long in starting into growth, and then began to grow very feebly, so much so that barn grass and other weeds began to grow, as though they would choke it out. I therefore mowed it the end of July. It was then about 15 inches in height. About the last of September I harvested the crop. It weighed somewhat under 200 lbs. dry weight, or at the rate of about ½ a ton to the acre,—of which not much more than half was millet.—It was mixed with hay and fed to the horses.

Now what was the cause of failure? The soil was rich enough; it was the best part of my fodder corn field. I might have supposed it to have been too dry, but for our unusual rains. The seed seemed light and lifeless. And on this account I do not consider that the Pearl millet is yet proved useless in our climate. At Como, on the Ottawa, it was tried by a friend, on rather rich, dry, gravelly soil. It averaged in height about 2 feet. The seed came from United-States, from the firm from which I bought mine.

CHINA CORN, from B. K. Bliss, is a plant of sorghum type which grows about 5 feet in height. The plant is about as leafy as ordinary corn, but its stalk is pithy and without any sweetness. It bears on top a large bunch of seed, which bends down and gives it a singular appearance: but the seed was not ripe when cut about October 10th. The plant is bulky enough to be useful, but it is, in stalk, so flavorless, and so wanting in nourishment, that its use is very doubtful.

EGYPTIAN CORN is so like the above that I could see no difference.

MINESOTA AMBER SUGAR CANE. — Of this, I grew about one-sixth of an acre. It was planted like common corn except that 6 or 8 canes were grown in each hill. It might be planted much closer, say in drills 3 feet apart. It grew to the height of 10 feet and more. It is not leafy, but bears on top a bunch of seed, which I believe would ripen pretty well in most seasons. The stalk is sweet, in fact as sweet as a sugar stick, and full of sap; but outside of the pith is a rind, as hard as that upon the canes which our schoolmasters used so rigorously some years ago. The cane was chopped into short pieces, and eaten by the cows along with other food; but if again planting for fodder purposes I would sow as thick as oats, and mow just before the outer part of the cane hardens.

So heavy, and so full of sweet juice is this cane, that my thinly planted crop weighed 5 or 6 tons per acre. — The culture of this plant for sugar should be certainly be tried.

THEOSINTE.—This is a gigantic grass of central Asia; one plant of which is said to feed a yoke of oxen (or perhaps one ox) for a day. With me it had good care, but it grew only to the height of 2 feet, and was a failure, whether from want of heat or moisture I know not.

WESTERN CORN has been that on which I have mainly fed my cattle during winter, a crop which I would not forego for anything. The SANFORD SWEET I planted as a fodder plant 2 years ago. It gave me a smaller bulk than I expected, but it was so deliciously sweet as to be well worthy of culture. I have also seen a Corn, a foot higher than our common yellow, and sweet both in grain and stalk; my only doubt being its sureness of ripening. This supplies a great want,—a corn heavy in growth, and so sweet in stalk, that the stalk will make good forage after it has ripened its crop. Until I find this I will stick to my old friend, Western Corn.

C. G.

Abbottsford.

SMITHFIELD CLUB—1879.

A most successful show, particularly in the Cattle classes. For the future, steers under two years old will be shown; so we shall easily see if the Shorthorns exceed all their competitors in early maturity, the grand thing after all, as much, barring such wonders as the Hereford, Leonora, as they do in rapid feeding qualities.

The improvement however most notable in the exhibition to a thoughtful mind was in the Lambs—the Hampshire-Downs, 9 months old, were laid, by thorough judges, to weigh 32 lbs. a quarter. What a contrast to the Downs of my younger days when 72 lbs. was considered a good weight for a two years old wether!

The admission of the blood-red, heavy, Sussex breed so useful an animal to the butcher, but, formerly most faultily put together—hollow behind the shoulder, and patchy all over, carrying most of its meat forward, but good along the loin, and frequently weighing from 1400 lbs. to 1600 lbs. the four quarters—has had the effect of improving in a wonderful degree the allied race of Devons.

There can be no doubt that the Sussex and Devons are one and the same thing, but the former is of a stronger and coarser strain than the latter. The Devons are now much larger, and the Sussex more refined, early maturity having been gained by selection of strains—the Sussex men have always looked well after pedigree—so that, comparing the Sussex with the three other breeds, we find that they made more meat per month than their rivals, which *ceteris paribus* is the principal thing.

The following is a table of weights, age, and monthly increase of the four breeds shown at Islington last month

Breed and No.	Average age. yrs.	mos.	Average Weight. cwt	qr.	lb.	Monthly increase. lb.
Devons.						
No. 7	3	2	10	3	0	—
" 9	3	3	14	2	16	29
" 6	4		16			17
Herefords.						
No. 8	2	4½	15			—
" 12	3	3¼	18			31
" 4	4	1½	19	1	14	15
Shorthorns.						
No. 7	2	2½	15			—
" 15	3	1½	18	1		35
" 8	4		21			30
Sussex.						
No. 7	2	2½	13	2		—
" 6	3	1¼	17	2		41
" 4	3	8½	19	3	20	40

The foregoing table needs explanation, but I will try to make it clear. Seven Devon steers averaged rather more than 2 years and 2 months apiece in age, and 10¼ cwt. in weight. Nine Devons, 3 years and 3 months old apiece, must, supposing them to have been as heavy as the younger class at the same age, have increased 29 lbs. apiece in weight per month, weighing now 14 cwt. 3 qr. 16 lbs. each. So the Hereford steers weighed 15 cwt. each at 2 years 4½ months old, and afterwards grew 31 lbs. apiece per month, weighing

18 cwt. at 3 years 3½ months old. The oldest oxen increased only 15 lbs. per month in the Hereford breed, 17 lbs. per month in the Devon breed, 30 lbs. per month in the Shorthorn breed, but 40 lbs. per month in the Sussex breed. The Sussex breed seem to have been uncommonly good throughout, for the younger class are as young, and the older classes are much younger than those of any other breed, and the rate of growth is the most rapid of them all. They are first rate beasts of labour, but huge feeders.

The weight of some of the sheep was extraordinary, viz: Mr. Close's pen of 3 Lincoln ewes weighed 1109 pounds; Mr. Jacob's Cotswolds next, but 33 lbs. less.

Mr. Morrison, as usual, beat every one in the Hampshire Down classes; his 3 wethers weighing 878 lbs., and his lambs, 9 months and 1 week old, no less than 674 lbs.

Shropshire Downs were not good; Lord Chesham's three scaling 4 lbs. less than the first prize South Downs.

It is to be noted that, in the Cross-bred cattle classes, five-sixths were Shorthorn and Scotch Polled mixed.

I have just heard that a 15 months old cross-bred Shorthorn and country heifer was sold at Thornbury market, Gloucestershire, by one of my brother's tenants for £30 15— now, supposing the animal to have brought the top price of 6s. per stone of 8 lbs., she must have weighed 630 lbs. of meat, which gives a monthly rate of increase of 42 lbs. from birth; this beats even the Sussex beasts mentioned above.

ARTHUR R. JENNER FUST.

THE CHAMPION POTATO.

There is no doubt at all that a potato has been invented which unites in itself all the desirable qualities a potato can possess. The *Champion*, as this new sort is called, seems to be an enormous cropper, first quality in flavour and appearance, and hardly suffers at all from the disease. The English Agricultural Journals are full of its praises, not purchased puffs, but honest farmers' praises. One fault, and one only, it seems to have, the haulm grows from 4 feet to 6 feet long on richly manured soils, and this indicates wide planting some even recommending 40 inches between the rows; I should like to try alternate rows, with 27 inches drills, of this kind and Early Rose.

Will not some of our seedsmen import this sort in time for spring setting. I don't believe there is any humbug about it at all, and I see they are quoted in the London markets at from 20s to 25s. per ton higher than any other sorts. Kerr and Frothingham, Dumfries - N. B. will take orders for them, but I dare say Mr Evans, of McGill Street, will be in the field before May. The Early Rose has been a most successful introduction and I have, though of a most sceptical turn of mind, immense faith in this new acquisition.

I append extracts from *The Scotsman* on the Scotch harvest of 1879.

Mid-Lothian—Potatoes, mostly Regents, not half an average crop, money return less than that of 1878, by £10 per acre.

Fifeshire—Potatoes (large proportion of *Champions*) small crop in quantity, but sound; money return less than that of 1879 by £4 per acre.

Dumfries, Kirkcudbright, and Wigton, produce of potatoes no larger than in 1877, except *where a few Champions have been planted.*

In Perthshire, and Forfarshire, farmers are being greatly benefited by their sales of *Champion* potatoes the profits on which will do much to counterbalance the bad yield of the other crops, fields of this variety having in many cases sold for £25 to £35 per acre, while Regents in adjoining fields have only brought £8 to £12.—A. R. J. F.

Potatoe Sets. — We have, for many years, planted potatoe sets with one eye each, and always with favorable results. Now that seed is scarce we would advise all our readers to do likewise. They will save seed and obtain a more uniform crop of good sized potatoes. We plant at from 27 to 36 inches between the rows, according to length of bine: the longer the bine, the greater the distance between the rows. We plant the cut sets from 9 to 10 inches apart, putting the eye invariably downwards, in light soils pressing it down into the manure which is spread in the drills as the planting proceeds, so that it may be spread and covered in the shortest possible time. In dry land and dry weather, manure dries up in a remarkably short time, and we have known the crop to be much reduced when, by accident, the drills have remained open for a few hours only after manure had been spread.

We have found no inconvenience from the cutting of seed potatoes three or four days before planting provided the sets be covered with plaster, wood ashes, or slacked lime; but the heap of cut sets should never exceed 18 inches in height. In cutting the potatoes, the root end should be removed and thrown aside; than each eye is cut until the crown eyes are reached. Each one of these, although quite small, is sure to grow. These might be planted separately, as they grow quicker and give an earlies crop.

HEREFORD.

Mr. Edwards' cow Leonora, whose portrait we give in this number of the Journal, has had a career of unexampled success in the showyard. At Birmingham she won £100 as the best Hereford, and, at the Smithfield Club show, the first prize for Hereford cows; besides, last year 1879, as a breeding animal, sweeping off all the prizes at the principal exhibitions. She is supposed to be the most perfect model of her race ever bred; and her triumphs will probably extend over another year, as she shows no signs of falling off.

AN ITALIAN BULL.

As Virgil has it;

Optima torvi
Formâ Bovis, cui turpe caput, cui plurima cervix,
Et crurum tenus a mento palearia pendent;
Tum longo nullus lateri modus; omnia magna,
Pes etiam; et camuris hirtæ sub cornibus aures.

Which, being interpreted, means;

The Bull
With coarse, rough neck, and shaggy, virile head;
His ample dew-lap, ponderous, sweeps the ground:
Long sided; double-jointed; feet, too, large;
His mossy ears and huge-curved horns outspring
From either side the front, and awe the herd.
From such a sire derived, the well-born race
Will dread nor winter's frost, nor summer's heat.

A. R. J. F.

VETERINARY DEPARTMENT.

Under the direction of D. McEachran, F. R. C. V. S., Principal of the Montreal Veterinary College, and Inspector of Stock for the Canadian Government.

Feeding Cattle.

As remarked in last issue, certain knowledge of the nutritive value of different kinds of food is of great importance to the feeder of stock, to enable him economically to select and use that food which will give the most return in the form of flesh. To enable our readers to judge at a glance of the relative values, I take the liberty of transferring entire the following table from the December number of the National Live Stock Journal of Chicago, and would refer our readers to a valuable series of articles in that Journal on Feeding Cattle by "Alimentation."

Average Composition, Digestibility, and Money Value of Feeding Stuffs, as given by Dr. Wolf, for Germany, for 1878, except a few made at the Connecticut experimental station.

	Water.	Ash.	Albuminoids.	Crude Fibre.	Carbo-hydrates.	Fat.	Digestible Matters. Albuminoids.	Digestible Matters. Carbo-hydrates	Digestible Matters. Fat.	Nutritive Ratio	Money Value. Dollars per 100 lbs.	Money Value. Comprsn. with Meadow Hay.=1
Meadow hay, inferior	14.3	5.0	7.5	33.5	38.2	1 5	3.4	34 9	0.5	10.6	0 48	0.74
" " better	14.3	5.4	9.2	29.2	39.7	2.0	4.6	36.4	0.6	8 3	0.55	0.86
" " average	14.3	6.2	9.7	26.3	41.4	2 5	5 4	41.0	1.0	8 0	0 64	1 00
" " very good	15.0	7.0	11.7	21.9	41.6	2 8	7 4	41.7	1.3	6.1	0.74	1.17
" " extra	16.0	7.7	13.5	19.3	40.4	3.0	9.2	42.8	1.5	5 1	0 84	1.32
Clover hay, average	16.0	5.3	12.3	26.0	38 2	2 2	7.0	38.1	1.2	5 9	0.69	1 08
" " best	16.5	7.0	15.3	22.2	35.8	3.2	10.7	37.6	2.1	4.0	0 88	1.39
Timothy hay	14.1	4.5	9.7	22.7	45.8	3.0	5 8	43.4	1.4	8 1	0 69	1 09
Hungarian hay	13.4	5.7	10.8	29.4	38 5	2 2	6.1	41 0	0 9	7 1	0.66	1 04
Rye straw	14.3	4.1	3.0	41.0	3. 3	1 3	0.8	36.5	0.4	46 9	0.35	0 55
Oat straw	14.3	4.0	4.0	39.5	36.2	2.0	1.4	40.1	0 7	29 9	0 44	0.69
Rich pasture grass	78.2	2.2	4.5	4.0	10.1	1.0	3.4	10 9	0 6	3 €	0.27	0.42
Average meadow grass, fresh	70.0	2.1	3.4	10.1	13.4	1 0	1.9	14.2	0 5	8.1	0.23	0.36
Green maize, German	85.0	1.0	1.2	4.7	7.6	0.5	0.7	7.4	0.2	11.3	0.10	0.16
" " Prof. Johnson	86.0	0.8	0.8	4.8	7 3	0 3	0.6	8.3	0 2	14.4	0.11	0.17
Cured maize fodder (Prof. S. W. Johnson)	27.3	4.2	4.4	25.0	37 9	1.3	3.2	43.4	1.0	14 4	0 57	0.91
Potatoes	75.0	0.9	2.1	1.1	20.7	0.2	2.1	21,8	0.2	10 6	0 29	0.46
Mangolds	88.0	0.8	1.1	0.9	9 1	0.1	1.1	10.0	0 1	9.3	0.14	0.22
Ruta bagas	87.0	1.0	1.3	1.1	9.5	0.1	1.3	10 6	0.1	8.3	0.15	0 24
Sugar beet	81.5	0.7	1.0	1.3	15.4	0.1	1.0	16 7	0 1	17 0	0 19	0 30
Maize, German	14.4	1.5	10.0	5.5	62 1	6 5	8 4	60.6	4 8	8 6	1 10	1 73
Maize meal, American (by Prof. S. W. Johnson)	12.9	1.2	8.7	1.8	71 9	3.5	7.3	68 3	2 6	10 2	1 04	1 69
Oats	14.3	2.7	12.0	9.3	55 7	6 0	9.0	13.3	4 7	6 1	0.97	1 53
Malt sprouts	10.1	7.2	24.3	14.3	42.1	2 1	19 4	45 0	1 7	2.5	1.31	2 06
Wheat bran, coarse	12.9	6.6	15.0	10.1	52.2	3.2	12.6	42 6	2 6	3 9	1.01	1 63
" " fine	13.1	5.4	14.0	8.7	55.0	3.8	11.8	44 3	3 0	4 4	1.03	1 64
Middlings	11.5	3.0	13.9	4.8	63.5	3 3	10 8	54 0	2 9	5 7	1 07	1 68
Cotton seed cake, decorticated	11.2	7.6	38.8	9.2	19.5	13.7	31.0	18 3	12.3	1 6	2 05	3 22
Fish scrap, by Goodale's process (Prof Johnson)	11.5	.....	64.0	.....	.....	4.6	57.6	.....	4.1	0.2	2.67	4.17
Do. dry ground (Prof. Johnson)	11.7	.....	51.5	.....	.. ..	8.1	46 4	... ..	6 2	0 3	2 28	3 56

The following analyses are also by Wolf and Knap, as printed in "How Crops Grow," to which we have added the "digestible matters," "nutritive ratio," etc.

Swedish, or Alsike clover hay	16.7	8.3	15.3	30.5	29.2	3.3	10.7	33 7	2.3	3 7	0 80	1 25
" Clover, ripe	16.7	5.0	10.2	45.0	23 1	2.2	6.2	30 4	1 6	5 6	0.60	0 93
Lucerne hay, young	16.7	8.7	19.7	22.0	32 9	3 3	13.7	36.°	2.3	3 1	0 97	1.51
" " in blossom	16.7	6.4	14.4	40.0	22 5	2.5	8.7	28 0	1 7	3.7	0 70	1.09
Vetches, dried in blossom	16.7	8.3	14.2	25.5	35 3	2 5	8 6	34 5	1.7	4.5	0.76	1.18
Peas " "	16.7	7.0	14.3	25.2	36 8	2 6	8 7	35 6	1 8	4 6	0 77	1.20
Italian rye grass "	14.3	7.8	8.7	16.9	51 4	2 8	5.8	40 8	2.0	7 6	0.70	1.09
Early meadow grass (*Poa annua*) in blossom	14.3	2.4	10.1	25.9	47.2	2 9	6.0	42 5	2 1	7 9	0 74	1.16
Orchard grass, in blossom	14.3	4.6	11.6	28.9	40 7	2.7	6 9	40 3	1 9	6 5	0.74	1.16
Sweet scented Vernal grass, in blossom	14.3	5.4	8.9	31.2	40 2	2 9	5 9	40.1	2.1	7 6	0.70	1.09
Blue grass, or June grass (*Poa pratensis*) in blossom	14.3	5.1	8.9	32.6	39.1	2 3	5 9	40.0	1.6	7.5	0 68	1.06
Linseed oil cake	11.5	7.9	28.3	10.0	32.3	10 0	23 7	35.15	9 0	2 4	1.73	2.70

The same able writer further adds that, "Every element of the animal body must be contained in the food given," and he values the food from the proportion of the three classess of digestible matters it contains, that is the albuminoids, carbo hydrates, and fat. He furnishes the following table of comparisons between the most common kinds of food for cattle, with regard to the chemical composition, digestibility, and money value, according to the German standard, for 2, 000 lbs. or an American ton of clover hay, meadow hay, corn-fodder, oat-straw, oil-cake, wheat bran, corn-meal, and oats.

	In 100 lbs.	Digestible.	In 2,000 lbs.	Money value.
Clover hay.				
Albumminoids	15 3	10.7	214 lbs.	$ 9.24
Carbo-hydrates	35.8	37.6	752 "	6.76
Crude fibre	22.2			
Fat	3.2	2.1	42 "	1.82
			1008 lbs.	$17.82

Average meadow hay.				
Albumminoids	9.7	5.4	108 lbs.	$ 4 68
Carbo-hydrates	41.6	41.0	820 "	2.38
Crude fibre	21.9			
Fat	2.5	1.0	20 "	.87
			948 lbs.	$12.93
Corn fodder.				
Albuminoids	4 4	3 2	66 "	$ 2.86
Carbo hydrates	37.9	43.4	868 "	7.81
Crude fibre	25.0			
Fat	1 3	1 0	20 "	.87
			954 lbs.	$11.54
Oat straw.				
Albuminoids	4 0	1.4	28 "	$ 1.21
Carbo-hydrates	36 2	40 1	802 "	7.21
Crude fibre	39 5			
Fat	2 0	0.7	14 "	.61
			844 lbs.	$ 9.03
Oil cake.				
Albuminoids	28 3	23.77	475 "	$19 00
Carbo-hydrates	32.3	35 15	703 "	6.32
Crude fibre	10.0			
Fat	10.0	9.0	180 "	7 80
			1358 lbs.	$33.12

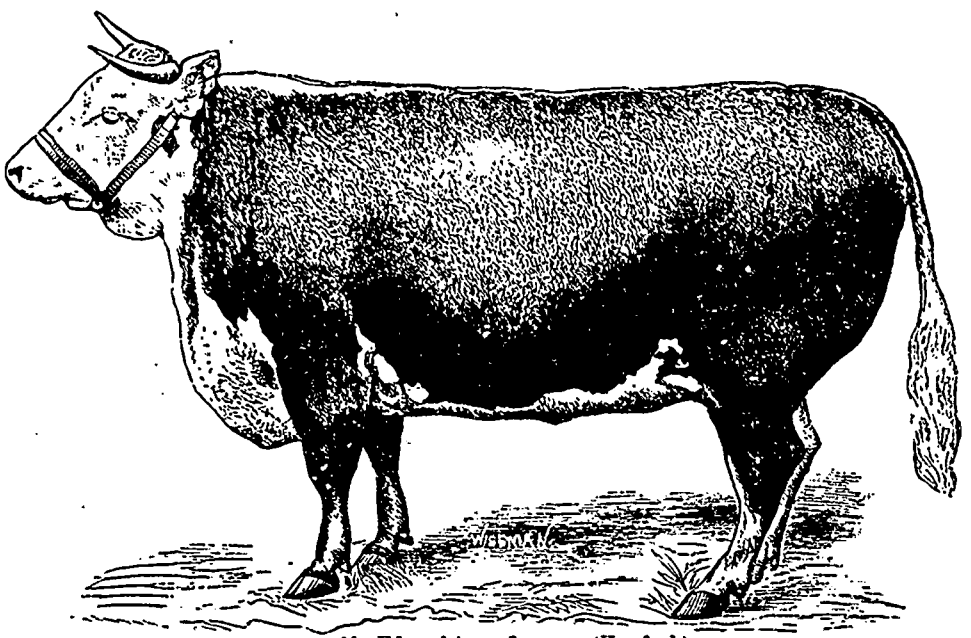
Wheat bran.				
Albuminoids	15 0	12.6	252 lbs.	$10.92
Carbo-hydrates	52 2	42 6	852 "	7.67
Crude fibre	10 1			
Fat	3 2	2 6	52 "	2.25
			1156 lbs.	$20.84
Corn-meal.				
Albuminoids	10.0	8.4	168 "	$ 7.28
Carbo-hydrates	62 1	60.6	1212 "	10.90
Crude fibre	5.5			
Fat	6.5	4.8	96 "	4.16
			1476 lbs.	$22.34
Oats.				
Albuminoids	12.0	9.0	180 "	$ 7.80
Carbo-hydrates	55.0	43.0	860 "	7.74
Crude fibre	9 3			
Fat	6.5	4.7	94 "	4.07
			1134 lbs.	$19.61

These tables will furnish food for reflection to many of our readers, from which useful information may be deduced.

As many of our readers are considering the question of feeding cattle most economically with the means at their disposal, I have endeavoured to obtain the practice of those who, with the advantages of education and practical experience, prosecute the fattening of cattle profitably.

The following letter from Mr. James A. Cochrane, of Hillhurst, Compton, will beread with interest. He says "We are now feeding to oxen 3 lbs. per day of a mixture of equal measures of oil-cake and cotton-seed-meal, about 60 lbs swedish turnips, and hay *ad libitum*, hay fed five times a day.

We shall decrease the quantity of roots, (because the supply is limited), and add 3 lbs. of maize and barley-meal next month, and then, as spring advances, increase the meal and cake to 8 or 10 lbs.



Mr. Edwards' cow Leonora, (Hereford)

With steers (3 years old) we are trying cotton-seed meal alone, 2 quarts, about 30 lbs. swedes and hay. To a few two years old we are giving a mixture of cakes, the same quantity. As a rule, the proportion of flesh formers are too low, consequently the surplus, if carbo-hydrates, is comparatively wasted, whereas, if albuminoids are in excess, the animal will use them to a certain extent as fat formers, and what is voided enriches the manure (if the liquid be saved).

This explains the high value of cotton-seed cake meal as compared with corn-meal which has too high a proportion of carbo-hydrates even for fattening cattle, unless when fed with prime clover hay."

As many of our readers are anxious to commence the feeding of cattle, the above practice of one of our most noted breeding and feeding farms, will be valuable. Roots are almost indispensable to keep the bowels regular, facilitate digestion, and increase the bulk so as to allow of the free use of concentrated nutriment.

Where no roots are grown, we would recommend the cutting of the hay and mixture of linseed cake, cotton-seed-cake, or corn meal, as above; the addition of bran to the mass will tend to keep the bowels open, as bran is a stimulant of the gastric and intestinal secretions.

It is to be regretted that a duty should be thought necessary on corn, as corn in this country is the natural feeding stuff, and, were the duty taken off, large quantities would be imported for feeding purposes. Linseed cake is expensive and in some respects, inferior to cotton-seed cake which is relatively much cheaper, and we have the experience of several cattle feeders to show that it is quite equal in some respects and superior in others, to linseed cake.

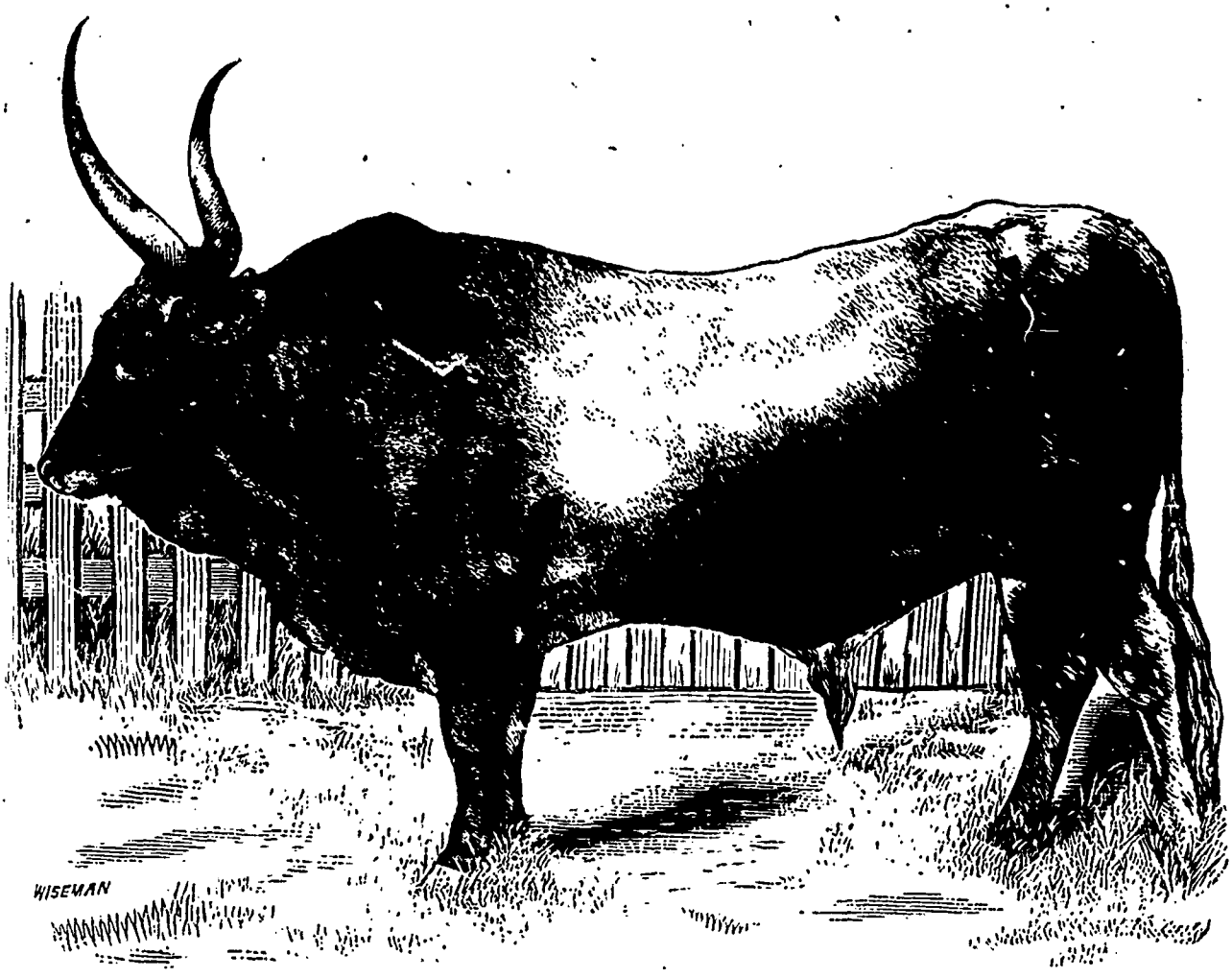
Of no small importance to the feeder of stock is the comfort of the byre. Cold and discomfort are prejudicial to fattening, warmth and comfort tend to lessen the consumption of food, and favour the more through utilization of the materials supplied for nutrient purposes.

Stock Feeding by Small Farmers.

The following article, from the National Live Stock Journal applies equally to Canada as to the United States. The gradual opening up of the cattle trade with England, offers more and more inducements for small farmers to feed a few animals, and by this feeding of the two, four, six, or ten, by our small farmers the large aggregate of 100,000 animals fit for exportation, can easily be reached for the Dominion—which not only consume surplus feed, and increase the manure

heap, but return handsome profits, leaving in the hands of our farmers at least $6,000,000. This can easily be accomplished by our farmers, who study their own interests and improve their stock by short horn blood, and give their attention to the breeding and feeding of stock. No fears need be entertained for a ready market, it will be a long time ere the supply will equal the demand for healthy Canadian stock.

About all the farmers in this country annually fatten at least a few pigs. But very many farmers who have but 40, or 80, or 100 acres feel they cannot successfully compete in cattle feeding with the large farmers; and, unquestionably, the farmer who has a lot of 50 or 100 steers has some marked advantages in caring for and feeding them over the man with one, or two, or a half dozen. The work can often be done to much better advantage, and in much less time, in proportion to number, with the large lot. When ready for market the owner of the half-dozen car-loads of steers can choose his market, and receive reasonable shipping rates



An Italian Bull.

while the man with but a few is dependent on his local markets or neighboring dealers, or, if he attempt to ship at all, he must pay a higher rate.

But, as in most cases, this question has two sides. The advantages are not all in favor of the more extensive dealer. Very often the stock of the small farmer will receive better care and give a better return than those in larger lots. Oftentimes, too, a large part of what they eat would be wasted were it not for them. The pasture may often carry an extra steer or two, and yet give grass enough for the cows, and so of the stock field or the hog stock. What is of even more importance, as affecting the profit, is, that while the labor of feeding the small number may really be greater in proportion than in the case of a larger number, it really is often done at less cost, because the work is just so much done in addition to what would otherwise be accomplished. A farmer will add the feeding of a half-dozen steers to his usual "chores," and do the work without conscious fatigue or loss of time needed for other labor. The large stock feeder must "make a business" of his work, either for himself or for a hired laborer. This has its good results, but it also causes a direct outlay. Another very important consideration is found in the fact that the average farmer can give much better attention, in the way of shelter and protection and also in variety of food, to his half-dozen steers—thereby securing a larger percentage of gain to food consumed—than is often practicable for the great feeder who numbers his cattle by the hundreds.

These points, at first flash, may not seem of no importance, but they are well worth thinking about by those who have

but small places Observation will convince us that, in a good many cases, the reason for superior success by one such farmer over that reached by his neighbor is, that he is not content to stop with his ordinary, "regular" work, but adds to this a number of little things, from each of which he makes some profit.

Nor is it always that the home market is not a good one. At the worst, it is easily reached, and can be watched so as to receive the benefit of a rise in prices.

The price of a half-dozen good steers will make a very handsome addition to the yearly receipts of a small farmer, and in the large majority of cases we believe it will be a considerably larger sum than would have been obtained from that part of their food which would have been sold had the steers not been kept.

POULTRY DEPARTMENT.

Under the direction of Dr Andres, Beaver Hall, Montreal.

Dark Brahmas.

DISQUALIFICATIONS.

Birds not matching in the show pen; comb falling over to either side; crooked backs; wry tails; twisted feathers in wings; leg not feathered on the outside and to the extremities of the outer toes; vulture hocks; cocks not weighing nine pounds; hens not weighing seven and a half pounds; cockerels not weighing seven and a half pounds; pullets not weighing six pounds.

THE COCK.

Head.—Broad, of medium length, and slightly projecting over the eyes; color of plumage, silvery-white; beak, very stout and curved, and, in color, dark horn, the sides being yellow; eyes, large and bright.

Comb.—Bright red, pea, small, lower in front and rear than in centre; firm on the head, without falling over to either side, and distinctly divided, having the appearance of three small combs joined together, the largest and highest in the middle, and each part slightly and evenly serrated.

Wattles and *Ear-lobes.*—Wattles, brilliant red, of medium length and well rounded; ear-lobes, brilliant red, somewhat pendant, and equal in length with the wattles.

Neck.—Of medium length and well arched; the hackle feathers, silvery-white and abundant, with a distinct black stripe down the centre which tapers to a point at the extremity of each feather, and flowing well over the shoulders.

Back.—Broad, and flat between the shoulders, the length to be in harmony with the size and symmetry of the bird, color, silvery white, saddle feathers, abundant and long, and, in color silvery-white, with a black stripe down the centre, similar to that of the neck-hackle.

Breast and *Body* — Breast, full, broad and deep, and carried well forward, in color, either black, or black slightly and evenly mottled with white; body, broad and deep, and the plumage of the under part black

Wings —Small, the primaries well folded under the secondaries, and the points well covered by the saddle feathers; color of shoulder-covers and wing-bows, silvery-white; color of wing-covers, a metallic or greenish black, forming a broad and well defined bar across the wings; the primaries black, or black with a narrow edging of white on the outer web; secondaries, white on the outer web, and black on the inner web, with a large greenish black spot on the end of each feather.

Tail. — Small, carried tolerably upright and well spread, the two sickle feathers spreading out laterally, and in length not greatly exceeding the main tail-feathers, color, black, the greater covers, a rich greenish black, the lesser covers, a rich greenish black edged with white.

Fluff. — Abundant and soft, giving the bird a broad, deep appearance behind, color, black, or black slightly frosted with white.

Legs and *Toes.*—Thighs, large and strong and abundantly covered with soft feathers, color, black, or black slightly frosted with white; shanks, strong, and rather large, and standing well apart; of medium length and well feathered on the outside, and to the extremities of the outer toes; color, scales yellow, the insides of the shanks a rich, reddish yellow; the feathering, black, or black slightly mottled with white; toes, straight and strong, the outer and middle toes being feathered; color of feathers, black, or black mottled with white.

Carriage.—Bold and attractive.

THE HEN.

Head —Broad, of medium length, and slightly projecting over the eyes color, silvery-grey; beak, curved and very stout, color, horn; eyes, full and bright.

Comb.—Very small and low, placed well in front of the head, having the appearance of three very small combs pressed together, the largest in the middle, and delicately serrated; color, rich brilliant red.

Wattles and *Ear-lobes.*—Wattles, exceedingly small, and ear-lobes well developed; color, rich red.

Neck. — Well arched, and of medium length, with the feathers reaching well down over the shoulders; color, silvery white, each feather distinctly striped with black the edge of the black running nearly parallel with the edge of the feather.

Back. — Broad, and flat between the shoulders, with an abundance of soft, broad feathers rising to the tail; the length to be in harmony with the size and symmetrical proportions of the bird; color, grayish-white ground, with very dark and distinct pencilling throughout the outlines corresponding well with the outlines of the feather.

Breast and *Body,*—Breast, deep, broad and prominent; color, greyish-white ground very distinct, and dark pencilling throughout the outlines nearly corresponding with the outlines of the feather, and reaching well up to the throat, and free from white shafts in the feathers; body, broad and deep; color, same as the breast, the pencilling reaching well down upon the thighs.

Wings. — Small, the primaries well folded under the secondaries, the points being covered by an abundance of soft feathers and fluff, and the bows well covered by the breast-feathers; color of shoulders and wing-covers, similar to that of the body, but generally more distinct in the character of the pencilling, color of primaries, black, with narrow pencilling on the outer edge secondaries, black on the inner web, and pencilled on the outer web.

Tail.—Small, carried tolerably upright and almost hidden in the soft rump feathers, color, black, the upper feathers and covers pencilled.

Fluff — Very abundant and soft giving the bird a broad and deep appearance behind, color, same shade of gray as the body.

Legs and *Toes* — Legs, strong, standing well apart, the thighs well covered with soft feathers, and the shanks well feathered down the outer side; color of feathering, same as the body; color of scales, yellow or dusky yellow; toes, straight and strong, the outer and middle toes being feathered; color of feathers, same as that of the shank feathering.

Carriage.—Low, in comparison with that of the cock.

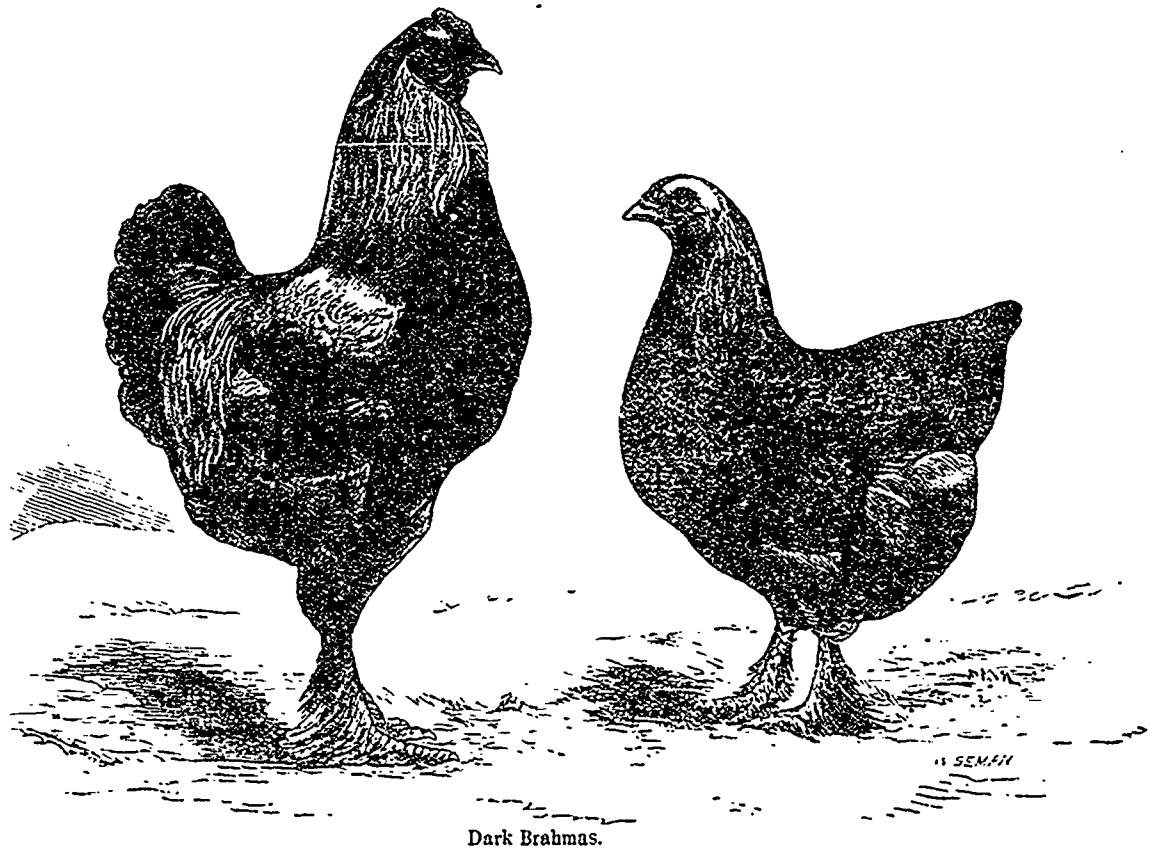
Points in Dark Brahma:

Symmetry	10
Size and Weight	13
Condition	8
Head	5
Comb	8
Ear-lobes and Wattles	5
Neck	8
Back	7
Breast and body	16
Wings	8
Tail	6
Fluff	5
Legs and Toes	7
	100

Comparison in size and weight, 2 points to the pound.

PEDIGREE BREEDING.

In previous remarks on this subject we have hinted that animals or fowls *can* be bred so as to produce their like with a certainty beginners have little idea of in many cases, while in others they absurdly underrate the difficulty of it. We pointed out that the means to this certainty were to accumulate into the desired direction all the tendencies to transmission of many generations, and never losing any step gained by going off into some other direction or after some other point (which we saw to be the common practice), inasmuch as such a course must undo a great deal of whatever had been done, though not necessarily undo all. But the difficulty we have now to consider is, how to harmonise the claims of various points or properties with this principle, so as eventually to obtain them all, and especially so as to avoid those evils of in-breeding to which we referred a week ago.



Dark Brahmas.

In attempting a few remarks which may be of assistance to others in these respects, we shall base them upon our actual experience with the Dark Brahmas As we stated at the outset, we believe the same principles will hold good in other departments; but we desire to proceed upon safe ground, and therefore give our conclusions simply as those we have reached by experience, or rather, perhaps, *tested* them thus; since we had reached them beforehand by the considerations already presented, and others of a kindred character. We believed we should find them sound, and we did so; and it is hardly too much to say that the blood of the strain, formed in the manner we shall indicate, now runs in the veins of nearly every winning bird of the present day.

We began, then, after having for a year or two wasted time in proceedings of a by no means satisfactory character, to consider the various points of the fowl, and what experience had taught us was the comparative difficulty in attaining them. The first thing to appear was, that the plumage of the Dark Brahma varied more than that of many other breeds in the different sexes, that of the hen being far more difficult to obtain good than that of the cock. We fastened our attention therefore, chiefly upon the hen to begin with; just as in another breed, for the very same reasons, we might, on the contrary first consider the cock. In the hen we found that the grand difficulty was to get and to keep good pencilling, especially *up the breast* and under the throat; while the second most difficult point was the comb; third, the size; and afterwards, shape and leg feather. These last are, in this breed at least, most easily modified by a single cross; so that, for instance, even almost bare legs will produce grandly-

feathered stock with a hocked male parent, and even size can be restored, without any great difficulty, to as great degree as is desirable; but the others are hard, and the pencilling *very* hard to get—at least they were; for the number of well-pencilled birds now to be found, which will breed the same, and which have been formed by this very method, did not at that time exist. Now we think any reader who has carefully followed us will see the conclusion at which we arrived, before we state it. It was to fasten attention on pencilling, and *keep* it there—especially, and above all, *breast*-pencilling—paying such heed to other points as might be, but *never* losing sight of this. In the main, we found all our expectations from this course justified; but, without recording all our mistakes—for in details we made such, and found reason to change our mode of procedure—we will briefly indicate the mode in which we should now proceed from the commencement, had we to begin an entirely new yard.

We would provide at the very outset at least two, and if possible more pens or yards, in order to avoid any necessity for a cross until the new strain was *thoroughly* established. This is all-important to every one who means to have any strain or stock of his own, not only for the general reasons already given, but to avoid the danger of dropping, *unknown*, the "link in the succession," which we have seen to be so important. Thus, supposing we are at any particular time paying great attention to a small and neat comb, and some evident fault in another point to have appeared in the season's breeding To correct this fault a cross with another family is perhaps necessary; and though such a bird may be selected from a strange yard with an exquisite comb, from which it is supposed the course of breeding for combs is not interrupted while correcting the other fault, it may just as likely be the case that he is almost the *only* good-combed bird in a yard of coarse-combed ones, and in that case he spoils all. More even than this. There is a tendency in all animals, as Mr. Darwin has clearly shown, to revert or "throw back" to *long lost* characters, and this tendency is developed by *crossing*. Supposing then two strains of Brahmas to have been carefully bred, but one to have bred first for pencilling and afterwards for combs, in the manner to be presently described, while the other was bred first for comb and afterwards for pencilling; the result of crossing two such strains would be many chickens which "threw back" to the first or faulty points of *both!* Hence it is important that the cross should not only be good, and carefully bred, but the produce of a similar *course* of breeding to the yard which is crossed, if such undesirable results are to be avoided; and we need not point out that the only sure way of securing this is for the same breeder to have bred both, when he can tell pretty nearly the latent tendencies of each. It is here, we suspect, that Shorthorn breeders find those evils of crossing which Mr Booth spoke of to Mr. Carr, as referred to last week. So good a breeder would never have chosen any but fine animals, carefully bred. In their way they were probably as good as his own; but they were not the product of the same *course* of breeding, and hence their crossing brought out the latent, far-back faults of both.

It is in this way also that we secure the advantages of an intelligent plan, or a definite object steadily pursued, without the evils of in-breeding. If three strains have been started from three nearly allied and similar hens, and the same plan of breeding pursued with all, the advantages of a cross can be had for many generations without its evils, by keeping a record of pedigrees in any simple manner. Where another must breed together brother and sister, or else resort to a foreign cross, a breeder thus armed can take a bird out of one of his other families, which in the course of breeding has arrived at precisely the same point, and will produce similar effects, yet with nearly all the advantage of a cross. He thus keeps the full control of his yard in his own hands, and can carry out those details of selection which we will endeavour next to describe.—*Exchange.*

HINTS FOR THE SEASON.

I. K. Filch, one of the largest breeders of poultry in the United States, says: Many of the favorite breeds of fowls have suffered from the effect of breeding for large size. From 6 to 8 pounds hens, and 9 to 11 pounds cocks, for light Brahmas; and 5 to 7 pounds hens, 7 to 9 pounds cocks, for Plymouth Rocks, are the weights at which the greatest productiveness will be found, and to force the fowls beyond those figures, will result in a sacrifice of their laying qualities. The smaller breeds, such as Leghorns, Games, and Hamburgs, will stand forcing, with deterioration, to a greater proportionate degree than those first mentioned. The rule should be guard against excessive weight in the Asiatics, and loss of weight in small breeds, if great productiveness be the aim.

Cold winter is upon us, and now is the time to see that cracks in the walls and ceilings of your fowl houses are thoroughly closed up. Keep your fowls warm and give them plenty of light, these are essentials that are absolutely necessary to their well-being and comfort during the cold weather yet to come.

The dust boxes should be so arranged that the sun will shine upon them and warm them, also where the birds will not foul them with their dropping. Supply with gravel, broken bone, crushed oyster shell, or old mortar that is not mixed with hair. Throw chaff, straw or hay cut short, over the floor, throwing grain among it, which will cause them to scratch, giving them exercise, which promotes healthy action of all the functions of their bodies, inducing great activity in egg production.

Keep them from vermin by keeping their quarters clean, using well known articles, such as carbolic acid, or carbolate of lime, sulphur and others. Keep walls and ceilings well whitewashed, and the roosts washed with kerosene often.

We have tried to impress upon the minds of our readers, that what is worth doing at all, is worth doing well. "Procrastination is the thief of time" do not wait until your neighbors try experiments in fowl raising, but start out squarely, and with a will for yourselves. Start with good fowls from the beginning, and persevere in learning their habits; they may cost considerably more to start with than the common dungbill, but will pay in the end. It is a burning disgrace to the farmers of this province that they are so far behind their neighbors of the States, and sister Provinces, in raising poultry for market.

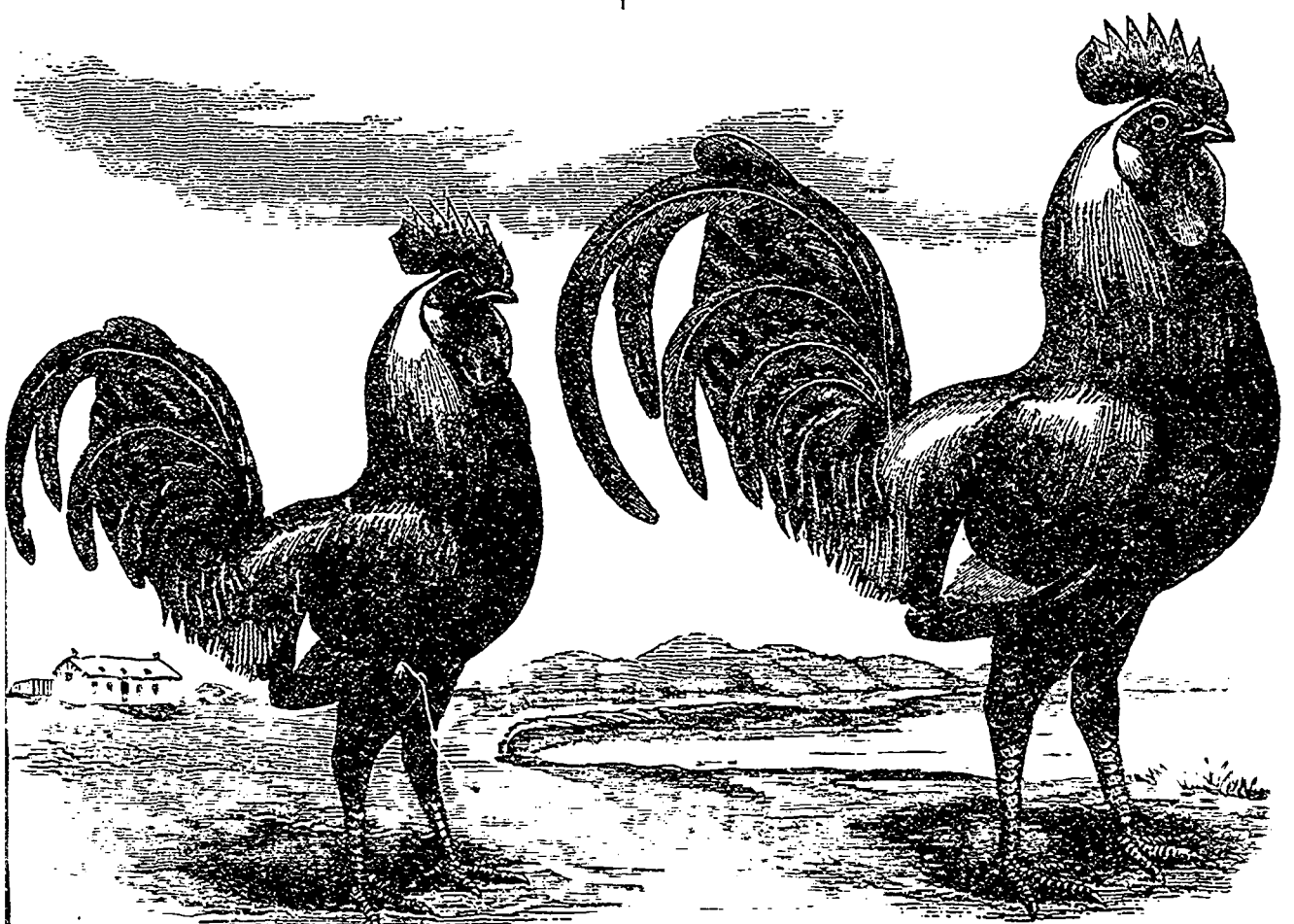
Go into our markets and see the diminutive carcases, half fed, and badly dressed, no one can tell whether they were, in many instances, purposely slaughtered and dressed for market, or whether they died natural deaths from starvation and want of care. We think there is need of great improvement in this respect, and calls often for the attention of an inspector as well for poultry as beef; and it is full time for our readers to wake up to the fact that there is money in poultry breeding if properly carried out. We have heard the remark made that there is no market for poultry; the prices do not pay, in this Province We answer, the prices are equivalent to the value of the birds offered for sale, and they may sometimes be considered dear at the price asked. Poultry dealers, who only buy to sell again upon the markets, will not give good prices for small birds that are scarcely better than skin, bone, and offal. They do not think of giving good prices for fowls unless they weigh from 8 to 9 pounds to the pair; the heavier they are the better price they will command, if properly dressed. A dealer said to us that birds brought in for sale by farmers

are generally so small and badly dressed for market that often, when they are fatter than many that are properly dressed, by themselves, and would when cooked taste fully as well, their appearance is so bad that they cannot get half the price.

We endorse most fully the following taken from an American Journal: "Poultry keeping in a pecuniary point of view insures the keeper a large percentage over the cost of keeping It does not require a very profound knowledge of mathematics to compute what ten or twelve dozen eggs would come to, or the value of a bushel of grain. We know on a farm a bushel of grain will feed a hen a year, and we know that it does not cost the farmer over fifty or sixty cents at most. We know also that any of our modern improved varieties (to be modest about it) will with care lay some ten dozen eggs during the year; these, at twelve and a half cents per dozen, gives the farmer a net profit of seventy five cents, without calculating the value of nearly a bushel of the best manure from each hen yearly and not speaking of her own worth or that of her chickens."

Farmers generally are slow to change their ways and listen to timely suggestions, and even slower to give up old usages, and are too apt to be content with following in the same groove as did their ancestors centuries ago, and keep on using the same old methods in the care and breeding of domestic animals No class of men have better chances for raising good poultry, having large fields, meadows, and orchards for them to wander in and pick up grubs, insects, and worms that infest the vegetation and fruit trees of the homestead.

There are many yards where a few fowls are kept, and yield hundreds of dollars to the keeper in a season. Of course every poulterer is not lucky enough to make such large profits on a few birds. But there is plenty room for others to made good profits even though beginning in a small way. Keep the very best fowls and advertise them well, and you will meet with good results.



CAPONS.

A castrated cock; a cock chicken gelded for the purpose of improving his flesh for the table.

All birds taken under the protection of man and domesticated by him lose a large part of their natural figure, and are changed in habits. those that have been longest under the direction of mankind have the greatest variety of size, and the most gorgeous plumage. Of all birds the cock was the first reclaimed from the forest and jungle.

The time when the cock was first domesticated in Europe is not definitely known. It is said that we of the Western World first procured the bird from the kingdom of Persia. It is known to have existed in that country during the time of the earliest monarchs. Since its introduction great improvement has been made, but it is still susceptible of much greater amelioration.

There is a great difference between the flesh and bones of the wild fowl, and that of the domesticated bird; that of wild birds being very dark, while that of the domestic is white. Nations have competed with each other in producing birds of large size, and for the purpose of perfecting them to the greatest degree of beauty of form and plumage: but it is claimed that the India Capon is splendid, bears the most

gorgeous and attractive plumage, and the flesh is much more palatable and delicate in flavor than the virgin cock. The flesh of a Capon at eighteen months old, or even more, is as delicate and tender as a spring chicken, it grows to a much larger size and heavier weight than the ordinary bird. Travellers in foreign countries, where caponizing is practiced, have supposed that the large and beautiful birds they saw were a distinct breed, not thinking that the cause of their great size and beauty was the removal of the organ of reproduction.

Caponizing is now largely practiced in France and the United States with great success, and may be made a source of profit to our poultry breeders and farmers.

The manner of caponizing will be given in our next issue.

Our cut shows the comparative difference between the ordinary cock and the capon.

Fruit Growers Association of Abbotsford.

OUT-DOOR GRAPES.

At the late Exhibition there were upon the tables 34 different varieties, an assortment never before any thing like equalled in this Province Of these at least 12 varieties had never before appeared at any of our exhibitions, either local or provincial, though in some cases bearing marks of special promise of usefulness. Most of these were in the collection of Mr. J. W Bailey of Plattsburg, N.Y., who carried off the first prize with a collection of 26 varieties.

Of those entirely new to the Province of Quebec, Herbert (Rogers No 44) and Essex (Rogers No. 41) attracted most attention. They are both purplish, black grapes of the largest size for out-door growth, meaty, sweet, and almost pulpless, and seemingly not any later in ripening than the Delaware, and worthy of general trial. BARRY (Roger's No. 43) and MERRIMAC (Roger's No. 19) also bear much general resemblance, they are large, blackish grapes of fine quality, but being a little later than the two first named, are of less value in this cold climate. The latter however we must say is usually stated to be somewhat earlier, and therefore of the two, the more worthy of trial. ROGERS' No. 7 is a largish, purplish, black grape, of much the same character as Essex, though perhaps a little later, yet worthy of trial. ROGERS' No. 2 is a fine grape of the same type but late.

BAILEY, has been so called at our suggestion. It was exhibited by Mr. Bailey along with two others, seedlings of his, and was then known as his No. 1. It is a cross between Delaware and Adirondac. The bunch is long, the berry medium It is without pulp, juicy, sweet, rich flavored, and as early (if we may judge from the trial of a single season) as Adirondac. EUMELAN though small in berry is a first class grape, yet we feel that its merits have been over rated. SHERMAN is of bluish-black color. The bunch is full medium, the berry medium, or slightly below, with a good mixture of sweet and acid, and becoming sweetish after frost At Plattsburg it is never taken from the trellis for winter covering. Query —Will it stand unprotected, the winters here? If so, it will be very valuable for covering verandas and summer houses, and might also prove valuble as a wine grape.

Of those before exhibited in this Province MASSASOIT (Rogers No 3) and LINDLEY (Rogers No. 9) even this unfavorable season have ripened well at Abbottsford. They are large, reddish grapes juicy, sweet, aromatic, and high-flavored, and worthy of more extended cultivation. SALEM (Rogers No. 22) and AGAWAM (Rogers No 15) are much of the same class as the above, though not as throughly tested in P Q, and perhaps a few days later in ripening. The same might be said of WILDER (Rogers No. 4). Iona is a fine grape but too late. REBECCA and ALLEN'S HYBRID were exhibited both from Montreal, and from Plattsburg. They are both white grapes, rich and luscious in flavor, especially the latter, which is perhaps the highest-flavored out-door grape we grow. They are both fairly early in ripening, but delicate in constitution, and said to need extra care.

JAMESVILLE (of Wisconsin) has a small bunch and medium-sized blue berry. In flavor it is pretty good, and in season among the earliest. The vine is healthy and productive but, unless with further trial it shows some special point of hardiness, we will not recommend it. Sweetwater, when taken care of, has been a success at Abbottsford, though during the last two years the thrip has been very troublesome, and, in some cases, has caused this variety to be a total failure Several different varieties, however, have appeared under this name. From Montreal comes a variety, larger in berry, and, perhaps, a little larger in bunch. It is but very little later in ripening, and has a slight Muscat flavor. It is of Chasselas type, and far finer flavored than the ordinary Sweet-water.

CHAMPION—this variety was also upon the tables at Abbottsford. and on account of its special earliness, attracted special attention. It was also exhibited in 1877 by Mr. L. W. Decker of Montreal, who had bought it in 1871 from Messrs Shanly and Gallagher. Since then it has been largely imported by them, and by Messrs. Menzies and Gallagher, as the Champion, and sold as such, and more recently imported as Champion and sold as the Beaconsfield. It combines the main characteristics of a market fruit. It is essentially a pioneer grape. It was in flavor the poorest, with one exception, of the 33 varieties exhibited. It is, however, quite good enough to sell. The market does not demand quality in a grape, any more than it does in a pear or an apple The Bell pear, the poorest ever brought to this market is one of the most profitable, and is no doubt often mistaken for the Bartlett The Alexander, and the Duchess, on account of their fine size and appearance, are assumed by the masses to be first rate apples. The Champion has the earliness, size and color necessary for a commercial grape, and as such, and as a forerunner of finer fruits, it must prove of great service to our northern country. As a commercial grape, however, it has a weak point in its shortness of season. Grapes vary much in their keeping qualities. The Adirondac we have known to be kept till March; but this is as exceptional as to have Fameuse in June: but, if the plan adopted in Paris of hanging each bunch in a separate paper bag were adopted here, we might have grapes till mid-winter. The Champion drops from the bunch somewhat; less so, we think, than the Hartford. but our knowledge on this point is limited. It is short in its season, though nothing like as short as a Peach apple, but, in a general way, it is like the Peach and Astrachan apples, early and perishable, yet profitable. The moneyed aspect of this Champion grape, the proprietors of the vine yard at Beaconsfield must surely have carefully weighed, and their firm belief in it they have proved by the fact, that they have planted out 22 acres or about 44,000 vines.

CONCORD produced at Abbottsford the heaviest crop, and the heaviest bunches It withstood the late spring frost well. It and Delaware suffered the least in this respect. It was the greatest success, except in point of ripeness. It is a little late. In some cases the berry contained a nice sweet juice between the skin and pulp, in other cases, even this juice did not sweeten. In a season of avarage heat we should expect it to ripen better. At any rate it made good grape jelly.

DELAWARE too, as we said, withstood the late spring frost well, and set a full crop of nice little bunches, which ripened, we may say, well.

CREVELLING also stood the late frost pretty well, and set a pretty good crop. The bunch is very straggling, but the

flavor of the berry makes full amends for this. It is pretty early in ripening, and both here and in Montreal has proved a success.

HARTFORD PROLIFIC—that which we received from Ontario has proved not true to name. Strange enough, too, Mr. Robert Jack of Chateauguay Basin, recognized it as that which he had received from another part of Ontario for Hartford. The berry is medium, the bunch small the season medium, and the grape below medium in general merit. The true Hartford Prolific was exhibited from Plattsburg. It is largish both in bunch and berry, and on account of its earliness and yield, should have a place among our "best five kinds." The past season, with its late spring frosts and cold September was, by no means favorable to out door grape culture: still our success was such as was worthy of wide imitation.

Soon after the Exhibition, Committee meetings were held, the strong and weak points of each new grape were duly weighed and noted for future reference, and their propagation discussed It may be said that the grapes grown by Mr Bailey at Plattsburg are no fair guide to us who live 50 miles nearer the North Pole, but a careful comparing of 5 varieties grown by ourselves with the same varieties grown by him, showed that this last season his grapes were no earlier in maturity than those grown upon the exposed slopes of Mount Yamaska. This was of course exceptional, and was partly owing to season, and in part to culture; for proper care and culture greatly hasten the ripening of a grape.

On the other hand we must say that though Massasoit and Lindley were sweet, and perfumed with their fine Muscat flavor, yet there was more pulp and acid at the core, than would have been had September been warmer. So too with Crevelling; it was sweet and good, but its aromatic flavor was somewhat diluted.

Delaware was sweet and nice, but less prononcé in that delicate flavor which to many is suggestive of the fragrance of the sweet pea; and which makes all lovers of good grapes so mad in its praises.

Some years ago, Adirondac and Black Hamburgh, both in good condition, were placed for opinion, with names withheld, before several of our residents at Abbottsford. The thinness of skin, and luscious, pulpless fleshiness of the hot house grape were duly noted; the thicker skin, and juciness, rather than meatiness, of the out-door were also noted, so too on the other hand, its freedom from pulp, and that fine combination of rich mingled flavor in the Adirondac which gave it the preference in the minds of many.

The Adirondac of the past season, though good and highly thought of, did not reach this standard of excellence. Yet so it is with other fruits. The strawberry and the raspberry lose flavor after a shower of rain, some varieties of the apple and the pear, unless they have a certain amount of heat at the time of ripening, are colorless and insipid. The grape above all other fruits needs heat. On the exposed slopes of Yamaska Mountain, our September lacked ripening power; but such was not the case in the sheltered city gardens of Montreal, where, even on clay soil, the quality was really first rate.

Our own experience in this matter is limited to a very few years, but from what we have personally seen of older vines, and from what we have heard from older grape growers, we feel that, in those parts of the country which are not subject to June and early September frosts (and even where thus subject, if care in covering for a few nights be taken), the grape does ripen its fruit with a degree of certainty that should cause it to be generally planted.

CHAS. GIBB,
COR. SECRETARY
F. G. Assoc. of A.

We gave, in our January number, the beginning of the above interesting and able report and we omitted to give Mr. Chas. Gibb credit for it.

Seeds.—Messrs D M. Ferry & Co., whose advertisement will be found elsewhere, favored us last spring with samples of such seeds as they supply to their customers. We tried them in our garden, and found all of them really excellent, some early varieties bearing abundantly several days in advance of others obtained elsewhere and highly recommended.

For the better accommodation of their Canadian trade, this extensive Seed House has opened a branch house in Windsor Ont., where all orders for the Dominion will be executed, avoiding tedious and vexatious delays, and saving the expense of entering, and paying duties in Canada.

We intend during the coming season to continue our experiments, but on a more extended scale, trying, side by side, and under exactly similar circumstances, a few standard varieties of garden seeds obtained from the best known seedsmen in America, including Canada of course The results obtained, carefully noted for the benefit of our readers, will appear from time to time in our *Journal*.

John M. Fisk's Nursery. (*Abbottsford P. Q.*)

We have from time to time, and for several years back, obtained several varieties of fruit trees from these nurseries, all of which have done remarkably well. We therefore think it due to our readers to say that for well grown hardy trees, specially suited to our climate, they should never order beyond the province lines, when this and several other first class firms offer to supply us with province-grown trees, at reasonable prices. Mr. Fisk's advertisement will be found in our last page.

4th REPORT *of the Montreal Horticultural Society and Fruit Growers Association of the Province of Quebec.*—We beg to acknowledge, with thanks, the receipt of this always welcome volume. To Canadian fruit growers it appears to us "*worth its weight in gold.*" In fact, we know of no other source where the information therein contained could be obtained *at any price.* We live in the extreme northern fruit region of America, and, therefore, any experience of successful fruit culture in the Province of Quebec must be secured here, or not obtained at all.

The Fruit Committee, who give gratuitously much valuable time to the production of these reports, deserve the best thanks of the community They are also entitled to every encouragement that can be given. How much more could and should be obtained will be apparent, when it is remembered that, out of 697 members in all of this *Provincial Society*, nine members only are reported outside of the Island of Montreal. We therefore make an earnest appeal to all our country readers to send in *one dollar* with their own name, and, if possible, that of their friends, to Henry S. Evans, the active and earnest Secretary, in order to become members of this really National Society. As will be seen by the advertisement in our last page, all persons, now resident on the Island of Montreal, who subscribe *one dollar*, will receive immediately the last Fruit Report. They are besides entitled to all the benefits of the Society, free permission to exhibit, and to visit the society's annual shows. They will, moreover, receive the coming 5th Fruit Report, and also the *Illustrated Journal of Agriculture* for one year, in French or in English, if they do not already receive it.

GLEANINGS FROM THE AGRICULTURAL PRESS.

The milking properties of Short-Horns.

We have repeatedly had occasion to notice the large and even extraordinary yield of milk by Short horn cows of the highest breeding, and all who are practically acquainted with the breed know that such instances are by no means unusual. In fact, in every herd of any consequence there are families which have always been noted for their great value as dairy stock.

Mr. Stephen B. Bliss, of the Park Farm, Weston Underwood, in communicating to *Bell's Messenger* certain particulars of some recent births in his herd, remarks: — "In

proof that generous milking properties are not incompatible with pedigree, I may here mention by the way that the two cows are producing respectively 18 and 16 quarts of milk daily. It may fairly be supposed that the same animals under more favourable circumstances (for instance, in the summer months) would give at least four quarts more each daily. At the present time (Dec. 20) they are both lying out in the open fields day and night, exposed to all weather."

The able and experienced writer of "Short-horn Intelligence" in our contemporary's columns says, with reference to Mr. Blis's statement: — "This is good evidence of the hardihood and the dairy capabilities of the short-horn, but it is wasteful practice, to say nothing of the discomfort to the cows. Much of the food consumed by the cow, instead of becoming milk, or supplying the wear of flesh incident to milking, is wanted to keep up the heat rapidly passing out of the animal's body. We can speak from experience of high-bred short-horns as hardy and good dairy stock, second to none for the grazier, the butcher, and the consumer of beef; but we always housed at night in winter. Yearling heifers we have seen do very well out of doors throughout a severe winter, without even a hovel as night shelter, but those under our own management had. nevertheless, always a shed to cover them; and our milking cows, turned out each day to pasture and water, were alwavs taken in-doors as soon as they gathered at the gate. In the depth of winter, when the ground was covered with snow, they would pick about in the hedge side (old fashioned Lancashire earth-and-thorn fences, one side always showing a bit of green), and they would drink at the well or streamlet (the herdsman breaking, if necessary, the ice) better than at the trough in the yard, while the few hours' exercise in the open air stimulated the circulation of the blood and caused a healthier action of the vital organs."

These remarks convey exactly the same lesson we have often endeavoured to impress upon our readers, namely, that the exposure of in-calf cows and of store cattle out of doors, without shelter, during the winter half year, is a wasteful practice, and this is so obviously the case that it is strange it should be persisted in. A non-improving, retrogressive system of management never can be profitable, and science tells us why it leads to much unneeessary waste of flesh, which must afterwards be replaced at considerable cost.

"*Farmers' Gazette*," *Dublin.*