Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☐ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☐ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☐ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☑ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

THE JOURNAL OF AGRICULTURE AND HORTICULTURE

VOL. 2. No. 19 — This Journal replaces the former "Journal of Agriculture," and is delivered free to all members of Farmers' Clubs. — APRIL 1st, 1899

- THE -

Journal of Agriculture and Horticulture

THE JOURNAL OF AGRICULTURE AND HORTICULTURE is the official organ of the Council of Agriculture of the Province of Quebec. It is issued Bi-monthly and is designed to include not only in name, but in fact, anything concerned with Agriculture and Stock-Raising, Horticulture &c. 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

LA PATRIE PUBLISHING CO.,
77, 79 & 81 St. James St., Montreal.

Subscription: $1.00 per Annum payable in advance.

Table of Contents

Notes by the Way.

Shropshire sheep. — We are informed that Mr. Fisher, the Dominion Minister of Agriculture, has given Mr. W. Hodson, Secretary of the Dominion Live-Stock Association, a commission to buy thirty Shropshire yearling ewes, for distribution among the farmers in certain districts in this province. We believe that the hilly parts of the province will be selected for the purpose, and if the farmers who breed from these ewes will grow rape, vetches, etc., for them and their progeny, so that, after pasturing all day on the hills, they may be folded at eventide on the green-crops, we prophesy a speedy and vast improvement in the yield in grain and hay over the districts in question. But, may we be allowed to ask, why not buy and distribute an equal number of lamb rams of the Hampshire-down strain this summer? They would be quite fit for service by the month of October next, and though the Shropshires are very good, the others are more precocious, the lambs at the great Smithfield Club show, last December, weighing 213 lbs. apiece, liveweight of course, which would probably mean 115 to 118 pounds of carcase! The great Hampshire-down flockmasters almost invariably use lamb-rams for the service of their ewes; 35 to 40 ewes, about, to each ram.

Export of hay.—Another idea of Mr. Fisher is to facilitate the export of hay to England, the high import-duties of the States having rather put a stopper on this branch of trade.

If this project is carried out, we do earnestly hope that our farmers will try the experiment of treating their clover-hay as that crop is treated in England; the first thing to bear in mind is, that the less the clover is meddled with, the better the

hay will be ; for it is the very reverse of meadow-hay, which cannot, at any stage of its making, be teazled and broken up too much or too often. In other words, *make* meadow-hay, let clover-hay *make itself*. And, if possible, let the farmers be persuaded to put their clover-hay into stack, instead of into the barn. It should be stacked green enough to get a good sweat ; after which, it will be more than half-pressed when it is ready for the machine. Cut early, and made in this fashion, there is no reason why Canada clover-hay should not sell well in the English market. Take the average of years, and it fetches "a five-pound note" ($24.00) a load of 2,016 lbs., in the London market, and it is thither that it should go, as the great dealers of the Metropolis are always ready to pay for quality.

We may be allowed to say that we sent hay to London for at least eight years, and may be supposed to know something about the trade of that village. The best clover-hay is now worth there £4, 15s. 6d. a load, equal to about $23.00 for our ton ; and here we have clover-hay, ready baled, selling for, at most, $3.75, or say $4.00, one-sixth or one-fifth of the price !

BALED HAY.—Export business continues active, but local trade is dull. Receipts in Montreal are liberal, and prices easy.

Quotations are : No. 1, $5.50 ; No. 2, $4.50 to $4.75 ; clover mixture, $4.25 ; *clover, $3.50 to $3.75.*

THE HAY SITUATION.

A LOCAL MERCHANT'S IDEAS. — THE EXPORT WILL NOT BE SO LARGE AS ANTICIPATED.

There has been considerable discussion on the Board of Trade of late regarding the quantity of hay being shipped from Canada one merchant having recently stated that it was his opinion that there were not less than a thousand cars being shipped every week. This estimate is in all probability considerably in excess of the actual export, although the quantity, in any case, is large.

In discussing the amount of the available crop this year, a prominent merchant pointed out that in 1893, in which year, with the reserves from the good crops of the previous two years, there was exported 220,000 tons. This splending showing was made possible by the unusually high prices paid to farmers this year, these prices averaging from $8 to $10 in the country. The tendency of the farmers that year, he points out, was to consume as much as possible on the farms, and to hold the balance for higher prices. This was not to be wondered at when it was remembered that the present prices did not exceed $3.50 to $4.50 a ton, on cars, which was not sufficient to reimburse the farmer for the trouble and cost of harvesting, pressing and drawing to the cars. The fact that present deliveries were large was due to the necessity of farmers raising money to meet their March liabilities. As soon as these had been met, he thought that deliveries would drop off again as the immediate necessity of farmers would be over.

The inference he drew from this was that even though shipments might have been unusually large for a week or so, it would be erroneous to suppose that they could be more than a few hundred cars a week for any length of time. If they were it would not take long to ship out as much as was shipped during the whole of 1893, when the surplus was unusually large and prices such as to tempt farmers to market every ton they had instead of to use it for bedding, as they seemed inclined to do this year.—*The Star.*

And if clover-hay is worth such a figure in England, now ; after two such hay-crops as those of 1896 and 1898 ; there is not much fear of its averaging much less in future years ; only, as we have said over and over again, it is quality that tells in London market.

County-farms. — Some years ago, we proposed, in this periodical, that in every county in this province there should be a farm, under the patronage of government, carried on under the management of a skilled farmer, thoroughly acquainted with the needs of the agricultural population of the country. An old English proverb says that "Great wits (?) jump together," so we must confess that we were rather pleased at seeing the following proposal in the *Contemporary Review*, one of the leading magazines of England :

"THE ONE REMEDY FOR AGRICULTURE."

"Sir Edmund Verney declares that "until agriculture is regarded as a scientific profession, agricultural depression will always be with us." His contribution is all but entirely made up of a letter from a former farmer who tells how he made his farm to pay by brains, resolution, discipline,

quickness, and science. This correspondent's suggestion is :—

"Every county where agriculture predominat e ought to have one mixed farm set apart as a training-farm for young fellows about to embark their cash in farming; let the staff for teaching be, say roughly, a general manager and secretary combined, a farm bailliff, and a scientist, these men to be the smartest and most efficient obtainable, and the junior staff the same. Why, with a big old-fashioned farm-house and buildings, the whole thing could be rigged up and started at very moderate cost. Here the pupil would have ocular demonstration of smart and record work, and such a drilling as he would never forget. In every branch he would be prepared to meet the rapid and rushing competition of the age. There would be the library fully stocked and kept replete with all agriculture literature up to date... Such an institution, in my mind, ought to be a beacon-light, a "rallying-point" for the agriculturists of the county."

The motions of animals. — Why does a hound "challenge," as it is called, when he suspects he has hit upon the "drag" of a fox? To give notice to the rest of the pack of his discovery, and ask for their adhesion to his views.

Why does a dog wag his tail? Because, when a pack of wild dogs were in pursuit of game, in *long grass*, it was almost the only means one of them had to let his comrade know that he has found a trail. The wild dogs. everywhere, run mute, the glorious, triumphant chorus of the fox hound pack is a product of civilization.

The dog turns round several times before lying down, because his pre-historic ancestors lived in long grass, and used to turn round to flatten it down before reposing.

Sheep, if run by a dog, invariably take up the nearest hill, because their ancestors were mountain-bred.

A hare pursued by grayhounds, also runs up hill; if there is a hill handy; because her immensely long hind-legs give her a vast leverage; whereas, if she runs down-hill, the same leverage causes her to tumble "head-over-heels." Why should a hare be always spoken of, in English, as being of the feminine gender, and in French of the masculine? How often has any one seen the word for the female hare in French, which is "la hase"?

COMPETITION OF BEST CULTIVATED FARMS.

Detailed reports of some of the farms visited in 1898.

(Continued.)

No 1.—M. F. O. Lachapelle.

On the 23rd of July we inspected the farm of M. F. O. Lachapelle, at St-Paul l'Ermite, L'Assomption county.

The general aspect of the buildings, white with red string-courses and dark roofs, the lovely flower-beds and splendid gardens that surround the house, the general manifestation of order and neatness, all tell you that you are on the property of a tasteful and meritorious farmer.

The pleasant welcome offered you by the family confirms the good impression already received, and you at once feel yourself so much at home, that you warmly press the hands of the venerable father of the family and of his worthy wife, who, this very year, will celebrate their golden wedding.

And on this account, we rejoice greatly that we are permitted to reward the joint labour of M. Lachapelle and his son by adding to the above cause of rejoicing, the dignity of Laureate of the Greatest Exceptional Merit, and the Gold-Medal, as a memorial of our appreciation.

It is, too, a very opportune occasion to recall the great services rendered to agriculture by this patriarchal family, one of whose members, M. Napoléon Lachapelle, is the worthy president of the Agricultural Society.

This society reckons among its members no fewer than 20 Laureates of great merit.

The course of rotation followed by M. Lachapelle is perfectly regular; it comprises 12 *arpents* of hoed-crops out of 80 acres of arable land, i. e., at least one-seventh of the whole, in addition to 3 arpents of green-fodder.

1st year: after pasture: Wheat, pease, or oats and pease, according to the quality of the soil.
2nd year. Hoed-crops with manure.
3rd " Barley or wheat, sown down with clover and timothy.
4th year. Clover.
5th " Timothy and clover.
6th " Pasture and green-fodder.
7th " " "

(*Very good indeed*; far better than spreading out the rotation to ten years, the three last of the pasture being a delusion and a mockery of the poor animals. Ed).

M. Lachapelle, having sold, a few days ago, 5 pure-bred Ayrshires to a man from New Brunswick, has at present one head of cattle to 3½ arpents. Therefore, we have not allowed him the 4 full marks for his stock; as, generally speaking, we consider the cattle to be the basis of a good system of farming: no dung, no crops.

Besides the building, which are in every respect suitable to the farm, there is, as we were glad to see, a silo, a good icehouse, and every comfort the cattle need.

The farm is well divided into fields, with a good fenced off road from one end to the other. (*Allée* is an *avenue*, but in England the latter word implies trees).

The fences are in perfect order. Very few weeds, for which we deduct a quarter mark out of the three.

The manure is very cared for and increased in quantity.

The books are well kept. It is evident that M. Lachapelle has boldly laid out more than $2000.00 in putting things in order and has raised the value of his farm by fully that amount.

A great deal of permanent improvement has been done.

Thousands of loads of stones drawn from the land have been used for three arpents of drains and in building bridges, etc.

The ditch super-banks are gone, having been spread over the different fields, and the watercourses have been trimmed and straightened.

A sugar-bush of 400 trees is carefully preserved, and a hundred or more trees have been set out as ornaments or as shelter for stock.

Lastly, the road has been slightly rounded up, and is perfectly well-made in every respect. In it are no weeds.

We gave 12 out 15 marks for cattle; they are good, but there is not enough of them. The poultry-yard is well conducted.

The seeding of the farm is as follows: wheat, 3½ arpents; barley, 4 arpents; pease and oats, 14 arpents; pease, 1 arpent; buckwheat, 4½ arpents; flax, ⅓ arpent; beans, 1½ arpent; carrots, ½ arpent; potatoes, 4 arpents; corn for seed, 1 arpent; corn for silage, 3 arpents; tobacco, 2 arpents; and 4 arpents of green-fodder crops.

There are 18 arpents of meadow and 22 of pasture, with plenty of timothy seed.

A nice orchard and 110 gooseberry-bushes, currant-trees, vines, etc. Two fine gardens with plenty of flowers.

Nothing remains to be said, except to express our earnest wish that M. Lachapelle and his worthy companion may continue to hold the standard of agriculture high and firm for many a day, and that their prudence and good management will lead them on from one success to another.

We gladly assign M. Lachapelle 94.25 marks out of the 100 that denote perfection.

No 2.—M. Théophile Trudel.

The farm of M. Trudel, of St-Prosper, Champlain county, which we visited on the 29th August, contains 305 arpents, 200 of which are arable.

There are on it 50 head of fine cattle, for which we allowed 14 marks out of the 15; which is as much as to say that the owner is a good judge and understands breeding.

Considering the great size of this farm, the system of rotation is perfect.

It must be confessed that farming would be carried on more successfully if the farms here were not so large. But our country is still young, and, in time, quality will make up for quantity.

(The real fault is, that farmers have not enough capital in proportion to the extent of their farms. In England, no man need expect a landlord to let him a good farm, with suitable buildings, etc., unless he, the tenant, can show that he has ten pounds ($50.00) to stock it with. Ed).

The land is clean; the division into fields is suitable, and the fences are in good order, as are the house and the buildings in general.

In our opinion, a good silo would be an advantage; but M. Trudel follows the plan of mixing, alternately, thin layers of green-fodder with straw of the previous season.

The implements are sufficient in number and in good repair.

The manure is carefully managed; still, we should like more of it used for hoed-crops, were it possible.

Books fairly well kept.

Clearing off stones, levelling, and other permanent works, have been carried out on a large scale.

Competition of Agricultural Merit, 1898.

REPORT OF THE JUDGES.

List of the Competitors in Agricultural Merit, 1898.—Number of marks obtained.

No.	NAMES.	RESIDENCE.	COUNTIES.	MARKS.
	For the gold-medal :			
1	F. O. Lachapelle	St-Paul l'Ermite	L'Assomption	94 25
2	Théophile Trudel	St-Prosper	Champlain	91 70
3	Louis Deschamps	St-Paul l'Ermite	L'Assomption	87 60
4	Médard Rivet	St-Paul de Joliette	Joliette	87 25
5	Delphis Turenne	St-Paul l'Ermite	L'Assomption	86 05
6	J. B. A. Richard	Joliette	Joliette	85 20
	For the silver-medal :			
7	Chs Rivet	Joliette	Joliette	93 90
8	Hormisdas Mayrand	St-Léon	Maskinongé	91 25
9	Ambroise Hétu	St-Sulpice	L'Assomption	90 50
10	Charles Bonin	Ste-Emilie Jc.	Joliette	87 40
11	Philéas Deschamps	St-Paul l'Ermite	L'Assomption	86 75
12	N. Geoffroy	St-Ambroise de K.	Joliette	86 50
13	Ed. Lachapelle	St-Paul l'Ermite	L'Assomption	86 25
14	Gédéon Garceau	Pointe du Lac	St-Maurice	85 70
15	John Young	Bristol	Pontiac	85 40
16	Adelme Côté	St-Barthélemi	Berthier	85 40
17	Albert Brien	St-Paul l'Ermite	L'Assomption	85 35
18	James Cuthbertson	Portage du Fort	Pontiac	85 25
19	Michel Bourassa	St-Barnabé	St-Maurice	85 25
20	Louis Thouin	Repentigny	L'Assomption	85 20
21	Pierre Lavallée	St-Norbert	Berthier	85 10
22	Edward Graham	Elmside	Pontiac	85 05
23	Mathias A. Ferland	Berthier	Berthier	85 05
24	Louis Fréchette	St-Norbert	Berthier	85 00
25	Alfred Rivet	St-Paul de Joliette	Joliette	85 00
	For the bronze-medal :			
26	Joseph Perrault	Ste Mélanie	Joliette	83 30
27	Joseph Laporte	St-Norbert	Berthier	83 15
28	Benj. Lacasse	St-André Avelin	Ottawa	80 80
29	Albert Charretier	St-Paul l'Ermite	L'Assomption	80 60
30	Alex. S. Smart	Portage du Fort	Pontiac	80 10
31	Joseph Roussel	Trois-Rivières	Trois-Rivières	80 10
32	Eugène Fréchette	Ste-Elizabeth	Joliette	78 85
33	F. X. Amiot	St-Paul de Joliette	"	78 60
34	Gédéon Brouillet e	L'Assomption	L'Assomption	78 15
35	Eugène Amyot	St-Paul de Joliette	Joliette	77 85
36	Joseph Foisy	L'Assomption	L'Assomption	77 70
37	Louis Rivet	"	"	77 55
38	Désiré Hétu	Ste-Mélanie	Joliette	76 85
39	Norbert Dauphin	St-Norbert	Berthier	75 95
40	Hercule Milot	Yamachiche	St-Maurice	75 90
41	J. B. Montagne	St Léon	Maskinongé	75 60
42	Henri Papin	L'Assomption	L'Assomption	75 40
43	Mathias Ferland	Ste-Elizabeth	Joliette	75 40
44	Joseph Lamy	Yamachiche	St Maurice	75 20
45	Henry T. McDowell	Shawville	Pontiac	75 05
46	Joseph St. Pierre	Trois-Rivières	Trois-Rivières	75 05
47	Adélard Sarazin	St-Norbert	Berthier	75 05
	For the diploma of merit :			
48	Maxime Grenier	St-Barnabé	St-Maurice	73 95
49	Thos. McDowell	Shawville	Pontiac	73
50	Joseph Payette	St-Paul de Joliette	Joliette	72 60
51	Rémi Dauphin	Ste-Elizabeth	"	72 60
52	L. O. Bournival	St-Barnabé	St-Maurice	72 05
53	Rémi Hénault	Ste-Elizabeth	Joliette	71
54	Henri Bettez	Ste-Marguerite	Trois-Rivières	66 75
55	Alphonse Fontaine	Joliette	Joliette	66 05

Cropping: 7 arpents of fine wheat; 2 of barley; 30 of oats; 3¾ of pease; 40 of buckwheat; ¼ of beans; 2 of swedes; 1 of potatoes; and some corn for seed; 20 arpents in meadow, and 40 in pasture.

M. Trudel grows his own clover and timothy seed.

Lastly, there is a capital orchard, 2 arpents in extent, and 21 bee-hives.

M. Trudel is a model farmer, and worthily represents the county of Champlain in the present competition. We regret that this county has not more representatives this season.

To M. Trudel we assign 91.70 marks, and a gold-medal.

Cattle.

SHORTHORNS AS ALL ROUND CATTLE.

Read before the Shorthorn Breeders' Association by J. Hanley, Read, Ont.

I have been a member of this association since it was formed, and a regular attendant of its annual meetings. If I have not taken much part in your deliberations it was not through want of interest but that being a comparatively late breeder I came among you to learn, not being competent to teach, and have always been both pleased and instructed by the adresses delivered and papers read at these meetings, but it has always appeared to me that there were one or two points of special interest to Shorthorn owners not sufficiently dwelt on nor clearly enough brought out. It is to direct your attention to these points that I have written this paper, hoping that men of more leisure and ability will place the matter with the prominence it deserves before the farmers of Canada.

No doubt you have often heard the question asked (at Farmer's Institute meetings and such places), "Which is the best breed of cattle for the ordinary farmer?" If you have, I am quite sure you have heard the answer expressed or implied, "Hush. This is a matter we cannot touch or it will provoke an angry discussion, each one extolling the merits of his favorite breed." Although it seems a reflection on the intelligence of the farmers of Canada, it must be admitted that there are reasons for such an answer, but I claim that for the vast majority of Canadian farmers the question should not have been, "Which is the best breed," but "*Which is the best grade?*" or "Which is the best breed to cross with the common stock of our country?" To this I reply "*The Shorthorn*," and, in doing so, I am not decrying the usefulness of other breeds. I have no word but that of praise and commendation for the men who have imported such cattle as the Holstein and Jersey, and improved them until they are better, are more useful, than they were in their native land. For the dairy specialist those breeds and the Ayrshire have special claims to consideration, but not one-twentieth of the farmers of Canada are specialists or likely to become such.

In my county (Hastings) perhaps the second county in the Dominion for the production of cheese, not one in fifty can be called a specialist in the strict meaning of the term. The ordinary condition of affairs is this: A farmer possessing, say one hundred acres, keep eight to ten cows, or whatever number he estimes he can handle without buying feed. He raises four to six calves. He sells the steers when two or three years old, and generally has heifers to take the place of cows that go wrong or are getting old. Hitherto he sent to the cheese factory in the summer and often let the cows dry up in winter. Now that creameries are being introduced, he milks his cows longer, and having more skim-milk will raise more calves. He raises some wheat, barley or other grain as well as some pork for sale. He is, in the strict sense of the word, a general purpose farmer, and as such needs a general purpose cow.

I am aware that it requires one hardihood and a good deal of courage to venture a word in favor of the general purpose cow. *Poor cow.* She has been persecuted for years had been repeatedly declared out of existence, only to be resurrected and again annihilated. But I have no hesitation in declaring my conviction that she is very much alive yet, and will outlive the youngest or her critics; for, as long as the general purpose farmer exists, (and he always be here) he will keep her. Her easy keeping qualities will always insure for her an affectionate regard. Several years ago I read a virulent article from the pen of a prominent Professor, not now living, evidently written in the interest of the Jersey breeders, on this subject. His whole argument was based on the assumption that cows consumed food in proportion to thei

weigh. That if it cost $20 to maintain a cow weighing 800 lbs. for the season, it cost $30 to keep a cow weighing 1,200 lbs. That, supposing the smaller cow gave no more milk or butter than the larger (it was evident he wished to convey the impression she would produce more), it cost the farmer who kept the large cow ten years $100 more than the other, when all he had in return was about 150 lbs. of old cow beef. I remember well the indignation I felt that the writer should assume that the farmers of Canada were so ill-informed as to be influenced by such nonsense, when their own experience and the experiments made in Germany, England and the United States had proved conclusively that the size of a cow was no indication of the cost of her keeping.

I had a notable experience about the same time myself. It was an extreme case, such as is not often met with, but as it happened on this occasion I will give it to illustrate my argument. For three years I fed together a pure bred Shorthorn cow, that, always being in condition, generally weighted about 1,650 lbs., and a grade Jersey that, never being in conditlon, seldom weighed over 700 lbs. Giving these cows an equal amount of concentrated food, say a gallon of cracked grain at a feed, the smaller cow required a greater amount of rough food such as straw, cornstalks, or clover. Often I fed them together given each an equal amount, and found in the morning food left in the larger cow's manger, and the smaller cow's ration eaten up to a straw. They were equal milkers. I cannot say which was the better. Neither gave enough to pay a profit on food consumed and attendance, but here the generel purpose value came in. I could not sell the smaller cow's calves at any price, even when bred to a pure bred bull, and would not raise them, and could not sell the cow herself. I could sell the large cow at any time, but did not want to sell her while she bred heifers much better milkers than herself, and her bull calves brought me an average of $65 each, between the ages of 7 and 10 months. I parted with the large cow while yet in milk to a butcher for $63.50, while, after a good deal of fitting, I succeeded in getting $20 for the small cow, because I had some good cattle to go with her. With this experience fresh in mind you will not wonder that the professor's argument did not impress me fayorably. You have all noticed how carefully the critics of the general purpose cow avoid all allusion to her progeny. I can assure them, however, that the farmers generally supply the omission in their minds.

In support of my contention re the Shorthorn grade, I may be permitted to give another instance that has come under my observation. Last May a gentleman from a neighboring township called on me to purchase a yearling bull. On hearing I was sold out, he said, "I am sorry; you know I have been using Shorthorn bulls in my herd for a long time." This remark was in reference to the fact that I had myself sold him four pure-bred bulls in twelve years. Many of my friends and neighbors have been changing from one dairy breed to another, and I believe I have to-day the best producing herd in the county kept by an ordinary farmer. My twelve cows, three of them being young heifers, have for some time averaged 42 lbs. a day on grass alone. Our factory books will prove that. Being a member of our cheese board, I meet every week representative dairymen from all the neighboring townships. I have made careful inquiries, and, while I can hear of records of individuals and small herds, all developed and fed for a high record, yet I cannot hear of any herd receiving ordinary farmers' care in winter, and grass in summer, that equals mine. This gentleman was so pleased with his cows that he bought a calf between eight and nine months old for use in his bred rather than get one of any other herd, which he could easily have procured at a much lower price. I know it will be said, and with truth, by many, "Mr. Ross experience is not mine. I have tried Shorthorn sires and their heifers have been a failure for the dairy." I grant this is often the case, and I know it is equally so in many instances with every dairy breed when a proper selection of a sire is not made. In the first instance, the heifer, if properly kept, can at any time he turned over to the butcher at a profit if she fails as milk producer. If the other grades fail in milk they usually fail in everything.

The man whose Shorthorn sire failed to produce good milkers probably went to a breeder and said: "I want to purchase a calf of as good a milking strain as you have." Any successful Shorthorn breeder thus appealed to would point out the animal he believed best suited to the purchaser's requirements; but the calf thus honestly recommended is very likely to be of less fashionable color or less smooth in outline than some of the other calves in the herd, or in a neighboring herd,

whose ancestars have for generations been bred for beef only. I think it is the experience of most breeders that the man who wanted milk will buy beef because the animal pleases the eye better, *and afterwards complains of disappointment.* As far as my observation extends I cannot remember a single successful dairy herd owned by an ordinary farmer that is not built on a Shorthorn foundation or has not Shorthorn blood in its composition, such is the power of the breed to assimilate to advantage other classes of cattle. Mind, I do not include the herds of wealthy men, who buy the best of other breeds without regard to price. If, as is admitted, our native cattle of Canada are such a useful and hardy race, their excellence can be attributed more to their admixture of Shorthorn blood than to all other sources combined. How rarely do we see a good steer or heifer in the hands of the butcher or shipper that has not the Shorthorn form and outline? Good sires of other breeds are being introduced into the country in all directions, but I have noticed that rarely, except where they are crossed with Shorthorns or their grades, can they be called a success.

I therefore claim that to you, Shorthorn breeders and importers, this country is indebted for its greatest source of prosperity. You have added more to the material wealth of our country than any other class in proportion to your number. Your numbers are necessarily limited because as it must be admitted it required peculiar talent and skill to raise up the Shorthorns to the point of excellence they have attained, and it requires equal adaptability and skill to keep them up to the standard. No matter how intelligent the ordinary farmer may be, he has seldom the time or the inclination to study in all its bearings the breeding of first-class auimals, or to keep their pedigrees or ancestry correctly. The men who have the disposition and talent for the work will pursue it, sometimes at a profit, often at a loss, and the general farmer gets the benefit of their skill. They are as anxious as the purchasers of their stock that the animals they sell turn out satisfactorily to the purchaser, and will seldom recommend an animal they do not believe in. The breeder who acts otherwise has missed his vocation and will not remain long in the ranks of the men who have achieved such success with their favorite breed. The men who have more than a continental reputation, and who, if they did not as a body combine honor, integrity and skill, would never possess the reputation, nor achieve the success, obtained by the leading Shorthorn breeders and importers of Canada.—*N. W. Farmer.*

A MODEL COW STALL

In response to numerous inquiries for a good cow stall, we republish the following cuts and description of the Scott cow stall.

In the first place, the stable has enough light in it to take the photograph of it in a quarter of a minute's exposure, which was taken after cows were put on pasture and all bedding removed and stalls swept out, and by the way, are kept so through the entire summer for milking, night and morning.

This stall is not only in common use in this immediate locality, but throughout Ohio and many other states, and dairymen who have put them in find they made no mistake, for the reason that they give to the cow so near perfect comfort and absolute cleanliness that their introduction has made the keeping of cows more of a pleasure, than before using them.

While figure 1 gives a perfect rear view, figure 2 will explain more clearly the side section and measurements, etc.

The platform A, is made of one-inch oak, doubled and joints broken, with a fall of two inches, and is six feet, six inches long for a cow weighing 1,000 pounds, and should be correspondingly longer or shorter as the weight of the cow may require.

This feature may be provided for by placing the fencing, in front of the cow, nearer toward the ditch or further away or somestimes the ditch is run at an angle or an offset at one end, but the former is by all means the most satisfactory.

The feed trough B is raised by running two 2×3 stringers the entire length of the stable making the trough eighteen inches wide and six inches deep in front of cow. The stalls are three feet, three inches wide from centres, and partitions four feed high and three feet six inches at C. The posts D are five feet high made from 2×3 studding, and toe nailed in the corner of each feed box at F and 1×3 lath nailed to them for the cow to eat hay through, and to keep her standing back to her ditch.

The hay rack at E is eighteen inches wide and three feet deep to F, and is open with a six inch thwart so that grain, ensilage or any cut feed

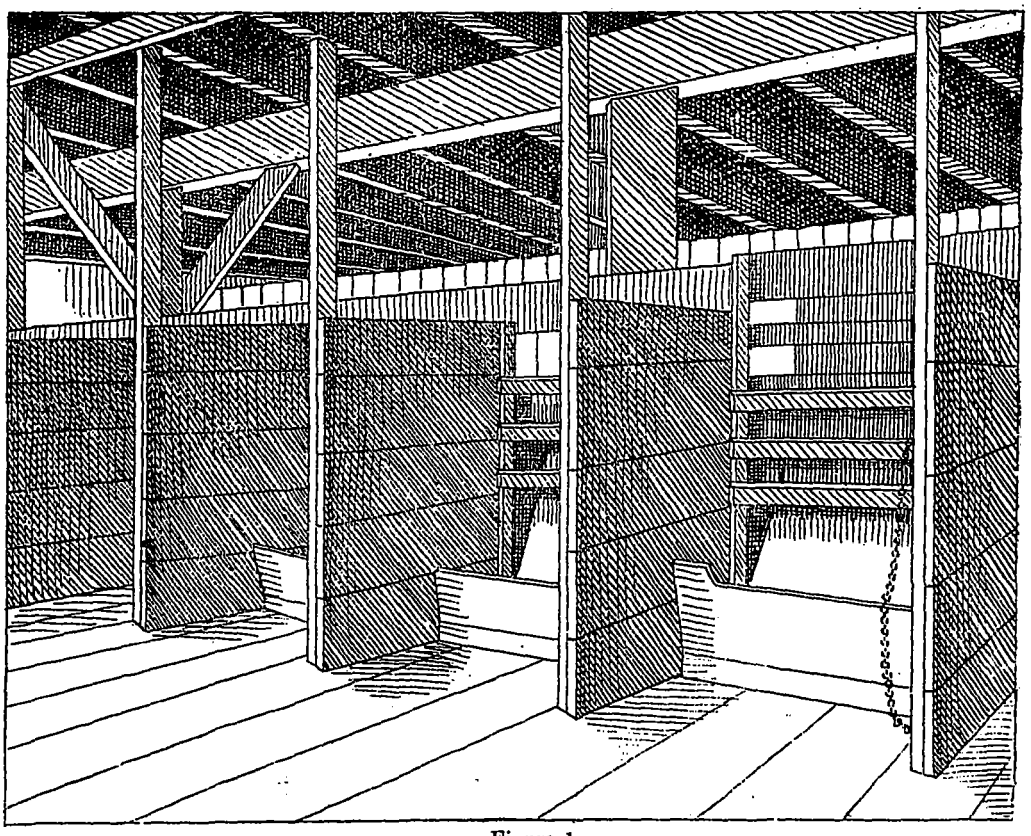


Figure 1

readily falls through into feed box The ditch is sixteen inches wide and nine inches deep on platform side and seven inches at rear and is made absolutely water tight. The latter feature, along with the broken joints on the platform, always insures good sanitation as with every particle of manure and liquid voiding where absorbents and deodorizers can be applied, puts the stable in shape so that its care taker can keep it pure and sweet, with little effort, and have some place to take callers into when showing his best cows without having to prefix and suffix the visit with an apology.

Any farmer I think, can erect this stall with the use of a good saw, hatched, jack plane and square at a trifling cost, and when once completed am positive that it will be a great source of pride to the dairyman who has it in his barn.

After four years of use, and keeping cows confined from four to five months, each winter, day and night, am able to say that it is a perfect stall and not only keeps the cows perfectly clean, but have not seen a stall that gives the cow so much freedom for her head and body.

We tie with ordinary tie chains, and by the use of a large ring or a strap around the second bar in front, can be moved from one side of stall to the other.

Ohio. GEO. E. SCOTT.

Hoard.

TUBERCULOSIS OR CONSUMPTION.

To the Editor of the JOURNAL OF AGRICULTURE :

DEAR SIR,—Is it not time that our people were stirred up to the danger that threatens our chief industry, the dairy industry ? In nearly every county they are making great efforts to stamp out that dread disease tuberculosis. The Prince of Wales is at the head of a movement to stamp it out of Great Britain, and has I believe subscribed some $50,000, or $60,000. The State of New-York is also up in arms against it, and has imposed a

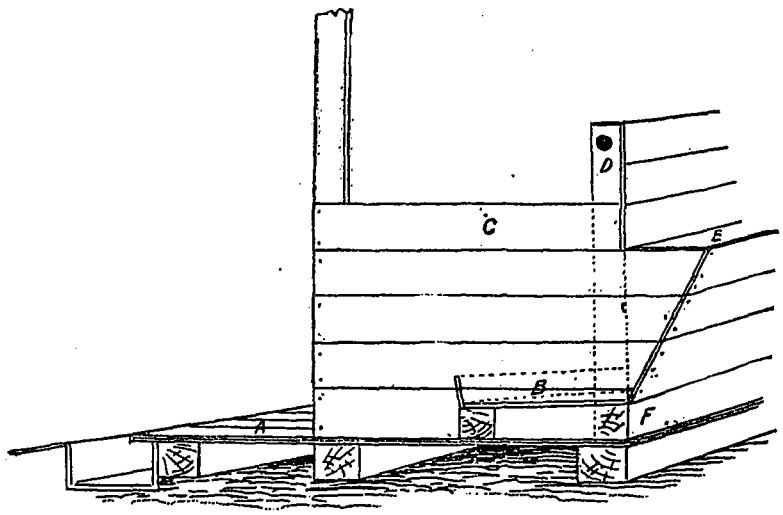


Figure 2

30 days quarantine on cattle coming from Canada. The Hon. Sydney Fisher stated that only about 8 % of our cattle were infected with the disease; this can only be of those suspected of having it; surely if all our cattle in Canada were examined there would not be 8 % found contaminated with it. If some means are not very soon adopted to prevent the spread of the disease, it will be a menace to our welfare, as at present experts claim that the same germ is identical with the consumption in human beings; that people can catch the disease from cattle; and that cases have been known where animals have been infected by consumptive people. At present all who wish can have their herds tested free of charge by the Department of Agriculture, Ottawa, by making application. Would it not be well for each section of the country to petition the present session of parliament, to allow for the part value of the animals to be slaughtered, say one half or two-thirds of their cash value? In this way the diseased ones would be killed at once, and the greatest source of the spread of the disease be taken away.

Another means of prevention is to have stables well ventilated and have plenty of sunlight, as the rays of the sun will kill the germ, or prevent them from coming to life, while in dark and damp stables the germs have been known to live for months. Another source of spreading the disease is by using the milk from diseased cattle, and should the milk of diseased cattle be allowed to go to the cheese-factory or creamery, a whole neighbourhood might be infected thereby. One more reason is this: should the people in Britain get the impression that we have it here in a severe way among our dairy cattle, good bye to our markets for both cheese and butter. This would be the most serious blow of all. Let us act together and with a long pull, a strong pull, and a pull altogether, the disease might be eradicated in one year.

How many human beings die in Canada yearly of consumption?

More than anyone could think of. Here, in this place, a short time ago there were no less than 3 females all dead at one time from the dread disease. How many more in this parish have got it now? Great care should be taken to have the contents of the spittoon (1) buried regularly, as by emptying this article outside hens and other poultry have been known to contract the disease, and even the germs have been transmitted to people in delicate health. It is a duty incumbent on the press to keep the people posted as to the great danger of spreading the disease. When every one knows the danger, they will be on their guard and act accordingly.

Yours truly,

PETER MACFARLANE.

Chateauguay,
7th February 1899.

(1) The Americans use the word "Cuspidor," from the Spanish "Escupir," to spit. ED.

LOCAL BREEDS.

About fifteen years ago I attended a most successful sale in England, a most notable occurrence, inasmuch that it was the sale of a herd of purely local cattle.

The claims of this auction to general attention were, first that the whole of the lots to be offered, were of a sort which had been found in practice to suit the wants of land-occupiers in the district; and second, that they had all been reared by a breeder whose methods, through a long period, had inspired his neighbours with confidence. Although the animals had nothing like a pedigree, which could be set forth in the catalogue, they were known, by those interested in the sort, to have been purely bred for generations; and at the local shows of fat stock, and at the local markets, specimens of the herd had frequently been proved to be pre-eminently successful. So that, though there had been no artificial means employed to create an excitement about the herd, its local character sufficed to bring the neighbours to compete. They did so in such a liberal way that thirty-seven cows, calves, heifers, and steers, averaged about $130 each, and this was in a year, when the average of the longest pedigreed animals of a most fashionable breed would only be about seven or eight dollars more.

It seems worth while to dwell a little on this incident, because it seems to illustrate, that there is more chance of usefulness (and profit) in a landowner's taking up the breeds of his own neighbourhood — employing about them the known rules of good practice in breeding, cultivating the good opinion of the local markets and consumers —then there is in running about collecting at great cost specimens of another variety simply because it happens to be the fashion elsewhere.

It is always a risky thing to have to try to convert one's neighbours into renouncing their old favorite sorts and adopting new comers. Thousands of dollars have been expended, in the Old Country, by many a generous minded landlord to put before his tenantry what he held to be "choicest stock," when, by the expenditure of hundreds (by a little good judgment) he could have done more for himself and them by making the best of—and advancing a stage on the road to perfection—the breeds of animals which were already in possession of the neighbouring stables, byres, folds and sties.

In Sussex (England), Sussex cattle are in favour: and therefore a Sussex breeder, who had taken pains to cultivate the local breed, found a prompt response to his endeavour to get support from those about him; for everything sold fetched its full value. Compare such a sale as this with some of the fancy cattle auctions where animals —whose predecessors had averaged a thousand and fifteen hundred dollars each were sold for about a hundred dollars. In one case the neighbours stand by the ring-side and stare, to the sore distress of the pains-taking salesman; and in the other they nod franctically as each lot comes in, and the bids roll in faster than the auctioneer can collect them. Of course it is not often taken into account—when beginning a stud, herd or flock—what will happen when the beginner, or his executors, shall be clearing out. But all studs, herds, and flocks require customers. There must be sales of their increase. And one is far more likely to get fair prices for what one has to sell, from people whose preferences one has studied, than from people who in their hearts have resented the introduction of novelties into the district, to take away the credit which they honestly believe the local favourites to deserve.

The modern practice of encouraging strangers only, is at least as hazardous with farm horses as it is with farm cattle.

There is no more frequent topic among would-be leaders of the agricultural section than to enlarge on the enormous prices now being realized for picked specimens of the heaviest breeds of draught horses, and to advice their hearers "to go and do likewise." "Get rid of your old Dobbins and Smilers is the cry, and go in for Prince Johns and Knights of the Shire." As it seems to me—and I would like the Editor to give his opinion—this is as bad advice as can be given broadcast. In carthorse breeding, more perhaps than in any other, the great thing to aim at seems to be to suit one's most certain customer—oneself. To breed and rear the very best for home use and not for sale is always the safest course for an arable farmer. You *may* of course meet with a customer from the town, who will give a fancy price for a horse which he likes; but you yourself certainly will want some day to mend your own teams, and to make these more efficient. The difference of the year's end, between the cost o

cultivation done on the farm by quick-stepping, capable handy horses, and the work "dobbered" over by slower and heavier ones, comes, on light land, to a very serious item on the wrong side of the balance sheet. (1) Now quick stepping, hardy docile horses, if they are to be bred at all with certainty, will have, if the rules of breeding are worth anything, to be bred by choosing *both* parents, sire as well as dam, for these special characteristics. To maintain that one can breed good, moderate sized-clean legged carthorses from the under sized colts got in great numbers when Shire horse breeding is attempted, is not wise. It is not here that the old local sorts want superseding. The type of carthorse which in the last century satisfied the wants of the farmers in Norfolk (England) had its merits, or it would not have obtained entire possession of that country.

The farmers of those days, most of whom lived with their teams and worked with them, knew a good deal more about what makes a farm horse efficient than do the modern occupiers of farms of say 500 acres, who give their orders overnight to a bailiff and think that his teams to be "the thing," must resemble as closely as possible those of Bung's, the county brewer, or those animals in the railway drays. (2)

There is no fact about breeding which has been ascertained more clearly than this, that, to get—and fix—a type of any domestic animal—there must be the greatest care in selecting *both* sides for a succession of generations.

To suppose that the best type of farm horse for light or mixed soil land will ever be produced from exceptionally heavy sires, is like expecting a satisfactory flock of Southdowns to be obtained from the under-sized lambs in an Oxford flock; or a satisfactory herd of Ayrshire cows by picking out those heifers of West country or Yorkshire dairies which are smaller than the rest. It is universally true that if one wants special points in any animal, one must breed persistently for those points. If the very best farm horses are wanted for farm work, they must be looked for from using stallions and mares, which *both* are known to have, and to inherit, the characteristics sought for. It is just as absurd to assume that there is but *one* good breed of draught horses, as to say there but is *one* good breed of cattle. If one had told those Sussex people who crowded to the before mentioned sale, that they ought not to go in for these Sussex cattle (which have been proved to suit the county) it is just possible that the advice given might have been deemed not only impertinent, but also foolish.

Yet, this is as nothing, in the way of audacity, to the speaker at a meeting of the Norfolk Chamber of Agriculture, some years ago, who strongly advised that the occupiers of the light and breezy land of that county, should give up what suited their fathers, and take up with the style of farm horse which has grown up in the ooze and fog of the Fen-country. W. R. GILBERT.

(1) Very sound reasoning indeed ED.

(2) All of which should be bred by specialists, whose land, like Huntingdonshire and Derbyshire, is peculiarly adapted to the purpose. ED.

The Poultry-Yard.

FARMERS IMPROVE YOUR STOCK.

Are you aware that your hens can be made to pay a handsome profit—in fact, pay better perhaps than almost any other crop you can raise on your farms?

At present you probably keep a few hens, all of more or less doubtful age, and none of any particular breed. Your hens are laying fairly well, and will continue until, perhaps, November. This, because they are old, and being so will moult late. In November, or before, they will stop laying and begin to moult; for three long months, when eggs are high in price, you will gather one or two a day. You are disgusted; thinking of last spring, when you gathered your small basket full each day; or, on the other hand, you take it as a matter of course that hens are "shedding" hence you do not expect anything from them. You can change all this very easily. When your hens stop laying, kill them off and take them to market. They will bring, say, sixty cents each. If you have one hundred, perhaps you may get $60 for them. With this you can purchase from some first class breeder some of his culls. These culls will be rejected specimens of his stock, but of the same blood as the best he has, but unfortunately not up to his standard in markings, shape, color, etc. This does not concern you, as you are not breeding for the show-room. If you want a good general purpose fowl, and one with which you

may be familiar in name, take the Barred Plymouth-Rocks ; your old henhouse may do, if cleaned out, and divided into two or three coops, twenty hens to a coop. If not, a new one can be well and cheaply built. Your new stock, coming from a first class breeder, will probably have nearly finished moulting, and will begin to lay in two weeks after you have housed them. The delay is caused by moving them from his place to yours. Feed them well ; a mash in the morning, as early as possible, consisting of about one third ground corn and oats, one third bran and one third middlings. This should be prepared, the night before, with boiling water, thoroughly mixed and left to stand all night, covered with a bag. In feeding this, care should be taken not to give them all they want or can eat. Make them leave off hungry, they will look for more, and in doing so will eat all up clean and keep exercising. About 10.30 o'clock, throw in four good handsful of whole oats or wheat, to each pen, well scattered and mixed up in the litter, which may be composed of short straw, leaves, etc., thus compelling them to exercise still more. At night, say, 4 o'clock in fall and winter, give them whole corn or barley, or oats and wheat mixed—all they will eat up clean. This will fill their crops and keep them warm and comfortable all night. Always keep a fresh cabbage hung up for them to pick at.

Let your coops or pens always be supplied with a water-can (a common wooden pail will do, cut down a little on one side) ; a box three by two feet square, six to eight inches high, filled with dry earth or sand, or sifted coal-ashes, for dusting purposes, and a small box for broken clam or oyster shells. If living on the banks of, or near the St. Lawrence, you can easily gather shells on the beach and crush them in a mill, or they may be bought from dealers in poultry-supplies or seedsmen, who have them prepared purposely for sale. Let your hens out every day, except when the snow is on the ground. No matter how cold the weather, they will enjoy it.

Now you will say, that all this is a great deal of trouble. Yes, it is some trouble ; but do you hesitate to feed and care for your horses all the winter, whether they work or not? Your reward will come ; your hens will lay throughout the winter, you will get eggs every day from each hen, on an average, and you can easily sell them to private customers, from November 10th to February 15th, if not longer, at from thirty to forty cents a dozen. I have paid myself as high as fifty cents per dozen for eggs in the March of the last two years, and then not be sure that all were sound.

Remember your hens have cost you but little ; you have only exchanged your old stock for new ; your actual expense has been feed. It has been computed by the best poultry authorities that a hen costs to feed one dollar a year, provided all feed is bought, and none raised ; say, having 60 hens, your bill for three months will be therefore about $15.00, leaving you a good margin for profit, which you have made during the months that your old stock would have moulted, and during which time you would have sold no eggs, or very few at best. Perhaps you will say, I cannot get such prices for eggs, say thirty or thirty-five cents per dozen. Did you ever try? You have not had fresh eggs to sell during these months, so you cannot judge, without knowing.

Strictly fresh eggs gathered every day and sold when not over two or three days old, put up in neat packages of one dozen each, will sell to private customers, and to many grocers even, who are very glad to get guaranteed eggs at thirty-five cents and more. I have known several instances where milkmen, having city routes in the cities of Quebec and Montreal, are glad to buy eggs that they are sure of, paying thirty-five cents and selling them to their customers at from forty to fifty cents a dozen, thus making a profit which might be just as well gained by the farmer himself ; by advertising your eggs and stock for sale, you will get more customers than you can supply when living even 12 or 15 miles from the city.

Try it ; nothing risked, nothing gained, is as true for the farmer as the shopkeeper or tradesman. Advertise in the city papers and make arrangements with a good trustworthy grocer to take your eggs, butter, and anything you have for sale, and be sure to furnish only first class goods, put up in handsome packages, such as their customers will buy every week, and my word for it you will find that the product of your poultry-yard will become in a short time one of the best paying products of your farm.

S. J. ANDRES.

The Dairy.

FOOD AND MILK.

The question between Mr. McConnell and his opponents in these columns (1) appears to be on his side, whether a closer albuminoid ratio in the food of cows produces a larger percentage of fat in the milk—whether, in other words, assuming 1 : 5·5 as the standard albuminoid ratio, a food ration with 1 : 4, would give more fat. His answer to this is a most emphatic, no it will not ; and he appeals to experiments in all parts of the world which appear to prove that is view is right.

Those who have been arguing on the other side appear to have used the word food in its wider sense, and the point of their contention is that it is possible by altering the food of cows to cause them to produce milk giving an increased percentage of fat. This is surely a point of the greatest importance to dairy farmers, and bears the same relation to the albuminoid ratio question as the whole does to its part.

There is one difficulty in comparing the results of science and practice on this point which is responsible for much haziness; the scientific experimenter estimates fat in milk by a method which is exact, and his resuls really give the the amount of fat actually present, the practical man, on the other hand, estimates by the amount of butter which he is able to obtain from the milk, and takes no account of fat left in the skim or buttermilk. This latter practically resolves itself into two questions. 1. How does food affect the amount of fat in milk? 2. How does it affect the churnability of this fat ? and possibly purely practical men are too apt to overlook the fact that to obtain a reliable answer to these, we must proceed to attack one at a time.

The first point to be settled is how far it is possible to influence the percentage of fat in milk by varying the feeding, and this is a point which has been much investigated, though we can hardly say that as yet the results are sufficiently definite. Milk is supposed by most of our best authorities to be, in the main, a product of the decomposition of the gland or other organized tissues, and the explanation of the process, so far as relates to the fat, given by Soseblet and others, as stated by Dr. Miller in the J.R.A.S.E., December 1897, is that under the influence of food poor in fat, the milk fat is newly formed fat of a peculiar character containing a large amount of volatile fatty acids, and formed by this breaking down of tissue. With food free from fat this normal butter-fat alone can be formed in milk, and abundant feeding with nutritive, but non-fatty food can only increase the total production of fat by increasing the decomposing tissues, in which case the other constituents of milk are increased equally with the fat. If this be the true explanation of the process, it confirms and explains satisfactorily Mr. McConnell's position as to the albuminoid ratio, and its effect on the fat of milk.

As Professor Warington has shown (J.R.A.S.E., June 1898), that milk fat, however, must in some cases at least be produced from the other constituents of food. It is at any rate capable of being produced from them. Taking first the fat as the one most likely to be active in this respect. Soseblet considered that fat in food can produce fat in milk by producing a migration of body fat to the milk, and that in feeding with the usual mixed foods the milk fat is a mixture of normal milk fat (produced by the decomposition of tissues) and of body fat. A theory strongly held at one time was that milk was formed by the transudation of its contituents from the blood through the walls of the capillaries in the same way, reversed of course, that the products of the action of the digestive fluids on foods pass into the blood. The fats of foods are taken into the blood partly after having been saponified, and rendered soluble by the ferments and alkalis of the bile and pancreatic juice, and partly in the form of an emulsion produced in the iutestines by these juices. It has been shown that in the case of dogs starved to get rid of all dog fat in the body, and then fed on mutton fat and meat, the fat of the food may be deposited practically unchanged in the body of the dog. Munk produced in this way dog fat, which, according to chemical analysis' must have contained at least 96 per cent. of mutton fat and obtained similar results with rape oil.

If these results are obtainable in the case of body fat, why not also in the case of milk fat ? May not the fat in the food after having been taken into the blood pass thence to the milk ? In this case, of course, it will be possible to influence the fat in milk by the fat in the food. The cow being herbivorous does not lend itself so readily

(1) i. e., of the *English Agricultural Gazette.*

to fat feeding experiments as the dog, but experiments hove been made which strougly support this view. Thus in experiments at the Texas experimental station, it has been found that the kidney, caul, and body fat of steers fed on cotton-seed products, has a melting point 7 deg., 5 deg., and 14 deg. F. higher than the corresponding fats of corn fed steers. In the recent number of the "Journal of the Board of Agriculture" we have reported an experiment on feeding cows with cottoncake, the being to ascertain whether the reacting principle of the cotton oil contained in the cak will pass to the milk fat of cows fed on it, as if so, the cotton oil test applied to butter might lead to a suspicion that it was adulterated with this substance. It was found that the butter produced by these cows did react, did—in other words—contain the reacting principle of cotton oil, and it is a fair presumption that if this principle be present, the itself is. It is true no reaction was observable in the case of sesame cake, but the fact remains that we have evidence to show that the oil in foods may appear unchanged in the milk.

Again, Dr. Miller in the paper above referred to, cites Soseblet as having shown that sesame oil and other fats when fed to cows in the form of an emulsion actually does increase the percentage of fat in the milk, and furthur, the butter fat so produced contained nearly 50 per cent. less of the volatile fatty acids characteristic of it and as Dr. Miller puts it, would, on analysis, be judge to be a mixture of equal parts of oil and true butter-fat. It is true a difficulty appears as to the melting point of the butter, which was much higher than such a mixture would give, but there are considerations which may account for this, and in their absence it is hardlysafe to judge solely by the meeting point. Mr. Speir's experiments in the Transactions of the H. A. S., taking the average fat in the milk in the last four weeks of each period of five, and comparing with the fat in the food, support this view. The five periods which give the highest average of fat percentage ranging from 1-27 lb. to 0-96 lb. per diem, and the other results are not discordant. It should be noted that these five periods are the only ones which the albuminoid ratio was narrower than 1 : 55 and also that the butter during these periods has the highest melting point, thongh two of them (the third and fourth in order of melting points) are marked soft, the others being described as firm.

This affords also a partial explanation of the difference in the butter produced by different foods which can hardly be due to the albuminoids acting through the decomposition of tissue; and we may also note that in the early stages of lactation when we should expect glandular activity to be greatest the butterfat coniain more volatile fatty acids than later, and these volatile fats are the characteristic distinctive of true butter-fat produced as is believed by the breaking down of tissues.

Professor Warrington (*loc. cit.*) has also shown that a portion of the fat of butter may be produced from the carbohydrates of the food, and the method may perhaps be explained in the following passage from Professor Henry's "Feeds and Feeding:" —"It has been found that butyric caproic and higher solid fatty acids are formed from carbohydrates in putrefactive processess. We have seen that fatty acids are readily taken up by the animal system and changed to fats. This being true, there is no theoretical difficulty in the way of the formation of the fat of milk from carbohydrates."

By far the most important part of the subject is, however, that relating to the influence of the fat of the foods, which is a point well worthy of being the subject of a carefully considered series of experiments. Perhaps Mr. McConnell will favour us with his views on it. J. H. TIFFEN.

26, *Dover Street, Hull.* *Eng. Ag. Gazette.*

The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

NITRATE OF SODA IN THE GARDEN.

As the time is rapidly approaching when we shall be called upon to consider what will be the best means to secure a good crop, a few words on the important question of nitrate of soda should be appropriate. It has been said that to the gardener nitrate is power. Let us enquire why. In the first place nitrogen is one of the three chief constituents of the food which plants receive from the soil. Now all good garden soil must be rich in nitrogen, but it is comparatively useless until it is in a form in which it can be taken into the plant, and it only becomes thus available after it has been converted into nitrate. This change

takes place by means of a process in connection with the growth of minute organisms which exist in the soil, especially when moist and porous, and when the weather is warm they are the most active. The conversion of the inert nitrogen of the soil into plant food proceeds with rapidity during the summer and is as rapidly used by the crop or washed down, after the crop is off, by the heavy rains of Autumn. Now for an early crop the garden will be wanting in its supply of nitric acid, however a heavy use may have been made of farm yard manure. These early crops will not grow vigorously until nitrification has been caused to take place as above stated, and this cannot be until the temperature is suitable.

No one can deny the advantage to be gained by the use of farm yard manure for Summer crops, but for early growth, an extra stimulant can be found in nitrate of soda. All plants require more or less of this food ingredient and the legumes have the wonderful faculty of drawing their supplies of it from the air. However large may be the ratio, in the soil, of all the other ingredients of plant food, phosphoric acid, potash, magnesia, lime, etc., no crop can be an abundant one without a continuous and unlimited supply of nitrate.

And be it noted as of much importance, that one of the chief characteristics of nitrate of soda is the rapidity of its action, and the freedom with which it penetrates the soil, thus the roots do not perish while they are in search of it, and hence, the plants are in better condition to sustain their vigour in long continued seasons of drought.

And this rapid effect upon growing plants has its advantages with respect to the application of nitrate as feed ration, for instance; when the seedling is well rooted and e tablished in the soil a moderate dressing of nitrate of soda will assist its further developement. When a plan is in bloom, or coming into blossom the quality and colour of the flowers may be improved by another application —and the fruit in like manner—so that stem, leaf, wood, flower of fruit may be advanced and developed by the use of the nitrate, if applied with judgment and at the time it is needed. It is in these matters that the scientific and pains taking gardener acquires a power over Nature by adapting her workings to the purpose he has in view as regards quantity of nitrate of soda to be used, it is difficult to lay down any absolute rule because one kind of plant will require more than another, and the conditions of soil and weather will vary. Therefore the practical gardener will understand that careful trials and observations are necessary, but he may rest assured, from the experience of others that for these he will be rewarded in the end. A moderate dressing of nitrate would be a handful mixed with twice the quantity of dry earth and scattered over eight square yards of land, or about 1½ cwt to the acre. In the case of potatoes, beet root, carrot, etc., the nitrate should be worked into the land either just before, or with the seed but should not be allowed to come into direct contact with it.

But as a general rule the best time to make the application is as soon as the young plant has exhausted the supply of food contained in the parent seed, and the dressing may be repeated at intervals of two or three weeks during the period of growth.

As before stated the Leguminous plants do not stand so much in need of nitrate on account of their natural ability to seek their own supply but the non-leguminous plants are those which will derive benefit from its use as above described: asparagus, beets, cabbage, carrots, cauliflowers, celery, cucumbers, lettuce, onions, parsnips, potatoes, salsify, tomatoes, turnips, currants, gooseberries, raspberries, strawberries, melons, pumpkins.

Fruit and ornamental trees can also be nourished and rendered less liable to the evil effects produced by drought insects, or fungous parasites, by the use of nitrate of soda.

In the autumn spread over the ground, under the branches and a foot or two beyond their outer circle, a mixture of equal parts of potash-salts and superphosphate of lime. Then dig the soil and leave until growth begins in the spring, then sow it with 7 lbs to the 100 square yards of nitrate of soda; the mixture of potash and superphosphate should be 10 lbs. to the 100 square yards. Currant bushes will yield surprisingly large crops, if a top dressing of nitrate of soda is applied to each side of the row early in the spring. Nitrate of soda in solution may be used with good effect upon any garden crop but for plants in pots, to use it thus is necessary. The solution used on dry soil should be weaker than on moist, and the application in the case of young and rapidly growing plants may be made every week or ten days, and for roses, tomatoes and such gross feeding plants, when in full growth, it may be used

every three or four days, the dark color of the leaves will indicate when to discontinue the dressings. The usual strength of the moisture is one quarter to one half of the nitrate to 1 gallon of water; it is better not to make the mixture too strong but to use it frequently. On some plants such as Palms, foliage plants, and Chrysanthenums, it has an almost magical effect. When mixed with earth for potting or horticultural purposes it should be broken up quite fine so that there will be no lumps. A sample of 95 per cent purity, will insure its containing 15½ to 16 per cent of nitrogen.

The discovery of the uses of nitrate of soda in gardening has made the science more interesting than ever and the results more certain, for by its use they can be controled in a manner never dreamed of by our forefathers.

GEO. MOORE.

A HARDY PERENNIAL.

Helleborus.—Christmas Rose.

To call this a rose is a misnomer, for it does not belong to the rose family of plants but to the

Ranunculuses, (1) and the species Hellebore, however, the plant no doubt takes its popular name, "Christmas rose," from its peculiar habit of flowering in the winter.

It blooms freely in the open garden at a time when there are no other flowers. In this climate, to be quite successful, it is well to cover the plants with a little frame to prevent crushing the buds, and then they will repay our trouble with lovely blossoms, of a variety of colors, and evergreen foliage—they grow about 1 foot high.

Helleborus-niger ; flowers, pure white with yellow anthers.

H. niger, angustifolius,—narrow leafed with similar flowers to the last.

H. atro-rubens—palmate foliage and bright purple flowers—are the three best varieties.

(1) Ranunculus, in Latin, is "a little frog." ED.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

THE FASHIONS.

To follow the fashions of to day is most bewildering. Modest people can only afford a passing glance at them, and, may be, pick up a few ideas suitable for themselves. On paper, they look very lovely, but quite unsuitable for all practical purposes, and indeed they ought not and are only fit to be worn by people who sit in a carriage all the time. Some of the skirts are made so tight to the figure that there is not a wrinkle anywhere, and, to keep them in place, are fastened a long way down the back, after which they begin to flow out till they end in a fairly long train. One can easily see how very unsuitable such a skirt is for walking in, and any person who is foolish enough to try the experiment richly deserves the trouble of taking care of it in the muddy streets.

THE BLOUSE

The blouse still retains its great popularity, its great simplicity making it a great favourite for morning wear, a nicely got up cotton-blouse is so becoming to young people, and can be worn with any coloured skirt, and, just now, when the weather is not too warm to allow of going out without a jacket, it is very handy and the jacket slips on so easily over it.

Made up in silk, the blouse can be made to help in a most charming toilette for any occasion ;

there is a large scrope for trimming it, but lace seems to be worn as the most favourite; a cream lace trimming daintily I might say thrown about it, puffed in some parts, and gathered in others, and allowed to fall about and tacked here and there with artistic taste will help to make the blouse very useful on an emergency. Cream silk will wash and can be done over many times, so also will pink, in fact these are numerous colours to choose from, but some of them will not wash.

The sleeves have to be about as small as possible to be fashionable, but sensible people will do well and not go to any extreme; a medium course is by far the best, as fashions change with the month.

The colours worn for skirts this spring are mostly browns, in many shades; blues, fawns and many others. not forgetting plaids which are very much in vogue now, but are decidedly only fit for tall people and should be made up on the cross-way of the goods. Plaids only make short people look shorter, therefore should be avoided by stout or short persons.

SIMPLICITY IN DRESS

Despite all the ornamention it is the fashion nowadays to bestow on our gowns and coats, nothing after all looks so stylish for ordinary wear as simply-made garments. A brown or other dark-coloured cloth coat and skirt always looks well in the street, but it must be well-cut and fitted. After all, it is the little attention to detail which makes the great difference between the well-dressed and the dowdy-looking woman. A well dressed woman nowadays is fastidious as to her shoes, her gloves, and her collars; also great attention must be paid to the hair, which must be kept in beautiful order, for untidiness in this respect will spoil her appearance, no matter how smart or becoming her hat or bonnet may be.

POINTS OF BEAUTY

Well-shaped hands and feet have always been regarded as distinctive marks of beauty. While one cannot regulate the size of these members, she can always have her hands and nails well cared for, and her feet becomingly dressed. A woman who is well gloved and well shod makes a very creditable appearance even if the rest of her dress be somewhat shabby. If one has not very much money to spend on her costume, let her not invest so much in her gown and wrap comparatively as she does in fine, well-fitting shoes, in gloves of good quality and colour to suit her dress, and in a tasteful hat. The extremities give a tone to the toilette. Soiled, ill-fitting, or worn-out gloves, with yawning holes at the finger ends and buttons off, will ruin any costume, and detract from the impression of beauty which a woman should make upon the eye of the beholder.

WHEN TO WEAR A VEIL.

She who would keep her face fair must not scorn to wear a veil in some weathers. When there is a soft rain falling, or a fog or Scotch mist makes the air damp, the complexion will be benefitted by exposure to the elements. But when bitter winds cut, or scorching suns burns, a veil, even of the finest mesh, is not to be despised. Heavy veils are not beneficial, as they render the skin supersensitive. But a single veil of thinnest net, while it does not exclude the air, is nevertheless a very necessary protection to the skin.

SUPPER DISHES.

AN ONION ENTREE.

Put a piece of butter the size of a walnut in a sauce-pan, slice a Spanish onion into it, and simmer for seven minutes. Then cut a quarter of a pound of mild cheese into small pieces, and add it with half a cup-ful of new milk. Stir well until all are well mixed. Add salt and cayenne pepper. Beat up an egg, stir gradually into the saucepan, stir again for three minutes and serve quickly, very hot.

SAVOURY RICE.

Ingredients—

½ lb. rice
½ gill of cream or milk.
1 dessertspoonfull curry powder.
A small onion and an apple.
Butter or dripping.

Method: Chop the onion and apple, and fry them in butter or dripping till tender. Boil the rice as for curry, drain it, then mix with the other ingredients. Put all in the saucepan, stir over the fire till quite hot, then serve in a pyramid on a hot dish.

USEFUL HINTS.

TREATMENT OF BURNS.

If a burn should extend over a large surface, call in a doctor immediately, but in every family small burns are constantly occurring that are not dangerous, however painful they may be. The first thing to remember when treating a burn is that it must be shut up from the air. Anything which keeps out the air is good for a burn, but some specifics are better than others. Carron oil, is one of the finest things for a burn, and a bottle of it should be kept in readiness. Carron oil, as it is called, is a mixture of linseed oil and lime water. A soft cloth dipped in this mixture should be laid over the burn, then covered with a little oiled silk to keep in the moisture. When the cloth gets dry, wet another, and keep on till the fire, as it is called, has gone out of the wound. Flour or carbonate of soda, if no oil is to be had, keeps the air out, but nothing does so well for the parched skin as the carron oil.

AFTER A BRUISE.

To prevent the skin from being discolored after a bruise, apply salt butter quickly. Very hot bathing of the part is also efficacious.

A WOUND FROM A NAIL.

For a wound made by running a nail, in the foot, apply a piece of salt pork and bind it on the foot, and keep the foot at rest on a chair or a stool for several days, if need be, to avoid inflammation and possibly lockjaw.

AFTER SCARLET FEVER.

After scarlet fever the room should be thoroughly fumigated with sulphur, being shut up for twenty-four hours, with the sulphur burning in it. After this all the paper should be stripped from the walls, which should be repapered, and the ceiling whitewashed.

A FLANNEL NIGHT-DRESS.

A soft flannel night-dress is the best for rheumatic, anæmic and feeble persons, also for feeble children. Feeble people generally ought to wear wool next to the skin from head to foot.

USEFUL TO KNOW.

When a child is teething and feverish, it may be soothed by a bath in warm water, in which a large spoonful of saleratus, or soda, has been dissolved. Remember it is easier to practise the ounce of prevention than the pound of cure with regard to our little ones. Simple and healthful food at regular hours, plenty of outdoor air and exercise when the weather is clear, well-ventilated rooms and quiet refreshing sleep will do wonders in keeping a child well and happy. If a child cannot go from breakfast to dinner without something to eat, let him have a slice of bread and butter, some bread and milk, or some ripe, fresh fruit; but have some regularity about this, in dividing the time between the two regular meals. The constant nibbling habit which so many children are allowed to acquire is very pernicious to their health, besides taking away all appetite and desire for their regular meals. It is a constant task on their little stomachs, which in time will weaken them and bring on a long list of evils.

Swine.

THE DOMINION SWINE BREEDERS'.

A meeting of the directors of this association was held in Toronto, Feb. 8th, 1899. A committee was appointed to conduct comparative feeding test of hogs along certain lines. The packers have agreed to co-operate in this with a view to finding out the best way of growing the best bacon hogs, and to find out the cause of soft bacon. It was also decided to publish two volumes of the swine records this year, so as to bring them up to date. It was also decided to increase the prizes won by any exhibitor 10 per cent. on his furnishing a statement as to how the animals were fed, etc., the same as mentioned in the report of the sheep breeders. The prize list of the Provincial Fat Stock Show was thoroughly revised. The block tests for hogs will be continued next year.

THE PORK THAT WILL SELL.

At the recent meeting of the Indiana swine breeders, H. Speers, who buys for a large pork curing establishment, said: "The feeding has

much to do with the leanness and flavor of pork. A hog fed on boiled potatoes, crushed oats and peas, along with corn, will make leaner and better flavored meat than if fed on the raw, uncooked corn used in the United States. A corn-fed hog when smoked gets yellow in the fat—a thing not known in the products of England and Denmark. The taste of the consumer is changing and our production must be changed to suit it. In the large manufacturing cities of Great Britain, where much of our product is consumed, the people lead an indoor life, confined to large workshops and faceories, and it is well-known to you all that the tastes of such people are not in common with those who lead an outdoor life. These are the people who have to be pleased and who are willing to pay for what does please them, and I might say that these are the people we must please if we are to stay in the business. It is utterly useless for our American hog-raiser to say that the corn-fed, large, fat hog is the best. You may have your opinion, but the consumer who buys the meat is going to be his own judge, and I know that he unquestionably prefers leanness to fatness. It is the buyer who must be pleased if we are to get the highest price for our pork products. I presume that a good many farmers will say that it would be almost impossible to raise these lean hogs on a profitable basis in this country. They themselves are the best judges of that. I am attempting, as near as my experience and knowledge go, to give you the facts in the case. I think it is worth the consideration and careful thought of the American farmer to look around him and see what his neighbor, the Canadian farmer is doing in the line of hog raising. The exports of Canadian hog products during the past ten years show an enormous increase. This speaks volumes for the breeding of the Canadian hog, the manner of feeding and the all-round superior quality of Canadian pork, which commands and maintains a higher price than ours, notwithstanding their ever-increasing export business."—*N.-W. Farmer.*

PRODUCING EXPORT BACON

At the annual meeting of the Dominion Swine Breeders' Association, held in Brantford on December 2nd last, a report of which was given in FARMING for Dec. 13th, Mr. G E. Day, B.S.A., Agriculturist, Ontario Agricultural College, read a very valuable paper on the production of bacon for the export trade. This trade is an important one, and particular attention must be given to the production of the right quality of bacon if we hope to develop the export trade in that article. The quality of Canadian bacon does not come in touch so much with American as with the Irish and Danish article.

In his address Prof. Day states that the best live weight of hogs for the production of the best Wiltshire bacon range from 170 pounds to 190 pounds, though these are not cast-iron limits- The hog should be light in head, jowl, neck and shoulder. He should have medium width of back, great length and depth of side, good thickness through from side to side of belly, well developed ham, and medium bone. He should be active and sprightly and possess general smoothness of body, showing no coarseness in any part. When cut down the back the fat should be of uniform thickness over loin and shoulder, and firm in texture, while the belly should be thick. The carcass should show a good development of lean meat, with a fair amount of fat. In addition to a uniformity in quality there must also be a uniformity in quantity if the trade in Wiltshires is to be developed.

One of the objections to the bacon hog is that the packer wants the hog before it is heavy enough to satisfy the feeder. This objection is hardly tenable as it has been clearly proved at various times that the cost of producing a pound of gain steadily increases as the hog grows heavier. From frequent weighings of 36 hogs fed last summer at the O.A.C. the following facts were brought out: While increasing in live weight from 54 lbs. to 82 lbs., hogs required 3.10 lbs. meal per lb. gain; from 82 lbs. to 115 lbs., 3.75 lbs. meal per 1 lb. gain; from 115 lbs. to 148 lbs., 4.38 lbs meal per 1 lb. gain, and from 148 lbs. to 170 lbs. 4.55 lbs. meal per 1 lb. gain. The greatest and most common objection to the bacon hog is that it costs more to produce it than it does to produce the fatter types. This contention is not borne out by facts. In the latest experiments at Guelph the group which evinced the most desirable characteristics from a packer's standpoint was first out of six in point of economy of gain. The group, scored second by the packer, was fourth in economy of gain, while the group, scored third by the packer, was second in economy of gain.

The bacon hog is born not made. Food can modify but it cannot overcome individuality, and

the foundation of our bacon industry rests upon judicious selection and mating of breeding stock. In the investigations at the college very good bacon hogs have been found practically in all the leading breeds. In some cases, however, those which came nearest to the packer's standard were furthest from the standard of excellence for the breed. The great bulk of the hogs sent to the factory is made up of grades and crosses and not of pure-bred hogs. What is the best cross is not known. However, if a sow possesses undesirable qualities from a bacon standpoint, it is foll to mate her with a boar of a breed characterized by the same qualities and hope to produce a bacon hog.

One of the great difficulties which the packers have to encounter is the soft condition of the fat of many hogs. This is something that feeders should give special attention to. Losses from soft bacon will ultimately fall upon the producer. Soft bacon does not mean fat bacon. It means a soft condition of the fat, which develops while the bacon is in the salt, and reduces the value of the side according to its degree. An absolutely soft side is comparatively worthless, and between this condition and firmness there are all shades and degrees of tenderness. It is claimed that this softness is due to over feeding and forcing hogs to heavy weights at an early age. This may be the case where forcing is carried to extremes, but in the experiments at the college more softness has been found among unthrifty hogs that were too lean to be slaughtered than among heavier and fatter hogs which had received the same food and treatment. The blame is also put upon the feeding of corn. But soft bacon has been produced at the college without feeding corn. It is also claimed that soft bacon is due to the lack of exercise. Yet, perfectly firm bacon has been produced from hogs that have had the least possible exercise from time of weaning to slaughtering. The feeding of clover is also blamed for it, yet reports are to hand of hogs that were sent from a clover pasture to the factory and pronounced first-class. From this it seems clear that softness is not due to any one cause, but may result from various causes, acting either singly or in conjunction.

Investigations regarding the causes which may produce soft bacon are merely in the initial stages. The most extensive and reliable experiments on record regarding the influence of food on the firmness of bacon are those conducted at Copenhagen, Denmark. These experiments go to show that the continued feeding of corn to young hogs tends to produce softer bacon than when barley was fed alone, and that the softness varied according to the proportion of corn in the ration, or the length of time during which corn was fed. They also showed that wheat, bran, and rye shorts produced similar bad effects. At the College, from experiments conducted previous to 1898, it had been noted that hogs fed in pens from the time they were two months old were more seriously faulted for tenderness of fat than similar hogs fed in outside lots where they had plenty of exercise. It was also noticed that hogs which had exercise till they weighed 100 pounds and were then put in pens and fattened rapidly were pronounced firm. These examinations were made before the bacon was salted, and are therefore not altogether reliable. During 1898 hogs were fed in six different ways, and the bacon was examined after it had come out of the salt, so that there could be no mistake about its firmness. The results of these experiments are summarized as follows :

Thirty-six pure-bred hogs were purchased when from 7 to 9 weeks old. They were divided into three groups, each group containing two hogs of each of six different breeds. One group was fed in pens with small outside yards. From July 4th to August 19th the ration was wheat middlings; from August 19th to Sept. 12th it was equal parts by weight of barley and shorts; and from Sept. 12th to Oct. 24th, it was equal parts by weight of peas, barley and shorts. When the carcases came out of the salt the condition was very unsatisfactory. Only four out of the twelve were positively firm; one was slightly tender and the remaining seven ranged from decidedly tender to soft. Another group was kept in the same building in exactly similar pens and fed exactly the same ration; but about two pounds of whey were fed with each pound of meal. When these carcases came out of the salt only one showed any sign of tenderness and the remaining eleven were first-class as regards firmness. Such a striking difference cannot be accounted for on any other basis than that the whey was responsible for the superiority of the second group. The third group was allowed the run of a half-acre lot and fed exactly the same ration as the first group. This group came out of the salt in decidedly better condition than the first group, but not equal to the group which received whey. By far the greater amount of tenderness was found among the lighter and

leaner hogs, and since several unthrifty hogs had been purposely put into the third group, the group was placed at a disadvantage. The hogs in the third group, which were heavy and fat enough for Wiltshire bacon, were all firm but one.

Twelve strong fleshy, store grade hogs, fresh from the stubble, and averaging about 109 pounds each live weight, were also purchased. These were put on full feed in pens for six weeks before slaughtering. Part werefed cornmeal alone, part were fed a two-thirds ration of cornmeal with all the rape they would eat, and part were fed equal parts by weight of peas, barley and shorts. All these hogs produced firm bacon except one in the peas, barley and shorts group, which was some what tender. There seems to be little danger, therefore, of spoiling hogs of this class with either corn or rape.

Twelve more grades were confined in pens from time of weaning to slaughtering. They were fed skim-milk and wheat middlings(except during about three weeks, when they were fed skim-milk with barley and shorts,) until they reached an average live weight of about 100 pounds. The skim-milk was then discontinued, and during the next six weeks some of them were fed cornmeal, others were fed equal parts by weight of peas, barley and shorts and the remainder was fed a two thirds ration of the peas, barley and shorts mixture, together with all the rape they would eat. All of these hogs produced firm bacon, excepting one in the group receiving peas, barley and shorts with rape. Te only practical difference between the feeding and treatment of these hogs until they reached 100 pounds anp the group of pure-breds, which gave such very bad results, consisted in feeding the grades skim-milk with their meal ration. From this it would appear that skim.milk has a very beneficial influence on the firmness of the bacon. The chief points in these experiments were given in a letter by Prof. Day in last week's issue.—*Farming.*

ABOUT "BACON" HOGS.

Much as been said and written within the last year or two about what it is the fashionto style as "bacon" hogs, and inferentially as vastly superior to anything produced by the hog-raisers of the United States who are content with such breeds as the Poland-Chinas, Berkshires and Chester Whites, and corn as their principal diet. To give an idea of the way "bacon" hogs and bacon making are discussed elsewhere, the following is given from the *Farmer's Advocate*, of London, Ontario Canada, dated August 20, 1898 :

How shall I breed, manage and feed the bacon pig? Will he pay me as well or better than the heavy, fat hog? These are live questions with a host of Canadian farmers, whose appetite for swine-raising was keenly whetted lately by six cents per pound, live weight, Toronto prices. A multitude of counselors have suddenly sprung up to tell the farmers "how to do it," but some of them tend to confusion, not safety, Solomon to the contrary notwithstanding. This is the breed, says one ; cross-breds are the thing, contends another; "feed peas," is the panacea of a third. In an "instructive" circular the other day we read that corn feeding made hard, dry, coarse bacon, with soft, oily, yellowish fat. We once saw the magic "Canadian pea fed" brand—the delight of political editors—going on boxes of bacon from hogs that never tasted a pea. A letter by a leading Toronto packing-house published in the rapport of Agricultural Commissioner Robertson, states, in reporting on the great excellence of wheat fed pork, that tee complaint in England about pea fed pork was that both fat and lean were too hard. The farmer usually gets the blame for every-thing, including some of the drover's work, but we never hear that any defects in the bacon, "soft" or "hard" originate in the packing-house. Seriously, however, we believe the fair-minded farmer will take the view that the should give heed to the character of hog wanted by the packer, who must understand the market end of the business, so far as is consistent with a reasonable margin of profit over cost of production. Let there be fair dealing on both sides, and an effort to get on common ground. As far as the *Farmer's Advocate* is concerned, we aim to get at the facts based on the experience of our staff in breeding and in feeding swine many years, for both butchers and export packers, extending observations and special researches into the results of experimental work, as well as into the methods pursued on farms where it is made a speciality. Intelligent farmers and breeders who have been engaged the greater part of a lifetime in swine-raising must surely be crediter with having learned something about their end of the business.

We have endeavored to set forth the needs of the bacon trade, according to the extended exper-

ience of the Ingersoll (Ontario) Packing Co: have briefly reviewed the Danise practice in bacon production, according to Mr. Ginge, a native of Danmark, who is not only at the present time giving his undivided attention as manager of the Canada Packing Co., to the production of bacon of high order, but who was for years closely identified with the Danish bacon trade with England; and facts are given as to the plan of the Irish curers to improve their product.

BREEDING.

On one hand, we have what is termed the special-purpose bacon type, such as the pure bred Tamworth; and at the other the heavy, oblong style of hog, common in the western states Besides the various pure breeds, we have the great army of varied grade and cross-bred swine. Canadian breeders for the past ten years have been aiming to conform the leading breeds more or less toward the bacon type, and this has had a corresponding effect on our swine generally, though many marketed are yet far from the packer's ideal.

Now the breed type of sire and dam fixes largely the character of the offspring. It is idle to fancy that any combination of feeds will convert the fat, dumpy Suffolk into the long, deep-sided, lean-meated bacon hog. As well expert a Jersey cow that converts her food into rich milk to be metamorphosed into a four-sided Aberdeen-Angus, feef to the heels. It is the well-breed hog, too, that converts his food into flesh at a profit He has been bred for years with the object of fixinf that in his nature. For generations several of the chief breeds of swine have flourished, and to-day all merits are not' nor are they likely to be wrapped up in one skin, be it red, white or black; and in our opinion no greater misfortune could befall live stock than to sweep away all breeds but one, even though the curers agreed as to which that should be. Without competition and emulation, progress would cease and degeneracy would set in.

Why does the packer ask for bacon type? No doubt because its product realizes his best profits; hence he can pay more for it, and if more costly to produce the farmer should get more for it. There is less competition in the fancy brands. The United States sends over $30,000,000 worth of pork products to the British markets, Canada less than $6,000,000; so, the less heavy fat pork we produce the less we will have to compete with the vast mass of that character which brings a lower price. The American farmer, with his model of a western Poland-China, for example, and cheap dent corn, especially when picked from the indigested droppings of steers—a comman system with them, which we cannot think would ever commend itself to the discriminating nostril of the *British consumer—say* he can produce so cheaply that he makes just as much money and does it easier, even though he gets less for his pigs than the Canadian. We will surely do better to take our chances at the top. Without dictating as to breeds let the farmer, in the choice of his brood sows (usually grades), and pure-bred males, look to the bacon form, including a good ham, and seek to get with it what is know as a good feeder, according to his best knowledge, judgement and conditions.

Let the young pigs, as they grow up have plenty of exercise, grass to pick in its season, and learn to feed at the trough with the dam. At two or three months they should be going on well. Don't allow them to get stunted on the one hand, nor too fat on the other. Feed them shorts, peas, barleys, oats, xheat, etc., mixed with skim milk or whey, so that they will get the elements (protein and ash) necessary to develop flesh and strong bone. At five or six months old, the finishing period, with heavier feeding, will begin. The packer seems to prefer attaining 180 average weight in about eight months, providing that lean dominates rather than fat. The fact is demonstrated beyond question, that as the hog grows heavier it costs more to put on each pound of flesh; but we are not aware that it has been shown, definetely, how the cost of a 180-pound pig at six months compares with that of the same weight at eight months. There should still be moderate exercise, pure in the pens, are scrupulous cleanliness.

We recommend feeding mixed grains, ground fine, as a rule, and soaked twelve to twenty-four hours before using. By mixing aright we get a ration that will go to make a better class or meat, and, we think, gain in palatability. Something green in summer, and pulped roots in winter aid digestion, and access to the soil promotes good health. If the pigs begin to get disordered and crippled up, vary the feeding and try a mixture of sulphur, charcoal and ashes, salt and a little bluestone, placed in a separate box or trough where they can take it at will. In a very and clear and able article, Professor Day, of the Ontario Agricultural College, explains the relation of foods to increase, which every feeder in Canada should

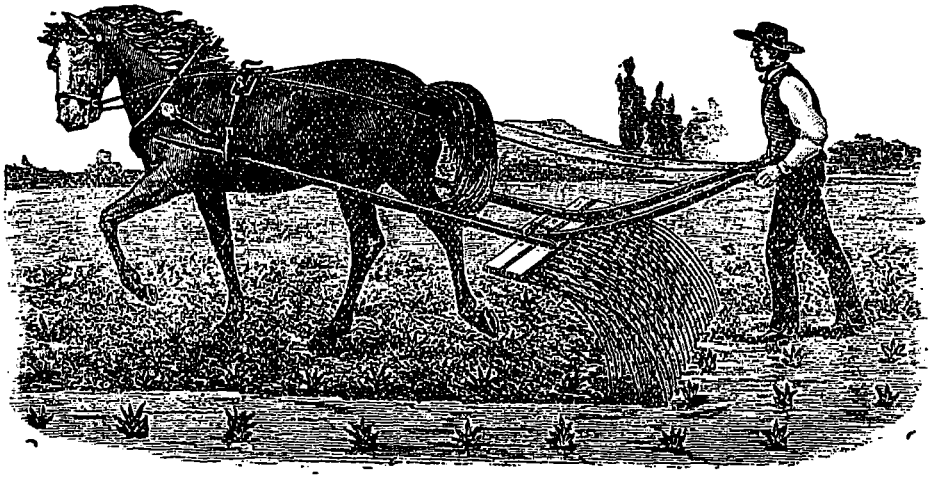
carefully study. No one grain is a perfect food for hogs. Seek to get an economical combination that will be rightly balanced for flesh, fat and heat (or energy) production. Barring peas in Manitoba and the Northwest, and some other sections, where "the bug" is troublesome, we grow all the leading grains to perfection, including the hard flint corn. Corn, however, is carbonaceous, largely fat and heat producing, so in feeding the bacon pig it must be used in limited quantities along with such food as shorts, oats, peas, wheat and barley. It is thought by some that the western dent corns are not equal to the hard Canada corn for fine quality of product. A bad generalsystem of pig management may be responsible for some defects attributed to certain foods. Barley is one of our best "all-round" pig feeds, and for bacon is regarded most favorably in Great Britain and Denmark. Ground peas alone make too heavy and compact a food, but a favorite way with many is to feed them soaked whole, especially to young pigs. Beans though not unlike peas, according to analysis, are regarded in great disfavor, as producing pork dark in color and of soft, inferior quality. In one or two limited district where grown extensively, owing to depressed prices the lower grades, especially, have been utilized in hog feeding.

Miscellaneous.

NATURE'S WORKING.

Nature is firmly established in her ways, and no amount of importuning will change them. Man is supposed to be endowed with flexibility that will enable him to adapt himself and his methods to the moods of Nature. The man who sits down and whines over a wet spell or gives way to despair over a drough is liable to end his days living off his relatives or the country. It's the man who tiles his wet land and who irrigates his dry land who succeeds. God gives the land and sends His sun and showers, but man's two hands, must do the rest—man's two hands and the brain that is behind them. The more brain the greater the success.

The above is an illustration of a "Weeder," manufactured by Messrs. David Maxwell & Sons, of St. Mary's, Ont., for the season of 1898. It is not a new instrument, however, and has been in



operation for some years in Canada and the United States. It is highly praised by all who have used it and seen it used on both sides of the line. There can be no doubt that it is the most effective implement for destroying weeds without any injury to the crop. We can recommend it to every farmer. Directions for the use of the weeder are furnished by the manufacturers.

APPLES FOR COLD CLIMATES

The limit of successful apple culture has been steadily moving northward. This movement has been accelerated by the planting of crab apples and Russian varieties, especially the selection of native hardy seedlings and the adoption of better orchard methods. The Vermont experiment station has been investigating this matter and finds

that Rhode Island greenings and the Baldwin can be produced in the southern and western portions and along Lake Champlain, but in the northern and eastern sections it is to cold for them. Of course there is an occasional locality beyond this district which is an exception.

At the Fruit Growers' Convention winter spraying of fruit was very strongly recommended. Now would be a good time to try it. Give the twigs and branches of the fruit trees a good spraying. This will go a long way towards reducing the need of spraying later on when you are more busy. By destroying the spores that are resting on the twigs the first lot of them will be destroyed. When the leaves come out spraying again will destroy those spores that may be on them. By this means much more thorough work can be done. Try it.

FARMERS OF FICTION

It is the misfortuune of farming that it has no competent chronicler; no writer of distinction has arisen who has made farmers and farming life generally his special theme; no one has done for them what Rudyard Kipling has done for the soldier, Clark Russell for the sailor, Ian Maclaren and J. M. Barrie for the Scottish peasantry, and what numerous other authers, specialists in their way, have done for other phases of our national character. Yet assuredly farmers deserve a scribe of their own. Fame and distinction await the man can limn for us, the farmer, as he actually is; who can enter into his feelings, describe his trials and triumphs, his methods of reasoning, his mannerisms, his quaint sayings, his humerous conceits. There is assuredly in this a rich vein yet unworked, that would surprise and delight many to whom farming is little more than a name and scarcely an honoured one at that. And if it did nothing more than supersede the caricatures that are now and again made to do duty as desc riptions of farming, it would deserve well of the agricutural community.

It is not that no one has attempted to describe a farmer; many have done so, and numerous pen portraits more or less faulty and incomplete, exist. As biography is one of the most fascinating of studies, a short time spent with these fictitious personages ought to interest the readers of an agricultural periodical.

It is Chrismas time at Dingley Dell. Th immortal Pickwick and his friends are there, guests of Farmer Wardle. All is mirth and hilarity. The best sittingroom has been turned into a ball room. As the upper end is a bower of holly and evergreens, candles stand in every conceivable position, the fire blazes and crackles, and merry voices and light-hearted laughter ring through the room. There is brave assembly of friends, domestics, and poor relations, and dancing and singing, games and feasting are the order of the day. Farmer Wardle, the "kind, excellent, independent spirited, finehearted, hospitable, liberal man," is the presiding genius, putting everyone at ease, and directing and encouraging the revels. Christmas is kept in the true old English style, merry-making, song and story being happily blended. But Farmer Wardle is not a typical farmer. He is a man who has never heard the words agricultural depression. His several appearance in the pages of the "Pickwick Papers," are the occasions of feasting and merry-making, sport and,—let us whisper it—though Dickens has clothed it in picturesque garb—hard drinking. No; in the pages of a novel Wardle is perfect; in real life he could not be taken as an ideal type of farmer.

We know more of Dandie Dinmont's prowess as a sportsman and a fighter than a farmer. There is a not too flattering description of his farm, and we gather that he was in a large way a breeder of sheep, but it is as a breeder of dogs his name is handed down to posterity! His hospitality was unbounded, but what must we say of his obstinacy? He made up his mind to have an expensive lawsuit with his neighbour abour a few square yards of barren mountain top, and nothing could drive him from it. He may have faithfully represented the Border farmer of the time, to which "Guy Mannering" refers, but he belonged to a class that in these degenerate days is extinct. Honest Dandie Dinmont will, however, be a favorite character so long as Sir Walter Scott's novels continue to be read.

A halo of romance encircles John Ridd, the hero of Blackmore's "Lorna Doone." Though he tells the story himself, and tells it in a modest way, surely no farmer ever had more wonderful experiences than he. From his faithfut descriptions of home life, from his subtile observations respecting servants and their devious ways, from the scenes of farming life he has vividly portrayed for us, we know him to have been a farmer, but

we know him better as the man who eventually overcame, dispersed and destroyed that band of outlaws, the Doones of Bagworthy Forest. He was one who literally did not know his own strength, and his wonderful feats, told with all simplicity, make us almost hold our breath. Or artfulness and cunning there is not a particle in his composition, but despite his slow reasoning—or shall we say because of it?—he always contrived to arrive at a just appreciation of whatever subject was presented to him. No one will begrudge him his honours, or his dearlybought bride. We are proud of John Ridd, proud to include him in our ranks; but as a farmer how shall we class him?

George Eliot has given us in "Adam Bede" a fine picture of a farmer. Martin Poyser, the younger, the "portly, blakhaired" Martin who had been kinder and more respectful to his father since he had made a deed of gift to him of all his property but who was as "hard and implacable as the north-east wind" to a neighbour whose fallows were not well cleaned, is a find fellow, but——. Here we must leave off and turn to Mrs. Poyser, for the husband in this case is completely overshadowed by the wife. No better picture of a farmer's wife exists than is drawn for us in Mrs. Poyser. Kind-hearted and sympathetic though she was, she yet had a tongue that stung like whipcord, and if she thought occasion demanded it she used it unstintingly on her husband, her niece, her domestics, and even on the old squire, their landlord, himself. The said squire was very slow at carrying out repairs, though this she bore grumblingly; but when, for the sake of a newcomer, he proposed to take away some of their choice land and substitute moderate land for it, she turned on him, and the way in which she routed him, in spite of his easy assurance and her husband's acquiescence, is one of the best scenes in the book.

"Thee'st done it now," said Mr. Poyser, a little alarmed and uneasy, but not without some triumphant amusement at his wife's outbreak.

"Yes, I know I've done it," said Mrs. Poyser; "but I've had my say out, and I shall be th' easier for't all my life. There's no pleasure i' living if you're to be corked up for ever, and only dribble your mind out by the sly, like a leaky barrel."

But we must pass on to the next. Goldsmith's "Vicar of Wakefield" gives us Farmer Flamborough, a quiet, easy, simple soul; a yeoman of bygone days, who lived on terms of equality with his vicar, and whose daughters entered into rivalry with the vicar's family. Of his social life we learn a good deal; of his farming but little. We know that at a horse fair he was cajoled into buying a gross of green spectacles in shagreen cases on the supposition that they had silver rims, but which in reality were framed in much baser metal; we know also that the sharper who sold them afterwards boasted that he swindled Flamborough in one way or other once a year. We are, in the light of this, not as certain as Flamborough was, that "he would catch him yet." We do not know how he "paid his way;" he belonged to a class of farmers who were "equal strangers to opulence and poverty," who having "all the conveniences of life within themselves seldom visited towns or cities," and who "frugal by habit scarcely knew that temperance was a virtue." It would be hard to find representatives of this class now.

Tennyson's "Northern Farmer" is fragmentary, but the fragments are such as to make us wish for the whole. The son wished to marry a poor curate's daughter, the father objected, and thus enforced his wordly wisdom:

"Luvy? what's luvy? thou can luvy thy lass an' her munny too,
Maakin 'hem goa togither as they've good right to do.
Couldn't I luvy thy muther because o''er munny laaid by?
Naay—fur I luvv'd 'er a vast sight moor fur it; reason why."

After enumerating his possessions he decides:

"And if thou marries a good un I'll leave the land to thee."

And this is his unalterable determination:

"Thim's my noations, Sammy, wheerby I means to stick;
But if thou marries a bad un, I'll leave the land to Dick."

As ends abruptly the "Northern Farmer," so do these notes.

There are many other farmers in the domain of literature it would have been a pleasure to refer to, had space allowed. Those dealt with are but examples. The object of these notes is to interest readers in the subject; if they cause a few to turn to their libraries, and institute a search on their own account, this object will have been attained.

WILLIAM PARLOUR.