48.

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE AND SUCCEED — FOUNDED 1866

AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.

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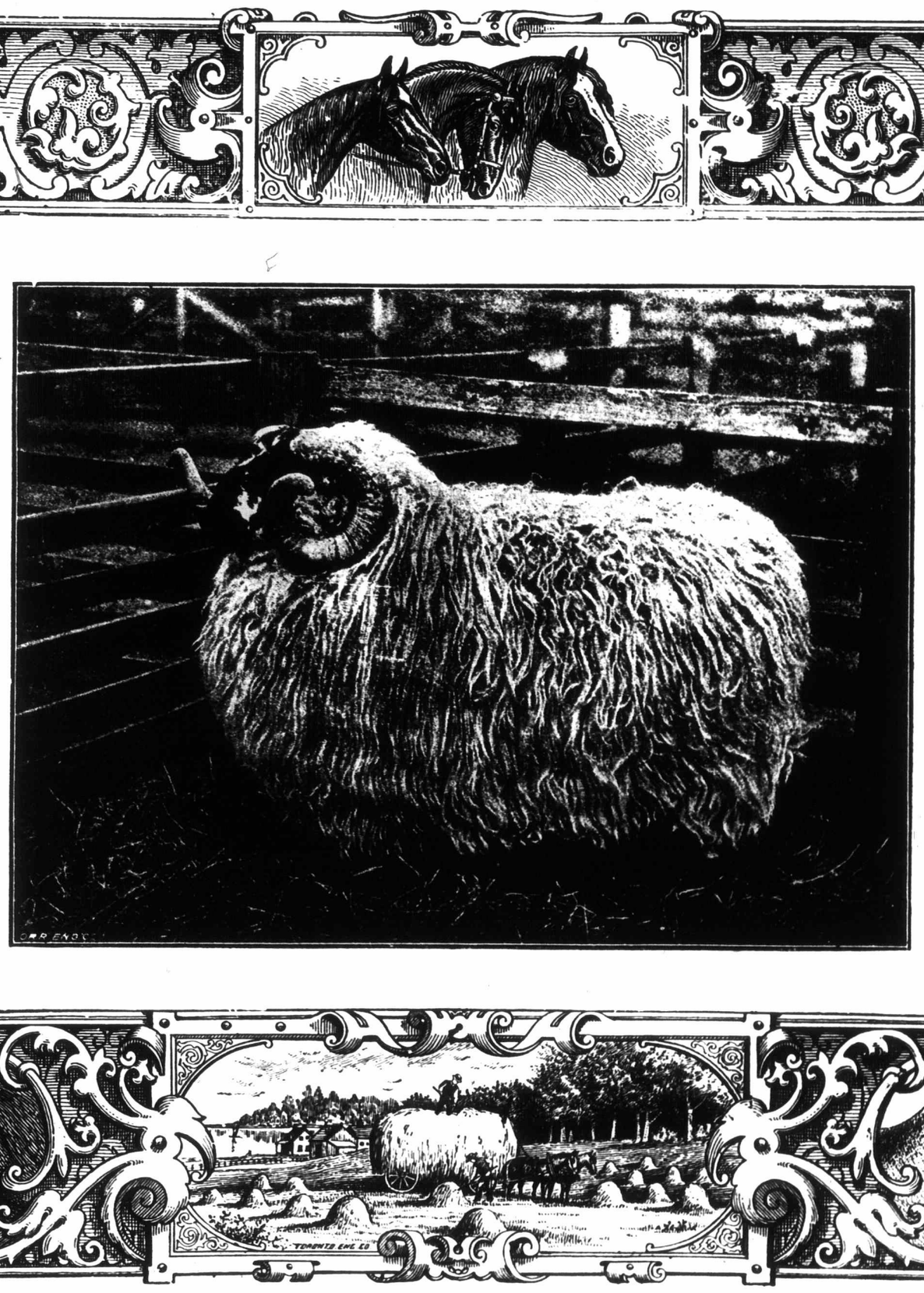

BONNIE SCOTLAND, SHEARLING BLACKFACE RAM.

BRED BY CHAS. HOWATSON, AND SOLD FOR £95 TO JAS. A. GORDON, AT THE LANARK RAM SALES, 1894.

EDITORIAL.

Among the most satisfactory tendencies of farming in Ontario and other eastern provinces of Canada at the present time is the increased attention being paid to fruit growing.

Mr. Wm. L. Bradley, head of the great American fertilizer concern bearing his name, died on December 15th. During his first year in the commercial fertilizer business his gross receipts were about $15,000; to-day the corporation does a business of about $5,000,000 annually, and employs nearly 2,000 men.

There is no gain, but positive loss, in falling into a state of despondency. A man who lapses into a chronic condition of "the blues" will usually see things much worse than they really are, imagining many evils that have no existence. Hence, at this the beginning of 1895, "Plowman," in another column, does well to strike a more hopeful tone, which we commend as the key-note for the year.

The shipment of live cattle to Belgium from Canada, which attained considerable dimensions during the past year, has received a check by an order prohibiting further importations for the present, two "suspicious" lungs having been discovered—one from an animal shipped on the Hispania, and another on the Sicilia. The situation is rendered more difficult of adjustment because of the attitude of the British authorities in regard to Canadian cattle.

In the speech from the Throne, by the Lieutenant-Governor, at the opening of the last session of the Quebec Parliament, very considerable progress in agriculture was noted. The universal encouragement given to agricultural journals was cited as evidence of the intelligent vigor of the movement. Many of our oldest and most appreciative readers are in portions of Quebec Province, and their number is increasing.

In Eastern Canada farming naturally runs in a more conservative groove than in the Western part of the Dominion, where a variety of circumstances, as our readers are well aware, have necessitated important changes of late in methods of farming. This is very well indicated by the observations, in reply to our enquiries, by the Superintendents of the three Western Experimental Farms, who are not only observant and thoughtful, but thoroughly practical men. Reading between the lines, the farmer of Eastern Canada may draw useful conclusions from what they have to say.

An official report received by the British Board of Agriculture goes to show that approximately for every three acres of land cultivated in India, two acres are capable of being cultivated, but not yet required to meet the home necessities of the country or the demands of her foreign trade. This culturable waste area is roughly put at 99,000,000 acres. While it is admitted that the productiveness of this area is never likely to equal in value that now under cultivation, it is considered safe to affirm that with the extension of measures of irrigation, more thorough and complete facilities of transport, improvements in methods and materials of agriculture, and the expansion of the area of cultivation [(a) In ascertained culturable waste, and (b) in regions for which no returns exist], the productiveness of India might easily be increased by at least 50 per cent.

A somewhat critical reader writes that "the experiment stations are finding out a great many things that farmers knew before." The wisest of men once wrote that there was nothing new under the sun; but still the patient, scientific investigator may discover facts of great value, or present new ones in a clearer light. He can also lead the way in feeding, seed-testing experiments, etc., that no farmer alone would be warranted in undertaking. There is advantage also in having on record in black and white, for future reference, the results of careful investigations. Hence the necessity for experimenters doing their work so as to secure definite results, even though it takes a long time to do so. To make sure of a few fundamental facts of a practical bearing is worth more to the country than making a great show "on paper" of what is being "done for the farmer." It should also be borne in mind that there is just as much difference between experimentalists as between farmers or city business men. All are not equally successful.

A Typical Highland Sheep.

Our first page illustration in this issue (reproduced from the Scottish Farmer) represents a good specimen of that hardy, active race of sheep called the Highland Blackfaces. They are smaller than the Cheviots, with curly, loose wool hanging nearly to the ground and rather more hairy and kempty in its nature. Their mutton is highly esteemed. The subject of our illustration was one of the highest priced shearling rams of the breed sold in 1894, viz., "Bonnie Scotland," got by the successful breeding ram, "The Maori," a Crossflat sheep which won 2nd prize for wool at the Highland and Agricultural Show, Inverness, in 1892, and first and championship at Lanark in 1893. His dam was a Balnacoole ewe. He was a prize winner himself both at Lanark, in July, and the Highland and Agricultural, Aberdeen, last year. He was bred by Chas. Howatson, of Glenbuck, and was sold to Jas. A. Gordon, of Arabella, Ross-shire, at the Lanark ram sales last year, for £95. His full brother, "Red Gauntlet," was sold at Lanark for £56, to Mr. J. K. Borland. Mr. Gordon, the purchaser of "Bonnie Scotland," is well known as a successful and enterprising Ross-shire farmer, who has become laird of the holding with which his name has been long associated. "Ladas of Cross flat," another shearling Blackface ram, bred by Mr. Howatson, was sold at the Perth ram sales last year to Middleton Campbell, of Camis-Eskan, Dumbartonshire, for £110.

A Wholesome Judicial Decision.

An important decision of the U. S. Supreme Court was recently rendered, affirming the constitutionality of the Massachusetts law prohibiting the sale of oleomargarine as butter and coloring it so as to resemble butter; also prohibiting its sale or shipment in original packages into another State, under the Inter-State Commerce law, unless the laws of that State are conformed with. The decision ought to prove an effective weapon in the hands of the legitimate dairymen of the Republic. The unjust competition of the "oleo" fraud has made it a life-and-death struggle for honest butter. In substance the text of the Supreme Court's decision is as follows:—

"We are of the opinion that it is within the power of a State to exclude from its markets any compound, manufactured in another State, which has been artifically colored or adultered so as to cause it to look like an article of food in general use, and the sale of which may, by reason of such coloration or adulteration, cheat the general public into purchasing that which they may not intend to buy. The Constitution of the United States does not secure to any one the privilege of defrauding the public. The deception against which the statute of Massachusetts is aimed is an offence against society; and the States are as competent to protect their people against such offences or wrongs as they are to protect them against crimes or wrongs of more serious character, and this protection may be given without violating any right secured by the National Constitution, and without infringing the authority of the General Government. A State enactment forbidding the sale of deceitful imitations of articles of food in general use among the people does not abridge any privilege secured to citizens of the United States, or in any just sense interfere with the freedom of commerce among the several States. It is legislation of the kind referred to in Gibbons vs. Ogden, 9, which 'can be most advantageously exercised by the States themselves.'"

The Test of Experience.

PREFERS THE ADVOCATE.

F. M., St. Ann's, Ont.:—"In renewing my subscription, I desire to state that I have received more practical information from the FARMER'S ADVOCATE than from any other agricultural paper I have taken."

WORTH DOUBLE ITS COST.

A. BELL, Trout River, Que.:—"I am very much pleased with the FARMER'S ADVOCATE; I would not be without it for double the money."

HELPS TO MAKE MONEY.

WM. PEARSON, Singhampton:—"The FARMER'S ADVOCATE is such an old friend, I would not like to be without it. I am confident every farmer that intends to make money by farming and stock-raising would be benefited to take the ADVOCATE, study it carefully, and follow the example of many of the stockmen who contribute to its columns."

Swine fever is very prevalent in Ireland. It is reported that, during the week ending December 15th, there were 200 outbreaks on that island, as against eighty in Great Britain.

The champion beast at the recent Smithfield Club Show, Mr. Clement Stephenson's Polled Aberdeen-Angus heifer, Benton Bride, dressed 1,328 pounds, showing 71.36 per cent. net to gross live weight, and 1.77 pound daily gain from birth.

Farming in Western Canada.

1. What do you regard as the more hopeful aspects of farming during the past year?
2. What discouraging features are there, and how may they be best overcome?
3. What line or lines of farm work received special attention and made the most noticeable advance, in your judgment, during the past year?
4. Would you suggest any particular direction which the efforts of the farmers should take in 1895?

REPLIES BY S. A. BEDFORD, SUPERINTENDENT EXPERIMENTAL FARM, BRANDON, MAN.

1. (a) The interest taken in mixed farming, viz.: dairying and stock, as well as grain. (b) Farmers are buying only necessary supplies of implements, etc., and that for cash. (c) They are not increasing the size of their farms. (d) The Provincial Government is introducing the teaching of agriculture in the schools.

2. (a) The low prices for grain and stock, which can be partially overcome by better bred cattle. (b) More intensive farming. (c) Selling less thin stockers and more fat cattle. (d) Feed bi-products, such as straw, chaff, and small grain, instead of burning them.

3. The raising of beef cattle; the exports have increased very largely this year. The home market is being supplied with all poultry used except turkeys.

4. (a) To gradually work into the keeping of beef cattle, dairy stock, pigs or sheep, and all kinds of poultry, use only pure-bred males. (b) Enquire into the advisability of erecting a creamery or cheese factory in the neighborhood. (c) Aim to grow more and better grain on less land by sowing less on spring or fall plowing and more on summer-fallow. (d) Use only pure, clean seed of good varieties. (e) Always bluestone the wheat seed, whether it is smutty or not. (f) Learn to dress poultry right. (g) Plant out a liberal supply of currant, raspberry and gooseberry bushes, also a good variety of rhubarb, and keep a good vegetable garden, *well fenced*.

REPLIES BY ANGUS MACKAY, SUPT. EXPERIMENTAL FARM, INDIAN HEAD, N. W. T.

No. 1. (a) The most hopeful aspect is the large number of farmers going into the several branches of farming, and not depending entirely on wheat. (b) A second, is the conviction left on the minds of every one, that to successfully cope with the dry seasons, better cultivation of the soil is absolutely necessary. The delusion so prevalent in the early days over the whole Northwest, that the soil of this country need not be cultivated to any great extent, is fast being dispersed. (c) The third is the tendency to buy as little machinery as possible, and the better protection of that already on hand, though in this there is still room for improvement.

No. 2. (a) One discouraging feature is the dry weather, which in so large a country is sure to be prevalent in some districts each year. To overcome this, the land must be fallowed the year before the crop is sown, which, if done during the proper season, will store up sufficient moisture to carry a crop to maturity. Whether the crop will be large or small depends entirely on the nature of the land and the manner in which the fallow has been cultivated. (b) Another discouraging feature is the winds, especially the warm winds during August, which blow off the sandy deserts south of the International Boundary line. In overcoming the bad effects sure to be produced by these winds, summer-fallowing is of prime importance, and live wind-breaks are of great assistance, if grown east and west, to break the south or south-west storms.

No. 3. (a) The most noticeable advance in farm work the past year has been in the dairy line; almost every section, especially those along the main line of the Canadian Pacific Railway, has been more or less interested. Several districts have gone into this industry already, and a number of others are preparing for the coming year. (b) The large number of hogs which have been marketed at the different stations and towns throughout the country give evidence of increased activity in that branch of farm work. (c) Another noticeable feature is the large quantity of fallowed land ready for crop of 1895.

No. 4. (a) Every farmer should summer-fallow one-third of his cultivated land for crop of 1896. (b) Less wheat and more coarse grains should be grown, and the latter fed to cattle and pigs. (c) Where land is light, with a sandy or gravelly subsoil, no grain should be sown on anything but good fallows. (d) Breeding light horses for farm work should be discontinued, and only animals that are able to pull a plow with ease, or draw a good load to market, should be raised. (e) No farmer, anywhere, or in any case, should attempt to raise a third crop of grain without fallowing the land.

REPLIES BY THOS. A. SHARPE, SUPT. EXPERIMENTAL FARM, AGASSIZ, B. C.

1. The live interest farmers are taking in the direction of supplying their own markets with all farm products that can be profitably grown or raised at home, instead of sending abroad for their supplies, as has been heretofore done.

2. The want of a comprehensive system of diking and draining in the lower Fraser River Valley, so much of the land being subject to, or liable to be overflowed during high water in spring; and for the interior, a system of surveys by competent engineers, to enable land-owners, as well as land-seekers, to arrive at at least an approximate estimate of the cost of irrigating the lands requiring it.

3. Fruit-growing and dairying, and to some extent, hop-growing, have received more attention than any other specialties in farming.

4. The farmers, in my estimation, cannot find a field that offers a better promise of surer reward than in fruit-growing and dairying.

THE FARMER'S ADVOCATE & HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

PUBLISHED BY
THE WILLIAM WELD COMPANY (LIMITED).
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JOHN WELD, Manager.

1. **The Farmer's Advocate** is published on the first and fifteenth of each month.

It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

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CONTENTS.

Our Advertisers Well Spoken Of.

MR. CHAS. MACKEY, Thornbury, Ont., writes:—"I think the ADVOCATE is the best farmer's paper I know of. I have purchased from several advertisers, and they all gave good satisfaction. I bought two Jersey heifers and a bull from H. Cooke, Orillia; a pair of Bronze turkeys from J. A. Stewart, Menie P O.; a young Berkshire boar from Whiteside Bros., Innerkip; White Wyandotte eggs from J. J. Lenton, Oshawa; two turkey-hens from A. Elliot, Pond Mills. All of which are giving good satisfaction. As soon as I have stock to sell, I intend to advertise in the ADVOCATE.

Beginning the New Year in a Hopeful Spirit.

BY PLOWMAN.

I have been thinking of late that we farmers, as a class, feel the present depression less than do the men of other callings. Money is only a measure of values. A dollar bill has no intrinsic value of itself. Its value consists in its purchasing power, or that for which it can be exchanged, and I hold that a dollar will purchase more of either necessaries or luxuries of life now than it would, say fifteen years ago. Take for instance farm implements. You can buy a better mower now for $45 than you could in 1880 for $75; or you can get a better binder now for $125 than you could get in 1880 for $250; or a plow can be bought now for $10 that used to cost $15. And housewives well know that they can buy more groceries now for a dollar than in 1880 for $1.50, and the prices of wearing material have decreased in even greater proportion, so that although the farmers have to sell more stuff now to realize one hundred dollars than in 1880, yet that hundred dollars will go farther in paying his expenses than one hundred and sixty dollars would at that time. But the objection is raised that we cannot pay off our mortgages as fast now as we could then. Well, that may be, but we should be very thankful if we are able to hold our own and make a living. Business men are well satisfied these times, if, on balancing their accounts at the end of the year, their profits are found to equal their household expenses. We farmers have got so accustomed to grumbling that we have educated ourselves to believe that we are the most unfortunate people on the face of the earth. We picture to ourselves the manufacturer and merchant, and even the grocer on the corner, as so many leeches growing fat and plump on the hard-earned profits of the farmer. We imagine ourselves as beasts of burden, and these others as the drivers, and when I come to think of it, men who are so short-sighted as to take that view of the situation are little better than what they call themselves after all.

Statistics prove that ninety out of every hundred of these so-called leeches fail, six or seven of those who succeed only make a living, and the remaining three or four get rich. And if these men did not put more brains and more hard work (mental if not manual) into their business than do some farmers, the proportion of failures would be materially increased. If the contention were true that these men were leeches, making an easy living by overcharging the farmers for their goods and underpaying them for their products, then I hold that is the best argument in favor of farming that I know of, for no other legitimate business could stand so much blood-sucking and live. At any rate I would rather be the horse than the leech.

But as far as my observation goes, the men who do the most complaining about "hard times," and are always howling about the oppression of the "poor farmer" by these "robbers" and "leeches" among business men, are generally to be found spending their wet days around the corner grocery or in Billy Smith's tavern, "discussin' the burnin' questions of the day," while the successful men are found at home either fixing up around the barn or mending some broken implement in the shop, or else they are in the house reading the FARMER'S ADVOCATE and similar publications, and thus fitting themselves for more effective labor when the weather will permit.

Amongst the latter class, who conduct their business with prudence and intelligence, you hear very little talk of depression or "hard times." One great cause of the discontent so prevalent among farmers is that they do not give the farm credit for all it produces. They simply credit it for the amount sold off it. But how about the comfortable home it has afforded us, as well as the vegetables and fruit, flour, meat, poultry, eggs, milk, cream, butter, etc., used by the family during the year, to say nothing of a horse and rig at any time it is wanted, and a hundred other little luxuries? But it may be argued that this forms no part of the income. Well, perhaps not, but it would form a serious expenditure if we had it to pay for in hard cash. A man in town could not live in the same kind of a house and set the same table as the ordinary farmer on an income of less than seven or eight hundred dollars a year. So that although we may not be getting rich as fast as we would like, let us be thankful to the Giver of all good, that we are enabled to make a good, comfortable living, and to lay by a little (be it ever so little) for a rainy day.

"Come, Let Us Renew."

GENTLEMEN,—Enclosed please find $1.00, renewal of my subscription for 1895. Your paper is, in my estimation, one of the finest productions ever printed; and the valuable information it contains, for the small sum of one dollar, is a credit to any publisher. F. C. BULMAN, Toronto, Ont.

[NOTE.—We are determined to make the FARMER'S ADVOCATE of more *practical value* to our readers than ever before; and letters of approval are reaching us every day from all parts of the country. We can confidently bespeak the support of the farmers of this country. Though expense is not spared in getting out a paper twice a month that earns such unsolicited approbation as that printed above, the price remains at the old figure $1.00 per year. None are authorized to take subscriptions at a less rate, but exceedingly liberal commissions and valuable premiums are allowed agents.

STOCK.

Our Scottish Letter.

The year is dying, and with it a season marked by many strange features. It is going out in storms, reminding one rather of blustering February than dark, hard December. Not for many years have there been storms and gales such as have swept over the land during the past week. Trees have been uprooted, corn-stacks overturned, roofs stripped and rivers swollen. Straw-stacks have in some cases been scattered to the four corners of the pole, and much good fodder wasted. Apart from this, the winter of 1894 has been memorable for its singularly open character. Frost and snow have, up to this date (29th Dec.), been practically unknown in most parts of the Scottish lowlands, and fodder and turnips for the cattle and sheep are likely to last well. In the feeding districts the topic of conversation is the collapse of the London dead meat trade. The Monday following the Smithfield Show is the great day in the London market for the sale of fat cattle of the best quality, or what is generally known as prime Scots, and this year the demand was as miserable as it could well be. An improvement may take place before the close of January, but the present experience has been that dealers who buy up prime cattle in Aberdeen and the north of Scotland generally, have in some cases lost £5 per head on them in London, and large numbers have been brought back to Aberdeen. The market has been styled Black Monday, and the title is well bestowed. It will be a black day in the calendar for many of those engaged in the cattle trade. You Canadians have had something to do with the glutting of the market. Such immense quantities of foreign-fed meat are being sent in to our markets that the home feeder has no chance at all, especially when the unscrupulous London butcher has no compunction about selling Deptford and Birkenhead killed meat as prime Scotch. The evidence which the recent Parliamentary Committee collected on this point was conclusive. Some prominent butchers, calling themselves by high-sounding titles, were found, who had not a piece of Scottish-fed meat in their premises. This is a most unsatisfactory state of affairs. The proof that prime Scotch is a brand of recognized merit is found in the fact that these shops trading only in foreign meat find it convenient to call themselves by distinctively Scottish titles,—The Aberdeen Meat Store, The Scottish House, and so on. Men do not counterfeit base coin. It is the genuine article which alone attracts imitators, and unless the Scottish-fed beef were most favored the vendors of foreign meat would not call themselves by that title.

After the great fat stock shows, one naturally wishes to learn how it has fared with the leading cattle at the block—in the hands of the butcher. For some years, Mr. George T. Turner, one of the correspondents of the Live Stock Journal, has made it his special business to follow the prize animals and find out how they killed. It cannot be said that the results are ever as favorable as could be wished, to the patrons of champion animals. So far, the only animal whose performance when brought to the final test has been reported, is Benton Bride, the Aberdeen-Angus heifer, which proved champion at Smithfield. The butcher's report is not altogether satisfactory. She was wastefully fat, and slight of lean meat. When hung up she formed a very pretty carcase; indeed, Mr. Turner says she was as pretty when dead as when alive. He is of opinion that of the three great fat heifers of the A. A. breed,—Luxury, Pride of the Highlands, and Benton Bride,—the best, when killed, was the first, both the second and third having too much fat and too little lean meat to be profitable. This raises a much larger question than we have leisure to discuss at the present time, but no one will question that, whatever else may be learned from it, it forms a strong argument in favor of a butcher's block test at Smithfield. After all is said and done, the really important question is, What class of animal pays the butcher best? That is the class which it will pay the farmer to feed.

The horse trade is demoralized. While big, heavy, cart geldings are in demand, and at five years old, weighing 1,800 pounds, can be sold easily for £80 and £90, the market is being flooded with cheap horses of a much lighter grade, from Canada and the United States. We have lately made some investigations regarding these, and find that they are not growing in popularity. Breeders here have grasped the character of the home demand, and it is long since so many first-rate horses of weight and substance were under hire for one season at this early period. The trade is good enough for big, strong horses, with good feet and legs, but for medium and second-class animals, it is dull and not too healthy. Now that the foreign demand is *nil*, the point to be aimed at is a more scientific and determined effort to breed geldings for the home market. It will pay to do so; and farmers will be very foolish if they allow a chance of this sort to escape them. It is useless to grumble about depressed agriculture, if no effort is made to raise the class of animal wanted for commerce. The ruin of all classes of breeding is that men who have not the material will devote themselves to the raising of stock for breeding, as distinguished from commercial purposes. He is a wise man who recognizes the measure of his own powers, and does not exceed them.

Wishing my readers a Happy New Year, it is as heretofore with this writer, "SCOTLAND YET."

Essays on Swine Breeding and Management Criticised.

BY MR. J. C. SNELL, BEFORE THE DOMINION SWINE BREEDERS' ASSOCIATION, AT GUELPH.

(Continued from page 4.)

A HINT FOR THE PACKERS.

I have only words of commendation for the paper of Mr. Wm. Davies, of Toronto, on "How, When and Where to Market Hogs." I have more than once in the past felt it my duty, in the interests of the farmers of this country, to antagonize Mr. Davies when he undertook to teach them "how to *breed* hogs"; but when he writes of how to dispose of them, he is at home in his work, and knows what he is writing about. It is all right for the butcher or the packer to point out to the farmer the quality and condition of product most desirable for the demands of the market; but when he undertakes to give advice on the science of breeding, he goes outside of his proper sphere, and is liable to lead inexperienced men astray from the best paths.

THE BATTLE OF THE BREEDS.

My friend, Capt. Young, of Tupperville, Ont., has, I think, in his paper, come far short of settling the question of "the best breed of swine." That is a problem with which mighty men have been wrestling for centuries, and to all human appearances, it is as far from being solved as ever it was. In Old England, the home of most of the breeds, there is as much difference of opinion upon the subject as there is here; and in the United States, where several very useful breeds have originated, the battle of the breeds which has been waged for many decades is still going on. The home-made breeds — Poland-Chinas, Chester Whites, and Duroc-Jersey, (the black, white, and red)—are as fiercely as ever contending for the ascendancy, while the Berkshire, with characteristic quietness, dignity, and conscious superiority, is steadily gaining ground and making friends in all sections of the American Continent. Capt. Young seems to think that because the majority of the farmers of the Western States favor the Poland-Chinas, that must be the best breed; but he seems to have overlooked the fact that they have been bred and built especially for a section of the country where corn is cheap and plentiful, and where a wasteful system, or want of system, of feeding it to cattle is followed, where the corn is thrown upon the ground for the cattle, unshelled and unground, and the hogs are allowed to follow as scavengers, gathering up what grain is left, and later on selecting from the droppings of the cattle the undigested corn which has passed through them. It is here that the careful observer sees the object in breeding hogs with ears so arranged as to protect his eyes, for when a steer raises his tail, there will a Poland-China hog be anxiously intent on the plums in the pudding. Capt. Young evidently pins his faith to the majority; but let me remind him of the fact that the majority is generally wrong. If that were a safe rule to follow in the matter of breeds and breeding, the "scrub" would be found to have it by a large majority.

The writer remarks:—"Do not the Americans buy our horses and sheep, and everything we excel in? Then, why do they not buy our hogs?"

I have a very pleasant experience that they do buy our hogs, and pay good prices for them, too. There is scarcely a week in the year that I do not ship hogs to—not one section, but to all sections of the United States, from the sunny South to the far West; but they are not Poland-Chinas. Progressive Americans are always looking for something better than they have, and they are not likely to come to Canada for Poland-Chinas.

What we want is a cosmopolitan hog,—one that will give a satisfactory account of himself under a variety of circumstances, suiting himself to the extremes of climate; active, yet strong in constitution; capable of early maturity, and making the best returns in quality of meat and in money for the food consumed. Given such an animal, it is to the average farmer of little consequence of what breed he is. Let each man decide for himself which is the best breed for him, the most suitable to his tastes and preferences, to his farm and his market, and then by careful observation and experiment seek to improve the breed he has, by selecting the best, those nearest to the type which the market demands, and he is tolerably sure to make a success.

FEEDING FOR FAT AND LEAN.

Mr. Alfred Brown, in his paper raises a point which is worthy of consideration; that is, the effect of different feeding stuffs upon the quality of meat in producing fat or lean. This is a matter which can probably be best dealt with at our Agricultural Experiment Stations, and it is important that a continued series of experiments should be made, and the results published, so that farmers may be informed as to the best methods of feeding to produce the kind of meat required by the market. The experiment quoted by Mr. Brown, from the report of the Wisconsin Station, certainly tends to show that the quality of meat is largely affected by the kind of food, but the cost of production is not given, and that is an important consideration.

PORK VERSUS GRAIN SELLING.

Mr. D. E. Smith, in his paper deals intelligently with the question, "Can a pig be fed profitably on grains?" and gives a rule (*) which seems to have been fairly well tested at the different Experiment Stations, by which any farmer may ascertain whether he is getting a better price for his grain by converting it into pork than by selling it on the market; and at present low prices of grain, with judicious management in feeding, this is a matter that hardly admits of a doubt. It is well that the farmer may know that in this way he is largely independent of the grain buyer, and may find another and a better market for his grain, and at the same time enrich his farm.

In dealing with the question, "How many hogs may be kept on a 100-acre farm?" Mr. Smith shows from statistics that in 1892 the average number of hogs in Ontario was not more than five to each one hundred acres of assessed farm lands. It is safe to say that this number might profitably be doubled, and instead of exporting little over half a million dollars worth of swine products, we could easily make it a million, and if we exported in proportion to population, as our neighbors in the United States, we should bring to our country six and a half millions of dollars for products of the hog.

"THAT TIRED FEELING."

The last chapter in our report for 1893 deals anonymously with "that tired feeling" manifested by so many of the hogs seen at the fairs and in feeding pens. As a rule, if the mother has had rational treatment, the little pigs are not born tired, and if they become so in later life it is well to inquire into the cause of such a condition. The writer very properly says: "No matter how fleshy a hog becomes, he ought to be able to stand up on his pins." Now, this will depend largely upon the way he is fed and brought up. Quality of bone is something which demands consideration, as well as quality of flesh, and we believe may be largely affected and controlled both by breeding and by feeding. It is not the coarsest bone that is the strongest, and coarseness of bone indicates coarseness of flesh and a slow feeder. It is the medium-sized bone that has good stuff in it that should be sought after in breeding, and this should be supplemented by an active life, by avoiding close confinement, by giving, and if necessary, compelling exercise, and by feeding such foods as are calculated to promote growth and strength of bone, all of which tends to produce a good constitution and a healthy and profitable animal.

[*NOTE.—The rule referred to is as follows:—"It is safe to say that four pounds of mixed meal will produce an increase of a pound in live weight up to 150 or 160 pounds; beyond that weight it may require more. Then if, by way of illustration, we mix one bushel of peas, one bushel of wheat and one bushel of barley, we should get one-fourth their weight, or forty-two pounds of pork, live weight. If we sell the pigs at $4 per hundred, we would get 60 cents a bushel for wheat; if we obtained $5 a hundred, we would get 75 cents a bushel for our wheat, and if $6 a hundred, it would come to 90 cents a bushel for the wheat. With peas and corn it applies just the same. For barley, if pigs sold at $4 a hundred, we would obtain 48 cents a bushel; at $5, 60 cents, and at $6 it would be 72 cents a bushel. Of course we have our trouble, but if we consider that our farms are being enriched by feeding the grain on them, then we think the trouble is balanced and our figures still hold good."—ED.]

Canadian Jersey Breeders Organize.

A meeting of Canadian Jersey breeders was held in Toronto, on Friday, December 28th, and an organization was effected, to be known as "The Canadian Jersey Breeders' Association." The officers elected for the ensuing year were: President, A. McLean Howard, sr., Toronto; Vice-President, J. C. Snell, Edmonton; Secretary-Treasurer, Capt. Rolph Markham. Delegates to Industrial Exhibition Board, Toronto—Messrs. Howard and Rolph. Delegates to Western Fair, London—R. Gibson, Delaware; Mr. Humpidge, London. Board of Managers—Messrs. Smith, of Smith & Son, Highfield; W. D. Reesor, Markham; D. Duncan, Don, and Geo. Smith, of Smith & Son, Grimsby. The membership fee was fixed at $1. A constitution was adopted, consisting of nine articles: Name, Object, Membership, Officers, Elections, Annual Meeting, Board of Managers, Expulsion of Members, also a set of By-laws. A very interesting letter was read by the Secretary from Mrs. E. M. Jones, Brockville, approving of the formation of the Association and suggesting for consideration a number of valuable ideas.

It is confidently expected that in the making up of prize lists for the larger shows this year prizes more commensurate with the Jersey interests will be offered. Those in attendance did not favor the idea of starting a register for Jerseys in Canada; at all events, not for the present. The annual meeting is to be held in March each year hereafter.

Jottings from England.

The close of the year in England finds us in good spirits, and our flocks and herds in as healthy a state as we remember; but the prevailing scarcity of money is not confined, we expect, to either side of the Atlantic.

A recent slight outbreak of foot and mouth disease was easily stamped out, owing to the vigilance of the authorities, whose rules are most severe; even fox-hunting was stopped in the affected areas, lest the disease should be spread. All local markets were also stopped, but this only lasted a few weeks, and a completely clear bill of health was secured.

We have been shipping sheep to New Zealand, and there has been a good demand at current prices for the autumn season.

Shorthorn cattle have realized an average of over £1 per head above last season, and many more have been sold, and enquiries for dairy cattle are coming from South Africa, which is importing many varieties of stock this season.

Wishing you and your readers the compliments of the season, "W.," London, W., Eng.

Fattening Lambs.

[Paper read by Mr. C. A. Zavitz, B. S. A., before the Dominion Sheep Breeders' Association.]

When thinking over the subject of "Fattening Lambs," I was forcibly impressed with the many sources of information regarding this subject, as well as many others, which it is our privilege to enjoy at the present day. The man who is going to make the greatest success in the handling of live stock in the future, is the man who will take advantage, not only of his own experience, but also of the experience of others. The day is not far distant in Ontario when a man's knowledge of live stock matters did not extend very far beyond his own personal experience. How different we find it now. The Agricultural press, the Live Stock Associations, the Experiment Stations, the Agricultural Colleges, etc., all have the tendency to make the experiences of a few the property of all. Wise is the stockman who lives up to his privileges of the present day, and indeed foolish is he who allows these precious gems of thought and of experience to remain unutilized.

If we hope to reach success in producing mutton at a fair profit, we must turn our attention closely to the different requirements of the work. A close study of the needs of the animal, the feeding values of foods, and the demands of the markets are of the greatest importance. The cheapest foods, which will produce the greatest weight and the best quality of mutton in the shortest time, are, of course, the ones to be procured when possible.

The lambs must be properly fed and cared for from the time they are born till the time they are placed on the market, if the best results are to be obtained. Lambs gain in weight rapidly when young, and experiments go to show that in nearly all cases, as the age advances, the daily increase in the live weight of the animals becomes less, and the cost of producing each pound of increase becomes greater. This is a fact which every man who is feeding lambs for the market should keep constantly in view, and knowing this to be true in regard to the fattening of lambs, it is plainly seen that early maturity and financial profit are very closely connected. Let us now endeavor to ascertain some of the methods of feeding which would help to bring about the best results.

It has been the custom in the past among some farmers to depend entirely upon their pasture lands as the source of food for their ewes and lambs during the time from which they leave the winter quarters until the time the lambs are weaned. Does this show the greatest economy in feeding either the ewes or the lambs? I feel inclined to say that in the majority of cases it does not. The question as to the advisability of feeding grain to lambs during the summer months has been looked into very carefully at the Wisconsin Experiment Station. Prof. Craig conducted experiments in 1891-2 and 1892-3 with ewes which were kept for their lambs and wool, and for the purpose of ascertaining the effects of different kinds of treatment both upon the ewes and the lambs.

A comparison was made of feeding grain to unweaned lambs, to ewes, and to both ewes and lambs, and of feeding no grain. The trial, which lasted for fourteen weeks in 1892-3, was with four groups, with ten ewes and fourteen lambs in each group. The conclusions from this experiment are given as follows:—

1. "It pays to feed the lambs before they are weaned all the grain they will eat, when on good blue grass or clover pasture with their dams. This conclusion is endorsed by a previous trial."

2. "When the ewes have been properly fed during the winter, so as to be in good condition at lambing time, it does not pay to feed them grain when on pasture with the object of securing more rapid and profitable gains in the lambs."

In no instance was there any apparent benefit to the lambs from feeding grain to their dams; there was a marked advantage in feeding the grain directly to the lambs. The value of the grain-fed lambs was three-fourths of a cent per pound higher than those receiving no grain.

It is an excellent plan to have some supplemental food for the sheep in order that a large number of animals can be kept upon a certain area of pasture land, and at the same time have no danger of any lack of succulent food material of the best kind, when the pastures partially fail. Several different crops are grown for this purpose, such as corn, tares, and mixtures of grains. During the past three years, oats, wheat, peas and barley have been grown in various combinations at the Agricultural College. Of all the mixtures used, the heaviest average yield per acre was obtained from growing peas and oats in combination. These have been grown in varying proportions, and it has been found that one and one-half bushels of oats and one bushel of peas have given the most satisfactory crop. This mixture gives a green fodder of excellent quality when cut before reaching maturity; and if allowed to ripen, the grain can be threshed and fed as a winter ration, to good advantage. A number of varieties of peas and of oats have been grown in mixtures, and the Joanette oats and Grass peas have been found to produce a fodder which would be well suited for lambs, as each variety produces a fine quality of straw.

As autumn feed for lambs, I believe there is nothing that can nearly equal the rape crop. While there are some of the leading breeders who have grown rape to a large extent for several years, yet I am surprised that not a greater number take the

advantage of this most valuable crop for their lambs. We have had a large amount of experience with rape during the past five years, at the Agricultural College, and I wish to state that my estimation of the value of the rape plant for autumn feed increases every year. I could, if necessary, say a good deal upon this crop in its relation to the fattening of sheep and lambs in the autumn months, but to do it justice would extend this paper to too great a length. I would, however, like to draw your attention to a few facts in regard to this crop. We have grown rape as the only crop upon the land during the season, thus having it under favorable conditions. This rape, when pastured by lambs, produced on those animals live weight increase at the rate of 762 pounds per acre. This is certainly high and may not always be expected, but it shows what can be done. The land received no special treatment for the rape crop, but was in good condition. In 1893, we grew rape under somewhat similar conditions, and received 27.2 tons green rape per acre. In an experiment conducted in 1891, in which rape was grown after winter wheat, it was found that one acre of the rape increased the live weight of the lambs 179 pounds. The animals received no other food, but, of course, were given salt.

The principal method which has been adopted in growing rape at the Experimental Farm has been after a crop of rye which had been taken from the land in June. In three years' experience in growing rape after rye, we find that on the average, one acre of rape will pasture from ten to sixteen lambs from two to two and one-half months, and each lamb will increase at the rate of about 8 pounds per month.

In an experiment which was carried on in 1891, in feeding lambs upon rape alone, rape and meal, and rape and pasture, it was found that the increase in the live weight per lamb was 11.7 pounds per month on rape alone, 12.0 pounds per month on rape with meal, and 14.1 pounds per month on rape and pasture. These results favor the use of a pasture for the lambs to run into from the rape field. It also tends to show that half a pound of oats per lamb per day, when on rape, is not necessary. The nutritive ratio of green rape, as given by Wolfe, is 1:2.9, while that of red clover in full bloom is only 1:5.7. But as rape contains more water than clover, the same authority estimated clover as being worth 15. per cent. more than rape, pound for pound, for feeding purposes. On the other hand, we have found that rape will produce from two to three times more in weight from a given area than a single cutting of clover.

Chatty Stock Letter from the States.

(FROM OUR CHICAGO CORRESPONDENT.)

The new year started in good shape at Chicago, and about all kinds of live stock has arrived more freely, so far, than a year ago. The quality of the stock coming is not so good as it usually is at this season. Ripe, corn-fed cattle seem to be at a slight premium again, but it is about time, as the feeders who marketed their stock during December feel that, with a few exceptions, those who had only partly-finished cattle got relatively the best prices.

Top cattle, $5.75; top hogs, $4.70; top sheep, $4.00; top lambs, $4.50; these prices, of course, are for finest qualities, compared with a year ago. Cattle are 25 cents higher, hogs 75 cents lower, sheep 25 cents higher and lambs not quite so high.

The latest advices by cable from the London and Liverpool live stock markets are more encouraging. Best American steers, 12½ cents per lb., and top sheep, 14 cents per lb., sinking the offal.

Corn-fed, western range cattle are selling pretty well. The Standard Cattle Co. marketed a lot of 1,411-lb. steers at $4.60, and some 1,238-lb. heifers at $4.10

The Cudahy Packing Co., formerly an offshoot of Armour & Co., have opened a slaughtering and packing establishment at Chicago, in addition to their original plant at Omaha, Nebraska.

The writer regrets to say that he feels that the criticism on the Chicago Fat Stock Show, in the last issue of the ADVOCATE, is just, and not overdrawn.

The export demand here for good horses is very strong, and it is calculated that fully 50 per cent. of the good horses now being sold in Chicago are for foreign use.

An unusually large percentage of the hogs now being marketed consists of fat brood sows. This shows that heavy hogs are scarce among the farmers; also that farmers either are not breeding as many sows as usual, or are depending more largely on the young crop. The quality of the hog is generally poor. In Nebraska, where the quality was so good a year ago, it is especially poor now. An Omaha authority, speaking of a week's receipts there, says:—"Offerings included no choice heavy; in fact, loads weighing over 225 lbs. were few and far between. Light hogs and pigs made up the bulk of the supply, and they were mostly on the common order. The average weight for the week will not exceed 197 lbs. The average for January, 1894, was 259 lbs."

"Mark my words, we are on the eve of light receipts of cattle, and high markets," said an experienced cattle salesman to your correspondent Texas is feeding about as many cattle as last year, but other Southern States are a little short. The number of all kinds of cattle in Texas is reported to be fifty per cent. less than it was eight years ago. The cotton-seed meal feeders down there have had hard work getting what cattle, of suitable ages, they wanted for fattening purposes. It is undoubtedly true that the crop of Texas grass beeves will be light this year.

Lumpy jaw in cattle *(actinomycosis)* gives the farmers of the Western States a great deal of trouble. There are scores of remedies, but the writer knows of none more efficient than the following, which was recently made public, and free of charge, by Capt. J. G. Heaps, of Kewanee, Ill.:—Pure arsenious acid, half ounce; pure gum arabic, half ounce; caustic potash, in sticks, two drachms; rain-water, one ounce. The above ingredients will be sufficient to treat four animals. Put in a wide-mouthed bottle (marked poison); thoroughly mix; secure animal; cut lump open, clean out all matter in lump; take a smooth stick, wrap cotton around it, saturate with the compound, and put cotton inside of lump; fill the cavity full and take stick to keep it there. The lump will soon swell up large, but in a few days will grow smaller, and in a short time drop out and the cavity heal over.

Cottonseed meal is becoming more and more an important factor in animal feeding. Until recently its use was confined largely to the Southern States, where it is grown, but the corn shortage of the past year brought it to the northern corn belt in vast quantities. Cattle feeders pronounce it a success without doubt.

A Good Breed of Pigs.

BY J. D., CAPE BRETON.

The result of a good deal of experimenting with breed against breed of pigs, by the United States Stations, is the verdict: "There is no *best* breed of pigs." The great majority of farmers, especially in the eastern part of the Dominion, would feel insulted if one doubted that they understood thoroughly what "best breed of pigs" means. Still, a little study will show one that so many things go to make up what should be a "best breed," that it may be hard to get farmers to agree on what to call *best*. I know many farmers who would say the best pigs are those which keep on growing till they are right big. I know others who would say that the best are those that eat the least!—are easily kept. Let us try to look into the matter in a way that we may get as near as possible to the "*best*" without serious disagreement. What is the *good* of a pig, anyway? Is it not that it *is* a machine which converts material the farmer has, or can have, into a quantity of pork worth *more money* in the market than the said material itself, or if otherwise manufactured. A pig that won't do this is no *good* at all A pig that does a little more than another of it is a *better* pig. It, then, looks as if the one which can do more than all the others is the *best* pig. Would it, then, not follow that the breed having the largest percentage of pigs approaching this theoretical best pig would be the *best* breed? Looks as though we "had him." A few thoughts on what materials different farmers may have to turn into pork, on the comparative power of different pigs to turn each of these foods into pork, and on the various markets there may be, and we see

"Alps over Alps arise"

between us and deciding on a "best breed" for *all*. The most I dare venture on now is to throw some light on what is a *sure, good* breed for a district in which the markets are pretty much alike and the majority of the farmers have much the same foods. Such a district is the Maritime Provinces, I believe. As to the condition of the markets, there is no distinction made in pork fairly fat and upwards, so far as I can learn. Difference of quality of pork made by the different breeds would not, then, count. And it is here in quality—that there is an indisputable difference between some of the breeds. The foods to be made into pork all through the Maritime Provinces are, I take it, pretty much the same, viz., skim milk, whey, small potatoes, roots, and kitchen slops. Home-raised grain, cornmeal, shorts and middlings might, indeed, be used; but at the present prices here for these and for pork, *all breeds would be bad*. The latter foods can, however, be used with profit sometimes to a small extent. Much depends on whether the manure is to be saved and used *intelligently* or *not*. The other way they could come to be profitably fed, is when they would be used to prevent the *loss from scant feeding*, when the first class of foods are not, for a fraction of the year, sufficient for full feeding—as they ought to be, for the most of the time—for the number of pigs kept.

The Maine Experiment Station compared the gains of Berkshires, Chester Whites, Cheshires, Poland-Chinas, and Yorkshires: "In general, no striking differences are observed in the rate of growth, or in the relation of the amount of food to growth, with these several breeds of swine." At the Michigan Agricultural College, Duroc-Jerseys, Berkshires and Poland-Chinas were compared in two separate trials (in 1888 and in 1889): "The results were so irregular as to lead to no definite conclusions." Berkshires, Chester Whites and Yorkshires were compared at the Vermont Station: "The results of the comparison showed but little difference, whatever difference there was being in favor of the Chester Whites." In a later trial at the same station, the Chester Whites and the Poland-Chinas grew the fastest, but the gain of the Large Yorkshires cost slightly less per lb. The Massachusetts State Station found the Chester Whites to make a cheaper per lb. gain than the Yorkshires. So until further accurate experiments will establish the fact that some one breed will, as a general thing, make a cheaper gain than all others, while I am working for a market where quality is not regarded I shall not trouble myself about what breed to get. But the detailed accounts of the above and other experiments in feeding pigs show a most *striking difference in individuals of all the breeds*. As there are poor individuals as well as good individuals in all the breeds, it is well for the farmer, when getting pigs, to attend to this matter. If buying them, as is done by the majority of small farmers in many parts of the Maritime Provinces, it is well to buy only from reliable breeders, and then only individuals that appear thrifty and well-developed for their age. If breeding them, perhaps the best thing that can be done is to be sure that the sire and sow are really good pigs. By far the most important difference between pig and pig, as brought out by accurate experimenting, I leave to the last. Here is what I believe to be a fair sample experiment on the matter. It was made at the Vermont Station, by Prof. Cooke, in 1890

Cost of grain at different stages of growth:—

	Average weight at end of period.	Average cost of food per pound of gain.	Average profit per lb. of gain (live weight) and selling at 5 cents per lb. (live weight.)
	Lbs.	Cents.	Cents.
Period I.	51	2.47	2.53
" II.	103	3.70	1.30
" III.	160	4.89	0.11
" IV.	202	5.82	Loss 0.82

I believe it would pay many farmers to have this table written in large letters, and hung above the door of their pig house. *The two hundred pound pig is poor "breed," whatever breed it is, and the twenty to one hundred and fifty pound pig, if a good individual, is good "breed" every time.*

FARM.

Sheep Husbandry as a Means of Soil Restoration.

BY JAMES MILLER.

(Continued from page 11.)

I have already mentioned the raising of all kinds of animals and the raising of less grain as a means of building up the farm. Time will only permit me to refer to sheep breeding. In the first place, the real cost of keeping sheep is much less, comparatively, than that of any other farm stock. To make pork, for example, a great proportion of the food consumed must be cash grain; to grow sheep and place them on the market requires the least grain of all farm animals. Their living consists largely of nibbles here and there that other animals would never find, much less make use of, and which otherwise would go to waste. The farmer's richest returns come in an indirect way, for if through the agency of sheep on grain-impoverished lands we can so recuperate them within the space of a few years that their producing capacity is nearly or quite doubled, and in the meantime harvest a good crop of mutton and wool, I look upon the renovating effects of the sheep on those lands as an indirect income, and at the same time the most satisfactory. After thinking carefully about the ups and downs of the raising of other kinds of stock, I turn to the sheep. They, with unanimous bleat, remind us that even if our direct income from them has not been satisfactory, we must remember that we pastured them most of the summer on that hilly land that we did not want to plow; in that wood lot full of wild plants and second growth timber, on which nothing else would subsist; on that lot we bought and seeded, where grain would not profitably grow, and finally turned them into a pasture where the cattle could not thrive any longer; and yet throughout the whole season they served us with the choicest of fresh meat. In the spring the greater part presented us with lambs that did not require to be taught to drink skimmed milk, and when we turned them out to pasture in the spring we did not see them again until washing or shearing time, when they each gave us their coats that sold for $1 25 and $2 per coat, at a season when there was very little else coming into the farmer's pocket.

I can safely say that I have yet to become acquainted with the man who has intelligently pursued the business of keeping and breeding sheep, who is not to-day in comfortable circumstances, with clean, fertile fields, and a look of contentment about the family indicative of prosperity. Starting with a small capital invested at first in a little flock of ewes, the thrifty shepherd finds himself to-day the possessor of a large and valuable flock.

The hail-storm, while it may cut the farmer's wheat, cannot destroy his wool crop. The golden hoofs tread on in their diligent search over hillsides and vales for the tender weeds and odd blades of grass, to supply us with wool and mutton, while at the same time spreading evenly their rich top-dressing over the poorest land on the farm. By sprinkling salt over these patches of burrs and thistles, how quickly the unprofitable nuisances will disappear before the sheep.

In conclusion: Upon Western States farms, where, because of successive bad crops, mortgages have been foreclosed, the loan companies, in order to get back their own and set the farmer upon his feet, have resorted to the plan of purchasing for him a flock of sheep.

Ontario Agricultural and Experimental Union.

The sixteenth annual meeting of the Ontario Agricultural and Experimental Union was held at the Agricultural College, Guelph, on Tuesday, Dec. 18, 19. All the sessions were well attended by interested and intelligent audiences, made up of students, ex-students, experimenters and visiting farmers. The importance of the experimental work undertaken and carried out by this institution is yet far too little known and appreciated, though it has made a rapid growth.

The Hon. John Dryden, in referring to the work of the Union, said in substance that its object is nothing more or less than to seek the truth regarding the best methods of carrying on all branches of agriculture in every individual locality—an essential knowledge in order to succeed. Speaking generally, the best sorts and methods are fairly well known, but, owing to the wide variation in conditions and soils which exist within comparatively small areas, it is necessary that individuals carry on experiments on their own land. This, to many, will seem an undertaking too expensive and extravagant of time to be participated in, but just here is where the value of the "Union" comes in to help those seeking a system. To very many the system employed by the "Union" is known, and those not conversant with the same may learn all about it by writing Mr. C. A. Zavitz, O.A.C., for their plans, etc., which is the result of years of careful study and experience.

REPORT ON EXPERIMENTS.

The report of the Committee on Experiments in Agriculture embraced the findings from tests with fertilizers, rape, millet, lucerne, corn, spring wheat, barley, oats, peas, winter wheat and potatoes. We note a few points of special interest. It may be well just here to refer to the present extent of experimental work carried on over the Province. In 1886, one experiment was carried on by eight experimenters with 33 plots. In 1894, 14 different experiments were carried on by 507 experimenters on 2,520 plots, all of which carried on the work and submitted full reports according to the rules made for their guidance. The results of the grain experiments will be given in a later issue.

The experiments carried on with fertilizers over the Province show that a mixture of nitrate of soda, muriate of potash, and superphosphate, gave better results than any one alone. The result of its use on oats was to increase an acre's yield 11 bushels. This, however, is not the most important knowledge gained from testing the value of fertilizers. A complete fertilizer is a mixture of nitrogen, potash, and phosphoric acid; now, by testing the growth of a crop with each of the above manures, an indication is shown of the needs of the farm upon which the test is being conducted. It is not necessary in many cases to purchase artificial manures to make up the deficiency, as by growing clover or other leguminious crops, nitrogen can be furnished, and by spreading wood ashes, potash is supplied; therefore, the value of knowing our lands and their needs, lies in the fact that only certain manures need be used.

DAIRYING EXPERIMENTS.

Prof. Dean's experiments have been along the line of the composite test, the utility of which he has demonstrated, and paying for milk at cheese factories by test. Our readers are already familiar with the former. As to the latter, we give the sum and substance in an article elsewhere in this issue. Prof. Shuttleworth's analyses indicated that casein is an almost constant quantity in milk, and that the per cent. of fat varies.

ECONOMIC BOTANY AND ENTOMOLOGY.

Prof. J. H. Panton reported the work of the committee on the above subject. Circular letters were sent out over the Province, asking for lists of the most troublesome weeds, insects, and fungus pests. Replies received from twenty-seven counties mentioned such weeds as Canadian thistle, mustard, wild oats, etc., with which we are all familiar. Among the new weeds likely to be disastrous was mentioned perennial sow-thistle, which is rapidly gaining a foothold on many farms throughout the Province. It has been described in the FARMER'S ADVOCATE, together with mode of eradication, but a further description will not be out of place. It resembles in its early stages the dandelion before blossoming; it then grows upright from one to three feet, according to conditions. Its flowers, which resemble dandelion blossoms, appear in July and August, bearing enormous quantities of fine seed, which may be carried as common thistle seeds for long distances. It has a creeping root stalk which renders it extremely difficult to eradicate. The mode of destroying it is to grow a smothering crop, such as buckwheat, to be ploughed down, this followed the next season by a hoed crop, so as to prevent the green leaves from appearing above the surface of the ground. Rib grass, Russian thistle, spiny clotbur, water hemlock, bladder campion and penny cress, were mentioned, but the Professor does not fear these much when ordinary precaution is taken. These are all dangerous if neglected. The treatment of fungus and insect pests were the same as those given in our Fruit Growers' Association report in Dec, 15th issue.

OBSERVATION AND EXPERIENCE WITH TRAVELLING DAIRY.

F. J. Sleightholm, B. S. A., who has had charge of the Travelling Dairy during the last season, stated that in sections where the Travelling Dairy had gone through in a previous season that much better work is being done on the dairy farms, and that where his visit was the first of the kind there is great room for improvement in the matter of cleanliness, skimming, etc. For instance, some are using what they call shallow pans, but are in reality about six inches deep. When skim milk from such setting as that has been tested there was found almost half the fat of new milk—a very great loss. In other instances, deep pail setting was carried on without ice, which also gave imperfect skimming. He found some sections where the butter was worked by squeezing it through the fingers. Much turnipy-flavored cream and butter was found. A good deal of middling butter was found, which never can find a first-class market.

CLOVER CULTURE.

The "Union" should be congratulated upon securing the services of no less important a man than Mr. T. B. Terry, Hudson, Ohio, who is well and widely known. We may say just here that Mr. Terry carries on a three-course rotation, namely, clover, potatoes or strawberries, and fall wheat. The clover is sown on the wheat about the end of February, when freezing and thawing goes on alternately, thus covering the seed without the use of the harrow. The first autumn the mower is run over the clover and stubble, which is allowed to lie as a mulch for winter protection. No stock is allowed on the clover, as tramping at any time is injurious to the plants and to the soil. The following summer a splendid clover crop is taken off in the shape of hay. Mr. Terry claims that the use of a barometer is necessary in farming operations, especially in haying. Clover is usually cut in the afternoon, when the weather is known to be settled. The machine used cuts behind the horses, the clover being left standing, so that tedding is unnecessary. Next day, with good drying weather, it is raked into windrows, following the course of the mower, so that the rake will leave the clover butts up and heads underneath. The next day, after dew is all gone, the windrows are turned completely over on dry ground, where they are allowed to remain a couple of hours before being drawn to a mow, where it is put in without tramping the first day: neither is the horse-fork allowed to dump into the mow direct, or musty hay will result at the point of landing. Mr. Terry has fed his farm teams on pure clover hay, without a bite of grain, for thirteen years, and they are always in splendid condition and perfectly healthy.

CLOVER AS MANURE.

Mr. Terry claims, from experience, that poor land can be brought up to a very high state of fertility by growing clover as above described. After the hay crop has been removed, the aftermath of about one and a-half tons per acre is allowed to remain, to be ploughed under the following spring, for potatoes or strawberries. In order to illustrate the manurial argument for clover, Mr. Terry mentioned the fact that he grew fifty bushels of fall wheat per acre last season, on land that some thirty years ago would not produce more than eight bushels per acre, with no other manure than clover, while his neighbor, a first-class farmer, who gave his field a heavy coat of farmyard manure, obtained forty-two bushels per acre. These were the two best fields of wheat in that part of Ohio.

Clover is able to extract nitrogen from the atmosphere, by reason of its root tubercles, and other fertilizing elements from the subsoil by means of its deep running roots. In order that clover or any other deep-feeding plant grow to a maximum crop, the land must be well drained, naturally or artificially.

STRAWBERRY CULTURE.

Mr. Terry grows strawberries that readily sell for 15 to 20 cents per quart while ordinary strawberries bring 6 cents on the market. He realizes thoroughly that competition in ordinary branches of agriculture is always keen, but there is always lots of room and demand for first-class produce. The plan followed by Mr. Terry is to plough down a well-covered clover sod in the spring, and plant good, thrifty plants that have never born fruit, in rows 4 feet apart and 2 feet apart in the row. The ground is cultivated with a fine-toothed implement every few days for a couple of months. Up till this time all blossoms and runners are kept clipped off. Runners are then allowed to follow out in shape much like a waggon wheel; that is, the old plant representing the hub, while the runners represent spokes. Cultivation continues till autmn, when the plants are thinned out to 7 inches apart. After the ground freezes firmly, a heavy mulch of straw is put on and left till spring, when it is all raked off, except what the plants can readily grow through. That raked off is tramped down in the patch, which keeps down all weed growth, and retains sufficient moisture so that a full crop is insured, whether rain comes or not. The mulch also has the effect of keeping the berries free from sand—an important consideration in producing high-priced fruit. After the berries have been picked, the patch is all torn up and worked down very fine, then it is seeded with clover, which yields a crop of hay the following year: then it will be ready for strawberries the next season. The speaker stated that the berry season can be lengthened quite one week by applying a very heavy mulch, and allowing it to remain longer in the spring, thus keeping in the frost and holding back vegetation for a longer time.

POTATO CULTURE.

Potato growing being one of Mr. Terry's money-making crops, he is able to speak with authority regarding the best methods of treatment. The land is prepared as above stated by ploughing under a heavy aftermath of clover in the spring. The seed is cut to one eye if good, and planted 4 inches deep, every 12 to 15 inches, in rows 32 inches apart. A fine-toothed cultivator is used every few days in order to hold moisture and check weed growth. Mr. Terry is careful to run the cultivator through the patch as soon after a rain as the land is dry enough to work. This process is continued until the plants are a third grown. They are then cultivated shallowly between the rows until the tops are nearly full grown. Hilling up is never practiced, as flat cultivation is considered preferable. When the crop is ready to dig, an elevating machine is used, drawn by four horses. This machine, with one man to drive, does as much as 15 men by the old method. Every second row is dug, and the potatoes are left clean and bare in a narrow row all ready to pick up. Mr. Terry has found it advantageous to have bushel boxes made by the hundred to be used in picking the potato crop into. They are spread over the field so close together that when one is full it is left and another taken up. The plan is for two men to take a row each, picking into the same box which is shoved along the undug row, between them. When a load of full boxes is ready, they are drawn to the barn on a wagon and dumped on a cement floor, where they can be readily shoveled up. They are then sorted by means of a grading screen and placed in a cool cellar until cool weather arrives, when they are pitted, being covered with two coats of straw and two of earth alternately, where they keep perfectly till spring if desired. Seed potatoes are selected in the field and kept from sprouting till planting time. When potatoes are stored in the cellar they can safely be piled four feet thick without fear of loss, except there are some rotten ones, when greater precaution will have to be taken.

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Threshing Corn.

BY A. E.

The first point is to have the corn well dried; if put in mow of barn till threshed it will require to be set on end as in the field, or it will heat quickly. It will do as well in small stacks. The separator requires all the teeth out of concaves, excepting one single row, and a piece of sheet iron at the end of the screens to keep the cobs from mixing with the corn. The rate of speed should be about half as fast as for threshing wheat. If the machine is fixed this way it will thresh from forty to sixty bushels an hour. The corn will heat in two to four days, and should therefore be turned completely, or, better, be put through a fanning-mill. It may heat again, and requires to be watched, for if neglected will get mouldy and bitter. It is not advisable to thresh much unless you have room on a floor to spread it about a foot deep. The advantages of threshing corn are, that it is husked and shelled for three cents a bushel, the stock will eat the stalks better, and being broken, what is not eaten is not such a nuisance among the manure. The disadvantages are that the corn and stalks are apt to spoil some. However, if the stalks are no more than two feet deep, with oat or wheat straw between, they will keep if not too damp.

The annual report of the harbor master of the port of Montreal for the year of 1894, shows that among the exports were:—Grain, 8,746,485 bushels, a decrease of 12,977,909 bushels; butter, 36,660 packages, a decrease of 34,083 packages; hay, 22,212 tons, a decrease of 45,653 tons. Lumber showed an increase of 49,158,629 feet: flour an increase of 361,664 barrels; cheese an increase of 59,484 boxes. Cattle, 87,604 head, an increase of 4,600 head; sheep, 130,663, an increase of 127,014; horses, 5,579, an increase of 3,927. Apples, an increase of 211,570 barrels.

The Care and Application of Manure.

BY D. A.

If possible, mix horse and cattle manure together, even if it necessitates some extra wheeling to do so. When carried and spread daily as made, the mixing is not quite as necessary, but, if left for even one week in a pile, the action of a general heat necessary to the making of manure of good quality is much forwarded by the mixing.

While there are different objects to be thought of in the application of manure, the chief one is to enrich; consequently, green and unrotted manure may serve our purpose better than manure rotted to half its original bulk. The writer of this applies the larger part of the manure made on his farm in a fresh state, loading and drawing to the fields and spread as made. We have practiced this for twenty five years, and feel that we are the gainers by doing so. The chief reasons against this way of applying are the weed seeds that often are numerous in the straw used as bedding; but our farming operations should not be of a nature to allow much of our bedding to be infested with weed seeds; certainly it can be prevented, and we claim when a fairly good state of farming operations are in practice, much labor and much waste of the manure is saved by immediate application. Many arguments have been brought forward against this method, but we have failed to find one of them to be proven sufficiently to alter our idea, namely, that the sooner we get it where we want it, the greater benefits we derive. [NOTE.—On very hilly fields, or where, through lack of drainage, water accumulates in pools to run off in a freshet, occasionally there is liability of loss.—ED.] Our method has been to spread evenly on sod fields intended to be plowed up in spring for peas, or any crop not intended to be first or earliest sown; on parts of stubble fields requiring enriching before late fall plowing, or on the fall wheat as soon as the ground is frozen to carry the horses; this we find on clay lands the finest form of application. Spread regularly, and not too heavy, it is most beneficial: first, in enriching the land, and also in mulching, preventing heaving of the plants, and making sure of a clover catch wherever it is applied; and it is wonderful the acreage we cover in this way. Even if heavily put on, to almost smother some plants, it ultimately carries the wheat to a finer finish. Clover seed never fails of a fine start on the portions thus treated.

On sod intended for corn we apply a heavy coat, and find it forwards our work greatly, for we need not plow it until our other sowing is completed. The manure keeps the moisture in the sod, enabling one to plow easily, while had the manure not been applied, it often gets very dry before we are ready for plowing.

Fresh manure applied on sod always turns up in fine shape at the second plowing, and when fall wheat is to follow, the surface is in an almost perfect state. In this way we are really giving both crops a fine application with the labor required for one.

In no case would I use foul, weedy bedding this way, but would heat the manure thoroughly and keep it moist. We draw out mostly on a jumper; when there is sleighing we go to the fields farthest from the stabling; when poorer roads happen we take the fields nearest us. In this way much of our heavy work is done when we are not busy, and at a season when the horses can enjoy a trip also. Seldom do we have to handle manure in hot weather, as we see some do, and our crops always seem to be better than those who allow it lying around from one year to another.

Cement Concrete for Silo Walls.

In various issues of the FARMER'S ADVOCATE, during 1894 and previous years, we have published articles describing in detail the best methods of using sand, gravel and cement in the construction of concrete walls and floors for stables. In our issue for July 16th, we promised to report for our readers upon the success or otherwise of a pair of cement silos built inside a barn at Bothwell, Ont., by Mr. T. D. Hodgins. He says the cost is less than a properly-constructed double-boarded silo; and, besides, it can never rot away. The walls stood the great pressure perfectly, there being no give or cracking anywhere. The outside walls were 18 inches, which Mr. Hodgins thinks is unnecessarily thick. More "cut off" was made in the corners, also, than was necessary. With lighter walls the cost would be materially reduced. The partition wall between the two silos was nine inches thick. A fine, smooth finish was got on the inside of the walls by Mr. Isaac Usher, who superintended the work, so that the ensilage settled perfectly. When filled, the top was covered with a couple of loads of cut straw, and there was practically no waste ensilage when this was removed. It was splendidly preserved right to the walls and in the corners Corn with more ears might have made richer ensilage, but, as it is, the result has proved entirely satisfactory, and up to last week one of the silos had been fed half-way down.

Remember that horses are made vicious by cruel treatment; that it is speed which kills; that probably more horses are lame from bad shoeing than from all other causes; that a careless application of the whip has blinded many horses; that more fall from weariness than from any other cause, and than no animal should ever be struck upon the head.

DAIRY.

Dairying in Manitoba.

BY JAMES ELDER.

I am gratified to find my contributions on dairying criticised by so many men of eminent ability and practical experience. In fact, I admit that (as Mr. Yuill suggests) I intentionally left a few blunt promonitories, or debatable points, to catch the eye and touch the sensitiveness of just such men, in order to draw out a discussion, and in this way throw more light, and from different standpoints, upon this, to the Manitoban, most important question.

We have all heard of the man who said:—"I am open to conviction, but I would like to see the man who can convince me."

Now, that is my position, only that I would substitute the conjunction *and* for but, which changes the meaning of the sentence very much.

Moreover, not only am I open to conviction, but I will feel grateful to any one who will show me a better way.

It is somewhat remarkable that there is only one point of attack which cannot be defended by a simple reference to my introduction, and even in that case a reference to my introduction greatly weakens the attack.

The clause which has played the part of the "Red rag" is the one in which I advise the young dairyman not to invest in thoroughbreds.

And it is noticeable, although not remarkable, that my critics upon this point are all breeders of thoroughbreds. And it is just a little funny that, as in a certain trial of old, "their witness agree not together," for one says the Holstein, another says the Shorthorn, and another says the Ayrshire; but all agree upon the one point,—"thoroughbreds."

It seems to me that there is a good deal of the "Bag of Straw" manifest in the criticism of these gentlemen, arising from a failure to catch the drift of my argument.

This is evident from the remark of Mr. Steel, where he says:—"Had Mr. E. told the public to give pure-breds a wide berth on account of cost, or against investing until they had experience, we would have found no fault with his advice." Now, this was just my chief argument. See ADVOCATE of Oct. 20, clauses 4 and 7. And here Mr. Yuill comes to my aid and says that "a good thoroughbred Ayrshire cannot be bought for less than $200." Now, I venture to say that every one of these gentlemen would advise to buy the "best," and what would intelligent men have thought of me had I advised the farmers of Manitoba, in their present financial condition, to invest in $200 cows when starting a dairy with a view to getting out of their present difficulties? Would it not be like telling a drowning man to get well under the water in order to get a good start up?

Mr. Lynch advocates the thoroughbred Shorthorn. Now, I am a great sinner, but I have never committed the sin of advising any person to invest in thoroughbred Shorthorn cows for dairy purposes. Oh, no! The nearest I ever came to that was to advise the use of a Shorthorn bull "of a milking strain" (an animal by no means too plentiful).

But here comes the poser. Mr. Lynch asks: "What is he going to do when he has got two or three crosses?" Crosses of what? Of the milking strain. Why, keep right on, of course. And what will be the result?

First.—I will have made a cheap start.

Second.—I will have intensified the milking tendency in my herd, and at the same time increased their size and improved their symmetry.

Third.—In the meantime, thoroughbred stockmen, being "observant" men and having an eye to business, will breed in the direction which the demand indicates, and the milking tendency will be developed and the strains increased in number.

Fourth.—I will have a hardier herd. How? Well, what are the causes of delicacy? Chiefly: first, in-and-in-breeding; second, fancy care from generation to generation. Now, in founding a herd, as I have suggested, I at once strike away from the first evil, and I can avoid the second, and by the time I have reached Mr. Lynch's "danger line," the danger will be largely done away. But say all at once: "Thoroughbreds are not pampered." Now, a discussion of this question would simply be a case of "It is," "it isn't." I will simply ask the reader to look into the stables of those who keep choice thoroughbreds, and also some grades, and see which occupy the warmest stalls, which get the oil-cake and the "odd handfuls," and which have the curry-comb applied. Or, look at the herd whose owner has seen better days, and tell me if they have not shrunk in size and developed an unwonted amount of horn.

Another says: "We don't want to test the hardiness of our cows" Oh, no. Neither do we want to test our bank deposit; but at the same time, a bank deposit is a mighty good thing to have.

Mr. Yuill states that "in his experience of thirty years with a herd of seventy-five cows, he has only had one cow which missed breeding, and never had an accident among his cows." Well, I must compliment Mr. Yuill. He has been a most fortunate individual.

Paying for Cheese-factory Milk by Test.

Judging from the amount of discussion in dairy circles since Bulletin No. 15, "Experiments in Cheesemaking," by Prof. H. H. Dean, was reviewed in the FARMER'S ADVOCATE of Dec. 1st, we certainly were correct in labelling it "A Disturbing Bulletin." It is a most important subject, both for the consideration of patrons, factorymen and makers, and a live topic for debate at the dairy conventions of this month.

The original plan adopted by a good many Canadian and American cheese factories was to pay for the milk according to its per cent. of fat, whether high, low or medium. The main reasons for this were, as indicated, for example, by a N. Y. State Station Bulletin, that (1) "the milk fat appears to exercise a greater influence upon the composition and yield of cheese than any other constituent, and therefore forms a just basis for estimating the cheese-producing efficiency of factory milk; (2) it induces dairymen to produce a better quality of milk; and (3) it removes any temptation to adulterate milk."

The Vermont Station, on the other hand, proposed (Bulletin 21) to take account of both the fat and casein, contending that "it is not a fact that twice as much cheese can be made from milk containing six per cent. fat as from milk containing three per cent." It suggested that the matter might be adjusted by paying a certain amount for the milk by weight, without regard to its quality, and a certain amount additional for each pound of butter-fat it contains. Thus, if 30 cents per 100 lbs. were paid for all milk, and 10 cents a pound for butter-fat, a milk with three per cent. fat would bring 60 cents per 100 lbs.; one with 4 per cent., 70 cents, etc. However, from later experiments (R. 1891, p. 88), it was concluded that the payment according to fat content "gives substantially correct returns."

The suggestion in Prof. Dean's now famous Bulletin was to add two per cent. to the fat readings, as ascertained by the Babcock test, it being claimed that this would be a more nearly correct method than paying either by weight of milk or by fat alone.

In the last statement which Prof. Dean has issued, containing the results of cheese experiments at the O. A. C. Dairy Department for May to Nov., 1894, are those of A. T. Bell, Tavistock; J. B. Muir, Avonbank; L. L. Philps, Mt. Elgin; E. A. Roode, Hulbert, and Wm. Dwyer, Chesterville; together with a reprint of the Tavistock Dairy School Experiments in 1892, and the Perth Dairy Station table; the following conclusions are drawn:

(1) "An increased percentage of fat in the milk gives an increased yield of cheese, though not in the same proportion."

(2) "That a pound of butter-fat in milk averaging 3.37 per cent. of fat will make more cheese than a pound of fat in milk averaging 3.94 per cent. of fat is shown by the results of the experiments at the Dairy of the O. A. College, and all the other Canadian experiments quoted point in the same direction."

(3) "There is little difference in the per cent. of fat lost in whey, whether the milk is rich or poor in fat, what difference there is being in favor of the whey from the poor milk."

(4) "Adding on two per cent. to the fat readings, and dividing the proceeds among the patrons according to this basis, appears to be more nearly correct for normal milk than paying by weight of milk or paying according to the percentage of fat alone. Though this number is tentative or suggestive rather than conclusive, we expect that something more nearly correct will be discovered in the near future."

Still another suggestion is made by Mr. J. W. Wheaton, Secretary of the Western Ontario Dairymen's Association, who proposes something for the use of factorymen corresponding to an interest table used by bankers. It is, in brief, to have compiled a table showing the actual value of different qualities of milk per 100 pounds for cheesemaking, by finding out the actual value of 100 pounds of milk for cheesemaking upon a basis of .05 of 1% as to quality and upon a basis of 1-16 of one cent per pound as to price of cheese. If this were done on a range of from 2 to 6% in quality of milk, and from 6 to 12 cents in price of cheese, it would, he thinks, cover any variation in quality of milk and in price of cheese that might occur in connection with the Canadian cheese-producing industry. It would entail considerable work and time at the outset, but when once completed would settle the question definitely. Such a table could be placed in the hands of every secretary of a cheese factory, and from it he could with comparatively little figuring make up his accounts.

"Beautiful Butter" from Turnips.

I saw in the ADVOCATE for December 15th, that "F. J. S." informed us good butter could not be made when turnips were fed the cows. I received a remittance from Montreal, the day I got your paper, for a quantity of butter, the cows having been fed turnips and hay. The buyer paid 22 cents for the butter, and said it was beautiful.

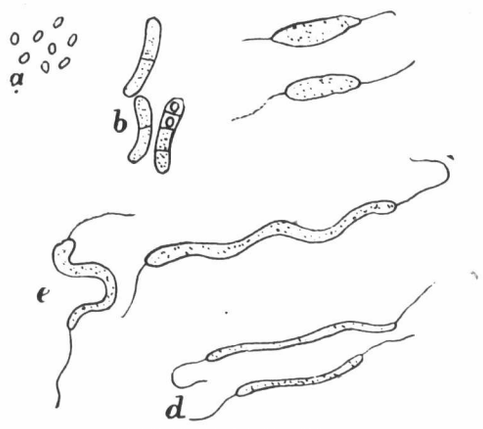
ROBERT WARK,
Windsor Mills.

[NOTE. Would Mr. Wark give our readers further information as to the quantity of turnips fed, method, before or after milking, etc.; also give his plan of handling and creaming milk.]

Microbes in the Dairy.

It is now nearly 200 years since the compound microscope was so improved that observers were enabled by its use to detect in stagnant water, vegetable infusions and scrapings of the teeth, very minute, almost colorless organisms, so small that, viewed with a magnification of 500 diameters, making their surfaces appear 250,000 times as large as the reality, they seemed not larger than pin-heads do to the naked eye. It is nearly a century since these organisms were classified according to their shape, but it was only in 1863 that they began to assume any economic significance, when Davaine, stimulated by Pasteur's researches upon the ferments, reported his investigations establishing the connection between certain bacilli in the blood of animals and the splenic fever that accompanied their presence. In 1869, Pasteur traced the contagious disease of the silk-worm to a special kind of micro-organism. In 1875, Koch took up the study of the bacilli of splenic fever (anthrax) where Davaine left off, and by cultures and inoculations proved beyond question the causal connection between the germ and the disease, and laid the foundation for the science of bacteriology.

The new science rapidly enlisted a host of students and investigators in all civilized countries, and while the general public has had its attention called mainly, almost solely, to the results obtained so far as they relate to the practice of medicine, practical bacteriologists have been busy in many other fields, as witness a table in a recent manual setting forth the concise biology, products, culture characters, actions and habitats of 188 species that are either indifferent or beneficial, and but 93 species, all told, that are supposed to produce disease in man, lower animals, including insects, frogs, etc., and plants.



FORMS OF BACTERIA.

(a) Micrococcus of gangrene.
(b) Bacillus megaterium, one with two spores; 600 diameters.
(c) Bacterium lineola; 3,000 diameters.
(d) Vibrio rugula; 4,000 diameters.
(e) Spirillum undula and volutans; 2,000 diameters.

While it may be justly claimed that bacteriology has benefited mankind chiefly through its contributions to the practice of medicine, yet we predict that within a few years it is destined to aid successful dairying to an extent that will defy computation. Lecturers at farmers' and dairymens' conventions, and the agricultural and general press, have begun to tell forth what the bacteriologist has discovered in the cow-byre, the milk-vessels, the creamery and the cheese factory, as well as in the cow's body. It was to be expected that these discoveries and their practical inferences would be collected and published in book-form. It is a pleasure to announce that this has been done, and in such a manner that he who runs may read.

Two books recently published will be welcomed by the wide-awake dairyman and student, not only for the importance of the subject which they treat, but also for the practical and non-technical method of the treatment.

One (1), entitled "The Principles of Modern Dairy Practice," is by the eminent Scandinavian, Professor Grotenfelt. The key-note of this work is the proposition laid down by Ernst Kramer, that "Dairying is an art, the success of which depends almost entirely on the extent to which we succeed in controlling the various fermentation processes in their course," and, although it is written from the bacteriological point of view, only about 20 pages are occupied with a general discussion of bacteria; the remaining chapters are under such titles as sources of infection of milk, milk for city consumption, sterilization of milk, cleanliness in butter and cheese factories, systems of gavity creaming, separator cream, skim-milk, treatment of cream previous to churning, manufacture of butter, diseases of butter, methods of cheesemaking. To illustrate the importance of bacteria in dairying, the author cites a case that occurred on the estate of H. Friis, well-known in Denmark as the winner of many prizes for high-grade butter. A year or two ago it suddenly became impossible, in spite of every care and precaution, to produce first-class butter on his estate. There was nothing wrong with the milk when taken from the cow, but in a short time afterwards a putrid smell and taste would develop in the milk and reappear in the butter. To remedy the evil, for the financial loss on this large estate was great, dairy experts were called to investigate, without avail. It became suspected that the cause was bacterial, and Prof. C. O. Jensen, the eminent bacteriologist, was brought from Copenhagen. He discovered that a minute species of bacterium had infected the stables and every place where the milk was handled; it was over the udders of the cows and in the dairy buildings; he introduced the microbe into healthy milk and produced the changes characteristic of the diseased product. He further found that the germ could be killed at a comparatively low temperature, 149° F., and that it easily succumbed to disinfection. The natural course of treatment suggested by the results of his investigation was adopted, and in a short time first-class butter was again produced on this estate. The importance of cleanliness of the cow, of the stall, of the milker, of the utensils, is plainly shown from different points of view. The milk of a healthy cow, after the fore-milk is drawn off to clean out the germs that have multiplied at the mouth of the teat since the previous milking, if drawn through a sterilized tube into a sterilized bottle and hermetically sealed, is free of germs and will remain fresh and sweet for years. Examinations have shown that when the milk is passed through the air into bottles and pails in the usual manner, it contained:—

10 bacteria per c. c. m.	milked in pasture on a fresh, calm, damp, summer morning.
106 " " "	where cows were brought into the stable to be milked.
530 " " "	from cow kept in stable, milked into bottles.
30,500 " " "	from same cow milked into open pail when the milkman disturbed the bedding, and shook the udder of the cow more than usual.
670,000 " " "	from a cow in a filthy and dark stable, three-fourths of an hour after milking.

These calculations are not difficult to make with the cross-line micrometers as used on modern microscopes for counting blood corpuscles. A cubic centimeter (c. c. m.) is about one-quarter of a teaspoonful.

When to these rapidly multiplying fermentative and putrefactive bacteria we add impurities, such as the innumerable particles of manure from switching tails and crusted hips, dust from the bedding and off the cows' skin, spores of moulds and other fungi, gaseous taints arising from foul gutters behind the stalls, and other dirty places adjoining the cow stable, it is not to be wondered at that so much milk is more or less spoiled and fails to give satisfaction to its consumer—be it of milk, butter or cheese—or the highest rate of profit to its producer. In dairying, cleanliness is very near both godliness and financial success.

The other work (2) is by Prof. Russell, Bacteriologist in the University of Wisconsin. It is divided into three parts, dealing respectively with bacteria in general, relation of bacteria to milk, and relation of bacteria to butter and cheese. Its style of treatment and abundant reference to the bibliography of the subject will render it particularly valuable to students in agricultural colleges endowed with good libraries. It abounds throughout with precautions and suggestions deduced from the observations described. The causes and treatment of the conditions known as soapy milk, red milk, blue milk, and other infectious states of milk, as well as abnormal conditions of butter and cheese, are discussed in the light thrown upon these phenomena by the science of bacteriology.

(1.) The Principles of Modern Dairy Practice, from a bacteriological point of view, by Grotenfelt, translated by F. W. Woll, Professor of Agricultural Chemistry, University of Wisconsin. Illustrated. New York; Wiley & Sons. Pages, 285. Price, $2.00.

(2.) Outlines of Dairy Bacteriology, by H. L. Russell, Ass't Professor of Bacteriology, University of Wisconsin; Madison, Wisc. Published by the author. Pages, 186.

Dairying in Eastern Ontario.

The eighteenth annual convention of the Dairymen's Association of Eastern Ontario was held in Gananoque, on Jan. 2nd, 3rd and 4th. The meeting was largely attended by the representative dairymen from the various sections of Eastern Ontario. Practical and stirring addresses were delivered by leading Canadian dairy authorities and Mr. John Gould, of Ohio. The convention was considered to be one of the most successful held in the Eastern part of the Province. The dairymen were entertained to a well-ordered banquet on Tuesday evening by the citizens of Gananoque.

Officers-elect.—The officers elected for 1895 were: President, Edward Kidd, North Gower; 1st Vice, E. J. Madden, Newburg; 2nd Vice, John McTavish, VanCamp. Directors—Wm. Eager, Morrisburg; R. N. Craig, North Gower; J. R. Dargavel, Elgin; Jas. Whitton, Wellman's Corners; T. B. Carlow, Warkworth; Henry Wade, Toronto. Auditors—Morden Bird, Stirling; Wm. Bissell, Algonquin. Secretary, R. G. Murphy, Elgin.

One of the pleasing features of the convention was the presentation of an address to the Hon. Mr. Dryden, Minister of Agriculture, by the Gananoque Board of Trade, and one to Mr. N. Awrey, Ontario's Commissioner at the World's Fair, by the dairymen of Eastern Ontario, for excellent services rendered the dairy industry.

The following are some of the salient points brought out on the various subjects discussed:

Cow. Should be bred for dairy purposes only. Pay more attention to the individual cow than to the breed. A cow's breeding is what she inherits. Do not have them drop the calf before they are twenty-four to twenty-six months old. After first calf a heifer should run sixteen months at least before the next calf is dropped.

Feed.—Should be succulent and nourishing. The silo affords the best means of preserving such food. Milking cows should have some grain every day in the year. [NOTE. All do not concur on this point. Ed.] In caring for the cow recognize her maternity. Wooden silos give best satisfaction. Corn should be planted shallow, and should not be cultivated, but harrowed frequently with a light harrow when young; cultivate frequently afterwards.

Dairy Practice.—The washing of gassy curd at a temperature of from 108° to 110° recommended in order to get out the foul odor. Returning home whey in the milk cans thought to be the cause of sweet milk thickening, especially in the late fall. The paying for milk for cheesemaking according to its quality strongly recommended. Winter dairying a profitable business for the winter, when proper stabling and proper food is provided.

The Trade.—The appointment of a competent inspector at Montreal to decide as to the quality of cheese when there is a dispute between buyer and salesman; to apply more particularly to Eastern Ontario. Necessary to keep up the quality of goods in order to keep up the price. If the quality is good there is not much danger of overstocking the market.

Further Development.—The Ontario Minister of Agriculture announced his decision to establish a pioneer dairy farm in north-western Ontario, along the C. P. R. route. The object is to develop dairying in that portion of the Province, and to provide farmers, who contemplate settling, with practical knowledge of what can be done. It is proposed to locate this farm between Port Arthur and Rat Portage, probably near the crossing of the C. P. R. at Wabigoon River, where there will be good enough land in a single block to make two or three townships. The country is well watered and wooded, lakes full of fish, and the soil very rich. Its agricultural possibilities are most promising.

Educational.—More active efforts towards improving the quality of the cheese by the Association through its instructors. Dairy schools at Kingston and Guelph highly recommended, and makers strongly urged to attend.

The New Eastern Dairy School.—The new dairy school in connection with the School of Mining and Agriculture, Kingston, was successfully inaugurated by a grand banquet on the evening of Jan. 4th. A large number of convention delegates remained over for it. Addresses were delivered by prominent men connected with both of these branches of industry. The Dairy School at Kingston is in successful operation, with as many students as can be accommodated. There are already nearly enough applicants to keep it supplied till spring. The building is in the heart of the city. It is compact and well adapted for the purpose, containing separate rooms for cheesemaking, buttermaking, milk-testing, with a curing-room for cheese and a store-room for butter. There is also a commodious lecture-room in an adjacent building.

The Bothwell Dairy Farmers' Club.

A few issues ago we gave an account of the establishment of a large and splendidly equipped cheese and butter factory near the town of Bothwell. The promoters of that enterprise and the patrons have now taken another step which ought to prove beneficial. At a well-attended meeting in the Bothwell Town Hall they organized "The Bothwell Dairy Farmers' Club," with the object of holding fortnightly meetings of the farmers of the locality, where all matters connected with dairying would be discussed, papers on various subjects read by members and discussions to follow each paper. A series of practical addresses upon dairying and other subjects are being arranged for the remainder of the winter. It is hoped that this Club may be the means of showing the advantages which may be gained by organization. There are very many localities where a similar course might be taken with great advantage.

Mr. J. W. Wheaton, of the Western Ontario Dairymen's Association, gave a short address on the need of organization in all trades and professions, and showed the advantages arising therefrom, and pointing out what assistance this Club could be to the dairy farmers of Bothwell.

Twenty-five members entered their names on the Club's books, and appointed the following officers:—President, Alexander Brandy; Vice-President, John Sheppard; Treasurer, Geo. Smallwell; Secretary, S. C. Mason. A committee was also appointed to further the Club's interest in their particular districts, consisting of Messrs. A. McLean, S. Rush, A. Marcus, T. McCrutchie, H. Powell, John Buchanan, J. Tenney, J. Sheppard and S. C. Mason.

The Club then adjourned until Thursday, Dec. 20th, when a lecture was to have been delivered by Mr. J. B. Millar, Instructor of the Western Ontario Dairymen's Association, but owing, however, to illness, he was unable to be present, and Mr. Wheaton took his place. About thirty members were present, Mr. John Sheppard in the chair. Mr. Wheaton's subject was "Winter Dairying." He paid a tribute to the agricultural press as a means of advancement in farming. Too many farmers, instead of moving with the times, travel in the old rut. Winter dairying is a step in advance. He dwelt upon the fact of increasing competition from distant countries—Australia and New Zealand, for instance—whose dairy products in the English markets threaten to displace Danish butter from the premier position held for so many years. Why cannot Canada occupy the same position in butter that she does in cheese? If this is to be done, greater attention must be paid to winter dairying. Cheese factories and winter dairies are a help to a district, giving more employment, raising the renting and selling value of surrounding farms, and

giving the farmer an opportunity to have a steady income all the year round. The difficulty was so many made a mere "chore" instead of a business of dairying. He emphasized the importance of starting with good cows, and pointed out that where every little detail in the care and feeding of cows is properly attended to, and no false economies practiced, the bank account will begin to show an appreciable balance on the right side. At the close of his address, Mr. Wheaton answered many questions asked by those present.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Legal.

THE OATH OF ALLEGIANCE.

READER, Kirkwall:—"A person who was a British subject, moved to the United States and took the oath of allegiance there. He has now returned to Canada, and wishes to vote here; must he take the oath of allegiance to the Queen?"

[Yes.]

Veterinary.

SPRAIN OF THE HIND LEG.

SUBSCRIBER:—"I have a valuable four-year-old mare; she strained the cords of her off hind leg when about two years old; recovered under treatment; and although not lame, she appears weak on that leg, especially when driven any distance. Is there any help for it? An answer in your paper will greatly oblige."

[Sprain of the ligaments and tendons of the hind leg are always tedious in recovery, especially when they occur in young animals. The further apart the torn ligaments and tendons were separated the longer would it take to recover, depending on the extent of the damage and amount of swelling, etc. Get rid of the swelling, or thickening, as it is termed, is the first procedure. Procure a linen bandage three to four yards long and four inches wide, and a quantity of cotton, wool or batting. Apply a sufficient quantity of the batting to wrap around the leg, then apply the bandage firmly over and around the parts. Hand-rub the leg twice a day for half an hour, and give one hour's walking exercise; you might also apply a simple liniment, say tincture of arnica, one ounce; soap liniment, two ounces; water, one-half pint. Keep up the hand-rubbing and bandaging for about three weeks. By these means no doubt complete recovery will take place.

DR. W. MOLE, M. R. C. V. S., Toronto.]

DEBILITY.

SUBSCRIBER, Rathwell:—"I have a colt coming two years old; he is very large, a little overgrown; eats very hearty, but is very thin; lies down the greater part of the time; sweats (when in the stable) over the kidneys and over the hind quarters. Kindly let me know through your columns what is wrong with him and what I should give him to cure him."

[The debilitated condition of your colt, if not the result of improper food, is probably due to worms or other internal parasites. Give on an empty stomach: raw linseed oil, twelve ounces; turpentine, six drams; oil of male-fern, half a dram. Forty-eight hours after giving the above dose, give morning and evening, in scalded bran mash, for one week: powdered areca nut, three drams; sulphate of iron, half a dram; nitrate of potass., one dram. Give a mid-day ration of good chopped oats. See that your stable is kept clean and properly ventilated. W. A. DUNBAR, V. S., Winnipeg.]

BOG SPAVIN.

READER, New Brunswick:—I have a colt two and a-half year old. Its hind legs are both puffed at the gambrel joint on the inside and front of joint. Swelling is soft. I blistered it several times, and every time it goes away for a few days, and then it will swell up again in one day or a night. Is not lame or stiff or sore. Is in good condition and good health.

[This may be described as a dropsical condition of the true hock joint, being the result of abnormal secretion of synovia, causing enlargement of the capsular ligament without acute inflammatory action. They appear as soft, symmetrical tumors of varying size, generally well-defined in front of the true hock joint; usually painless; only cause lameness under certain exacting conditions; more frequently caused by severe labor or strains from heavy pulling or fast driving in young animals. If repeated blisters have failed to remove these conditions, a judicious application of the firing-iron by an expert veterinarian should be tried.

WM. MOLE, M. R. C V. S., Toronto.]

INVERSION OF THE UTERUS.

QUEBEC READER:—I have a five-year-old grade Holstein cow, now carrying her third calf, due to calve in April. When she lies down her wethers will come out about the size of a half-gallon measure, and the cow will press hard. When she gets up they will go back; she will sometimes press when standing up. She cast her wethers in calving last spring. She is milking well now. I am giving her six quarts of mixed cotton-seed and shorts once a day; have been "mealing" her for about three months. Some days she seems worse than others; seems to want to lie the most of the time; eats and looks well.

[From your description, the cow has inversion of the uterus, or mouth of the womb. In these cases the cow is always liable to abort the calf, and it usually occurs in poorly-kept animals during their pregnancy, and from the stall being much higher in front than behind. It is a gradual distension of the lower wall of the uterus; and on examination, the form and movement of the fœtus, or young calf, can be felt. However unsightly this may be, do not let anyone meddle with it. For treatment, give good nourishing food and plenty of it. Bathe the parts with cold water (not ice cold) night and morning Apply a rope truss to the parts and keep it in position until her period of parturition is completed. Have the stall elevated behind until her hind parts are much more elevated than her front, and keep her in that position. As long as she does well there is no fear of any bad consequence during her calving. WM. MOLE, M. R. C. V. S.]

Miscellaneous.

TROUBLE WITH THE CREAM.

A. S., Ontario:—"We have had trouble with our cream the last month; it will not gather into butter. We have tried almost every known plan, and all we get is a light, white foam, like icing, without a sign of grain in it. Our cow is farrow. Our first bad churning was from the milk of five cows (four in calf), which are now dry, but the cream from the farrow cow is no better. Her daily food consists of about a bushel of raw Swede turnips, one good feed boiled potatoes and turnips, a bran mash, three-quarters of a gallon of oats; straw and chaff. Any suggestions in your next issue would greatly oblige."

[Our correspondent does not say what plans have been tried, but we would suggest adding the milk of a fresh cow, which might overcome the difficulty entirely. But if not in a position to do that, the rations fed should be dealt with. In the Dec. 15th issue of the ADVOCATE, our correspondent, "F. J. S.," reported cases where cream could not be churned, because of improper feeding. In view of the quantity of turnips fed, the above ration is one-sided. We would suggest that, say, three-fourths of the raw turnips be fed the dry cows, the boiled turnips discarded, while the boiled potatoes in small quantity, and the remainder of the turnips, pulped, be mixed with the cut straw and chaff and allowed to heat twenty-four hours. Add to this mixture the oats (ground), and if available, four or five pounds of pea-meal (stone ground), as the bran and oats are not a sufficient grain ration with the other fodder. If a little clover hay is available it will benefit the ration.

But the difficulty may lie in another direction. Cream that is too cold frequently foams in the churn, just as when one beats cream for cake-icing. In cold weather, at this season, 67° or 68° is about the proper temperature, if the thermometer is reliable; but if it still foams, heat it, say, to 72°, and note results. Cream should not be very sour; only moderately so. If too sour, and churned at too high a temperature, foaming may result. The cream should be kept at a temperature just low enough to keep it sweet, no lower, preparatory to ripening. Unless the case is one of the "incorrigibles" (and there seems to be a few such), some of the foregoing suggestions should get over the difficulty. Will our correspondent give our readers the benefit of his further experience]

GARDEN AND ORCHARD.

Pithy Points on Orchard Cultivation.

Apple culture is becoming one of the paying institutions in many parts of this country. A thorough knowledge of the best methods of cultivation is necessary to those who will ever make the business a success. The following practical hints are taken from Bulletin 72, of Cornell University Horticultural division, prepared by Prof. L. H. Bailey:—

If orchards are to be made profitable, they must receive as good care as other crops.

Good drainage, natural or artificial, is essential to success. Trees are impatient of wet feet.

Well-drained lands are dryer in wet spells and moister in dry spells than other lands. They can be worked earlier in spring.

Good tillage increases the available food supply of the soil, and also conserves its moisture.

Trees should be made to send their roots deep into the soil, in order to fortify themselves against drouth. This is done by draining the soil and by plowing the orchard rather deep.

This deep plowing should begin the very year the trees are set, and it should be continued every spring until the habit of the trees is established.

Moisture is retained in the upper soil by very frequent but shallow tillage, by means of which the surface of the land becomes a mulch for the soil beneath.

Tillage should be begun just as soon as the ground is dry enough in spring.

This tillage should be repeated as often as once in ten days throughout the growing season, which extends from spring until July or August.

Tillage should not exist for the purpose of killing weeds. Weeds have taught the most important lesson in agriculture, to be sure, but the schoolmaster should now be able to retire.

Late cultivation may be injurious by inducing a late growth. At all events, it can be of small utility when the tree begins to mature and rains become frequent. This season of respite gives the grower the opportunity of raising a green manure, and of adding fertility to his land at trifling expense and with no harm to his trees.

Fall plowing may be advisable for farm crops, but it should generally be discouraged in orchards. The land in orchards should be left compact in the fall, and it is advisable to cover it with some close herbage.

Only cultivated crops should be allowed in orchards early in the season. Grain and hay should never be grown.

Nursery stock should not be grown in orchards.

Even hoed or cultivated crops may rob the trees of moisture and fertility, if they are allowed to stand above the tree roots.

Cultivators is the best crop to raise in an orchard.

Sod is sometimes allowable in apple and standard pear orchards, but never in other fruit plantations; but even then it should be pastured closely with sheep or hogs. If the stock is fed at the same time, the land will fare better.

Watch a sod orchard. It will begin to fail before you know it.

Probably nine-tenths of the apple orchards of New York State are in sod, and many of them are meadows. Of course they are failing.

The remedy for these apple failures is to cut down many of the orchards. For the remainder, the treatment is cultivation, fertilizing, spraying,—the trinity of orthodox apple-growing.

In general, level culture is best. The modern cultivators and harrows make such cultivation easy.

Trees, especially apples, are often trained too high, because of the difficulty of working close to them. Modern tools will bring the heads within reach.

Harnesses with no projecting hames nor metal turrets should be used in bearing orchards. Those requiring no whiffletrees are also useful.

Potash is the chief fertilizer to be applied to fruit trees, particularly after they come into bearing.

Potash may be had in wood ashes, and muriate of potash. It is most commonly used in the latter form. An annual application of potash should be made upon bearing orchards. Of the muriate, from 500 to 700 pounds may be used to the acre in mature orchards.

Phosphoric acid is the second important fertilizer to be applied artificially to orchards. It may be got as plain high-grade superphosphate (dissolved South Carolina rock), in the bone fertilizers, and perhaps in Thomas slag. Of the plain superphosphates, from 300 to 500 pounds may be applied to the acre.

Nitrogen can be obtained cheapest by means of thorough tillage (to promote nitrification) and nitrogenous green manures. There is rarely occasion for buying it for fruit plantations, if the lands are properly tilled and cropped.

Nitrogen promots growth. It should therefore be used with some caution, for orchard trees should be grown for fruit rather than for timber.

Barn manures are generally more economically used when applied to farm crops than when applied to orchards; yet they can be used with good results, particularly when rejuvenating old orchards.

In general, the commercial complete fertilizers are less rational for orchards than a fertilizer made for the occasion out of materials evidently needed by the trees; but the complete fertilizers give much better results than the prevailing indifference and neglect.

Cultivation may be stopped late in the season, and a crop can then be sown upon the land. This crop may serve as a cover or protection to the soil and as a green manure.

A green manure improves the soil by adding fibre to it and by increasing its fertility. It catches the nitrates which, earlier in the season, are used by the tree-roots. Vegetable fibre in the soil increases its power of holding both moisture and plant food.

The crops well adapted to this late sowing are few. Vetch is probably the best which has been well tested in the State. But everything points to crimson clover as the ideal orchard cover and green manure.

The gist of it all is that orchards should be cultivated and fed. Cultivation should begin early and be continued often. It may be stopped in August, if the grower thinks best, and then, if the land needs it, a green crop may be sown for turning under the next spring.

Ontario Poultry Show at New Hamburg.

The annual show of the Ontario Poultry Association during the first week of January, at New Hamburg, was a grand success, indicating the thrifty condition of this industry and the energy with which the affairs of the organization are managed. The entries numbered 1,300, being 60 in advance of last year. A marked feature of the exhibition was the uniformly high scoring of nearly everything shown. Pet stock was well represented, as well as the more useful sorts. Detailed report is unavoidably held over for later issue.

Co-operative Apple Growing.

(A paper read by E. B. Edwards, Peterboro', Ont., before the Onta io Fruit Growers' Association.)

I advocate the extension of apple-growing on the principle of co-operation which has already been found of so great advantage in other branches, and more especially, so far as farmers are concerned, in the matter of cheesemaking. This co-operation may be on a large or small scale. It may be only the friendly union of two or three farmers in a neighborhood, or it may include a township or a whole county, and it may apply to those who have only small orchards as well or perhaps even better than to those who have large ones, for the latter are generally able to take care of themselves.

(1) Co-operation may well begin with the gaining of knowledge on the subject. The two or three may make it a point to compare notes and exchange ideas and information, and the larger body may hold meetings and secure the presence of those who may be able to impart instruction with regard to the kinds of apples to grow, the best modes of growing them, and the best modes of disposing of them.

(2) As a second step, co-operation in buying trees for planting will secure the advantage not only of lower prices, by ordering in larger quantities, but also of greater attention to the order, the prevention of the petty frauds of the "tree peddler," and greater satisfaction in every way. If I want 50 trees and two of my neighbors want 25 each, each of us will gain by sending in an order for 100 trees at the lowest rates that are offered for that quantity. This is an obvious and immediate advantage affecting the pocket, and is one that is within the reach of a small number who may choose to unite, as well as of the larger number.

(3) When the orchard is in bearing, there may with advantage be co-operation in such a matter as spraying, where the size of the individual orchard does not seem to warrant the providing, by each one, of a proper spraying pump. Two or three farmers in a neighborhood may purchase a pump and provide the materials between them, or a larger number may arrange with a man who owns an outfit, to make a round of their neighborhood at the proper times. Many a farmer neglects to spray his orchard because he thinks it hardly worth while to get a pump for himself, or because at a busy time he does not want to be bothered with something that he knows very little about.

(4) When the apples come to be picked and marketed, there is not only a fresh advantage to be gained from co-operation in marketing them, but there is a summing up of all the advantages already gained, the test and the realization of the work of the earlier years. The knowledge and information gained, the prudent selection of varieties suitable to the locality and suitable for the market, the care in training the trees from the first year upward, the spraying, the tilling and manuring of the ground, are all telling upon the crop produced. If the kinds of apples have been carefully and judiciously selected to begin with, the co-operating neighborhood will become known for certain good varieties of shipping apples. If the trees and the ground have been properly cared for, and the trees have been properly sprayed, it will also become known for the quality of the fruit produced. Buyers will be attracted to such a neighborhood, and if an immediate sale be made to them better prices will be obtained on account of the uniformity and quality of the fruit, and that without any combination to keep up prices; or, if a shipment to the English or other market be determined upon, the advantage of co-operation becomes even more apparent. The man who has only one acre or two of orchard has not a sufficient quantity to ship by himself. By uniting their forces, two or three or a larger number may make up a carload or a larger quantity and thus secure the advantage of the grea'ly reduced rates applicable to the largest shipment. Having a larger quantity, too, there is an advantage of dealing with the commission agent and the better knowledge of the market.

(5) For windfalls and fallen fruit, co-operation may secure a joint evaporator. This is a matter of great importance, not only to provide a proper means of disposing of this class of fruit, but also to avoid the unwise course of glutting the market with poor and decaying apples, which disappoint both seller and buyer. This evaporator may be either on a large scale in a town or village, or may be a smaller one for a smaller neighborhood.

To sum up, I recommend the formation of county societies to bring together all those who are interested in the subject, at stated intervals, and to hold meetings for discussion and gathering information, and to work together as far a possible in the direction indicated. In addition to this, the apple-growers in a locality, even if they be only few in number, ought to be in touch, the one with the other, and assist one another in such matters as spraying and the like wherever necessary. My ideal would be to see ten, twenty or fifty farmers in a neighborhood meet together and form a "co-operative society," each one agreeing to plant within the next five years ten acres of orchard, the varieties to be few in number and all suited for shipment; to properly study and carry out the care of their trees, and when the time should come for fruit-bearing, to unite in sending their apples forward under their own brand to the English market, having their evaporator for the windfalls, and, if necessary, their central frost and heat-proof storehouse at the central shipping point.

Development of Plants.

BY GEO. BARTLETT.

If the seed of a plant be carefully examined, it will be found to contain a miniature plant. We see a small, rounded body which is nearly divided into two parts, connected at one end by a small, short stalk which seems to be fastened to both divisions. This little stalk is a sort of stem from which these divisions (Fig. 1—*a*, *b*) have grown. In the pea or bean, therefore, we see the embryo of the future plant. The small stalk (c) is the undeveloped stem and root. It is called the radicle; the swollen leaves are called Cotyledons. They are the undeveloped vines. The Cotyledons are swollen because they are stored with food for the young plant. It is its store-house in the same way as the root of the turnip, the head of the cabbage, and the tuber of the potato are the store-houses from which these plants draw their food supply while forming their seeds. As the plantlet grows, it draws on its food supply until it is used up. The Cotyledons then assume their proper thickness. This process may easily be traced by watching the Cotyledons on first leaves of the cucumber. While this is going on the radicle grows upward and downward. The upward extension becomes the stem; the lower becomes the root. So much for the development of the parts of plants. They are all formed from an embryo having the same parts. It is a plain fact that there are vast differences in the shapes of trees. What is the cause of this? Why is the pine a tall tree, and the apple a short, round-topped tree? This may be explained by a brief consideration of the different methods of branching. Branching is caused by the development of lateral or side buds. At the end of every perfect stem are formed side buds, and buds on the ends of the stems, or terminal buds. If for some cause the end bud only is developed, a straight, branchless stem is formed. If the side buds are developed and the terminal bud is not, a forked stem is formed. Let us apply this to the apple and the pine trees. In the apple, as a rule, the side buds develop. This forms a fork (as at *a*, Fig. 2). The next year the two side branches form forks in the same way (as at *b*, *b*). This process, repeated from year to year, gives the tree a branchy, round-topped appearance. (Fig. 2.) In the pine the terminal buds develop rapidly, and grow at the expense of the side buds, which are consequently much less vigorous. This produces a straight trunk with smaller branches. The pine tree is, therefore, straight and cone-shaped. Many curious forms of branching are produced by peculiar developments of the buds. Sometimes only one side bud develops. If the buds on the same side of the stem grow every year, a structure is formed like that shown in Fig. 3.

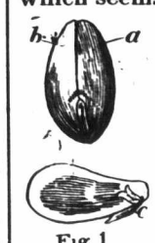


Fig 1

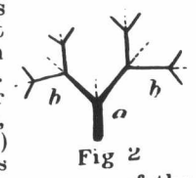


Fig 2

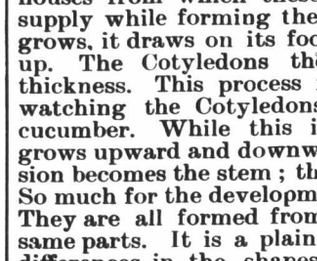


Fig 3

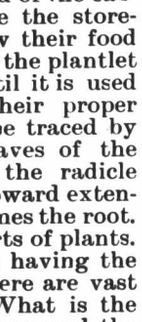


Fig 4

Sometimes one lateral bud develops one year and the other lateral bud the next, and if a process of alternate lateral bud development be continued year after year, a zig-zag structure is formed, like that shown in Fig. 4. This method is called scorpoid branching, on account of its resemblance to the zig zag way in which a scorpion travels.

Though all these figures show regularity of method, we see no such regularity in the trees themselves. Why is this? The fact is that nature follows these patterns; but there are other influences at work which mar the regularity of the design. If all the growing buds were permitted to develop, we should have the design regularly carried out, but many of the buds are destroyed. Some of them are eaten by birds; some are destroyed by frost, and some are starved to supply other buds.

These buds often remain latent for years, and develop when a favorable opportunity occurs. Cases have been known when all the flowers of a tree have been destroyed by frost, but the tree was again covered with blossoms in a short time. This was owing to the latent or undeveloped buds, which were enabled to grow when their food supply was increased by the destruction of the buds which had hitherto been robbing them. This plan of nature, which provides more buds than can develop, is a wise provision, as it enables the tree to survive frosts and the ravages of birds and insects.

In trees or plants where the terminal bud is strongly developed, the lateral buds are often deprived of sufficient food supply and kept from developing. This is the case in spruce and pine. Latent buds are, therefore, quite common in these trees, which accounts for the knotty nature of their woods; thus the destruction of buds from various causes, and the failure of other buds to develop, destroys the originally perfect pattern, and makes it difficult to trace out the original design from examination of the fully developed plant.

The last season has taught dairymen that nature is not always to be depended on to furnish good pasturage, either summer or fall: therefore it behooves them to supplement nature in the best way possible.

POULTRY.

The Poultry Association of Ontario.

The annual meeting of the Ontario Poultry Association was held in New Hamburg on the afternoon and evening of Thursday, January 3rd. The meeting was well attended by energetic breeders and showers of fancy and utility fowls. The testimony of old members was to the effect that this meeting excelled all previous ones in its practical teachings.

The address of the President, Mr. C. F. Ernst, contained some suggestions worthy of consideration. Owing to the healthy condition of the treasury, it was recommended that the Association purchase and own coops to be used for exhibiting birds, and that enough be supplied to furnish single coops for all who desire them, and that they be shipped to the place of holding the show from year to year.

Utility Better than Fancy Points.—President James Mills, O. A. C., to show the value of careful, well-conducted work, referred to a New York farmer who kept on forty acres 600 White Leghorn hens; he engaged a hired man and a hired girl, who did all the work above that done by the farmer and his wife. His horse stock consisted of three animals. Now, by careful work and marketing eggs every day, a business was worked up in New York City that paid him fifteen cents per dozen above the market price the year round. The secret is found in the fact that every egg offered for sale was not more than three days laid. Mr. Mills spoke of what he considered useless effort being put forth in the development of fancy points, such as feathery feet, to hold snow and moisture, and immense development of comb on other breeds, which required very warm quarters to keep them from freezing. These points should be considered of much less value than size and form, in the strictly utility breeds, such as farmers make money out of.

Housing Poultry.—Mr. Chas. F. Wagner, Toronto, furnished a valuable paper on the construction of a poultry house, and care of the birds. The location should be high and dry, and well sheltered. The building should be oblong rather than square, so that the hens get plenty of exercise and also more freedom and room at feeding time. The broad side should face the south. The roof is much better low than high—say 6 feet on high side, sloping to 4—in order to obtain the greatest amount of warmth. Mr. Wagner is of opinion that the roof should slope to the north, so as to hold snow to keep out the cold. But the consensus of opinion brought out in discussion favored a southern slope, so that the sun's rays should keep the roof dry, and thus warmer than if covered with snow or ice. The walls and roof should be made air-tight with building paper outside and in. The roosting-room should be frost-proof, and apart from the day or scratching apartment, which should be well lighted and littered with chaff or leaves, in which grain should always be fed. The cock bird should never be allowed with the hens except in the breeding season. This point was well discussed, which brought out the fact that eggs unfertilized will keep sweet and good an almost indefinite length of time, and that flocks without roosters will lay a greater quantity of eggs.

"*Poultry-keeping on the Farm*," by Mr. Dilworth, Toronto: On too many farms the hens have no care whatever, but are allowed to roost in trees and other cold places, and are fed, if fed at all, by having grain thrown to them at irregular intervals of two or three days. They are often alive with vermin, and chicken cholera and roup are no strangers to the flocks. The whole matter is just this: the hens are non-producers, and therefore condemned by their owners as being dirty, unprofitable stock. Now, just to look the matter squarely in the face. Would any class of stock or any line of business pay if so neglected? As general purpose fowls, Mr. Dilworth has found Plymouth Rocks and Wyandottes among the best sorts. These make splendid broilers, but should be hatched during March and April. Just here the use of an incubator was strongly recommended. For morning, feed boiled potatoes and shorts, fed warm: for noon, ground meat and bone, and for the evening ration, whole grain should be thrown among chaff to be scratched for. As soon as the hatching season is over, the cocks should be removed from the flock for reasons given above. Mr. Dilworth referred to the suicidal result of selling eggs of uncertain soundness, as is too often done. If good fresh eggs were the only ones sold, there would be a far greater demand than at present, at a much higher figure than is now paid. The fact is there are hundreds of city families who would gladly pay a high price the year round for perfectly fresh eggs. Now, really fresh eggs can only be obtained by regular gathering, and marketing within three or four days, if fertilized, or by removing the cock and keeping the eggs clean and cool until placed on the market. In the course of the discussion it was agreed that the Indian Game crossed with the Buff Cochin makes a splendid broiler, owing to their rapid growing qualities, plumpness, and yellow color of pin-feathers. Here again the incubator was recommended.

"*Poultry on the Farm*" was the title of an able and comprehensive paper read by T. E. Duff, a successful Toronto exhibitor. This paper contained many valuable suggestions. Fowls will pay more profit than any other stock, if given proper attention. Clean, wholesome food and pure water should be given regularly two or three times daily, accord-

ing to conditions. Laying stock should be kept busy scratching all day long, which will keep up health and vigor, if in comfortable, clean quarters, which should be well lighted and roomy, allowing about six square feet of floor space for each hen. The pen should be cleaned out every week, and the roosts given a coat of coal oil. The course of feeding varied little from Mr. Dilworth's plan. The morning soft feed should not be sloppy, neither should the hens be allowed to gorge themselves. It is good practice to hang a cabbage up by the roots at such a height as the hens can reach by jumping for it, which will furnish splendid exercise. If cabbage cannot be had, turnips or mangels cut in two make splendid substitutes, and are much relished. They should have a feed of raw meat two or three times a week. Well-cured clover, cut finely and mixed with the soft feed, has good properties. An egg is largely made up of nitrogen, phosphoric acid and lime, all of which must be supplied in the feed; therefore, the necessity of feeding meat and bone, which are largely made up of the above elements Many farmers have wind or horse-powers, which can be used to drive the bone-mill, which may be used once a week in cool weather. Grit must be supplied at all times. In cold weather the water should have the chill taken off it, and after the hens have all had sufficient the water vessel should be emptied. Mr. Duff has learned from many Toronto wholesale egg dealers that it is almost impossible to obtain fresh eggs that can be relied upon. They nearly all expressed themselves as being willing to pay advanced prices for eggs that could be safely recommended. Bad packing, too, is the cause of many lost eggs. It is estimated that eggs cost half a cent each to produce; now these can be sold, if guaranteed right, for 13 cents per dozen the year round. They can be expressed to a city market for 1 1-5 cents per dozen, which leaves 11 4-5 cents per dozen for the eggs. This price shows a clear profit of $1.50 per hen per annum. These profits are based on wholesale figures, which can be greatly increased if private customers are supplied.

A Good Word for Ontario Province.—Mr. C. C. James, Deputy Minister of Agriculture, gave an admirable address on the agricultural resources and capabilities of Ontario, which has a climate and conditions suitable to grow any and every line of products, except those strictly tropical. The southern point of Ontario, situated on Lake Erie, is in the same latitude as Chicago, Boston, and Naples in Italy, and being almost surrounded by water, namely, River St. Lawrence, the chain of great lakes, Lake of the Woods, Georgian and James' Bays, and the Ottawa River, the climate is temperate. Our fruit products are second to none in the world; our stock leads in all great contests. We have a class of farmers, many of whom came here from the Old Land well versed in stock raising. We have stocked much of the Western States and the Northwest, and will continue to be looked to for the best. Our conditions for dairying are of the highest order, and are not neglected, which has been shown in the greatest contests of the world. In poultry, we lead every time we meet the fowls of other countries. The show just closed at New Hamburg had more high-scoring birds than any other country can produce. Now, just here we have a monster industry in its infancy. The hen has been looked upon as a small, insignificant animal; but this is the class of stock that has kept many Ontario farmers floating along through the hard times. We may well take a lesson from France just here. We have 130,000 farms in Ontario, averaging 130 acres each. The farms of France are not quarter the size, still their owners are in much better circumstances than our tillers of the soil. The secret lies in the fact that the small things are not neglected, but pushed to their utmost capacity.

How to Make Hens Pay.—Mr. A. G. Gilbert, poultry manager of the Dominion Farm, made many good points in the course of his highly appreciated address. A good hen properly cared for will lay at least 100 eggs per year, worth at least one dollar. She will raise at least ten chickens, worth at least one dollar. She is worth on the market at the end of the year, at least twenty-five cents. She can be properly fed for one dollar, which leaves a margin of $1.25 profit. Now, if every farmer in the Province kept a reasonable flock, and made $1 25 on each hen for his trouble, see the revenue that would result. This could easily be done by all. There is a great gulf fixed between the feeding of the hen and picking up the egg. This gulf is science. The hen in her natural state just laid enough eggs to propagate her species, and all that she can be made to do above that requires science to develop; therefore the need of knowledge in caring for the flock. We must exercise wisdom and judgment to supply the demands of a paying market. Old hens should not be kept; her life should terminate at the end of two and a-half years. Mr. Gilbert referred to the improvement that has been made in the cow during the last twenty-five years. She has been made to produce double her former returns by careful training and care. Now, the hen is capable of as much or more improvement. The present demand for freshly-laid eggs in Ottawa and Montreal is enormous; the price offered is about forty-five cents per dozen, and not half enough can be supplied at that price. The difficulty of procuring reliable eggs in July and August has already been touched upon. As an instance, Mr. Gilbert referred to eggs his wife had bought on the market at twelve cents per doz., half of which were bad, some of them half-hatched, etc. This made the price twenty four cents per dozen. This is the testimony of almost all who depend on the market for their supply of fresh eggs.

Port Hope was selected to hold the show next year.

Election of Officers.—The following officers were elected:—President, H. White, Port Hope; First Vice-President, Wm. McNeil, London; Second Vice-President, G. S. Oldrieve, Kingston; Treasurer, Geo. G. McCormick, London; Secretary, Thos. A. Browne, London; Delegates to Industrial Exhibition, J. Dilworth and W. Barber, Toronto; Delegates to Western Fair, J. H. Saunders and G. G. McCormick, London; Directors, Thos. A. Duff, Toronto; S. W. Clemo, Galt; John Crowe, Guelph; John Cole, Hamilton; W. C. Trew, Lindsay; W. T. Gibbard, Napanee; D. Rice, Whitby; A. Bogue, London; C. Massie, Port Hope.

Preparatory Hints for the Hatching Season.

BY IDA E. TILSON.

Everybody has something to be thankful for. Even the turkeys can rejoice that the holiday feasts they give their lives to grace come but once a year. Though my pullets' smooth, glossy, tailor-like suits are so satisfactory, and their tender flesh and numerous eggs so profitable, I am glad raising brand new chickens comes but once a year, because the business needs a person strong enough to stand all weathers and to work an hour any time when already tired. I intend eventually trying an incubator as a means of mental discipline.

In the November ADVOCATE, W. E. Harding's points are well taken, that, at his latitude, Amherst, Nova Scotia, 45½ degrees, as I make it, late chickens rear easier, and trouble gardens less. The farmer who raises fowls for comfort, eats his surplus cockerels and perhaps all his eggs, and keeps his hens two or three years, might as well consult his own convenience instead of the market. I, myself, in consideration of my own northern latitude, almost 44 degrees, have moved my time of hatching chicks from the last of March to the last of April. But the hen-house has more spare nests for early than for later set hens, and partitions and separate sitting rooms are expensive. Chickens late about their first moult will, the next autumn of their lives, usually be correspondingly behind, and may thus get caught a second time unready for cold weather and winter laying. We often hear dining-car waiters call out, "Don't miss the last chance for breakfast," so, poulterers, don't miss the last chance of good prices. Though the people sometimes make mistakes, figures, as a rule, tell the truth. Last year my first lot of chickens, sold July 1st, at an average age of nine weeks and one day, averaged 2¼ lbs., which, at 12½ cents per pound, equaled 28 cents. I might have sold all thus, were it not difficult to wisely select breeding stock before there is some maturity and some plain prophecy of future style and condition. Just three weeks later I culled again, then average weight, 3½ lbs., at 8 cents per pound, equaled 28 cents. Though size increased, price lowered so much that my three weeks' feeding was lost. My final culling was at 21 weeks of age, when an average of 5½ lbs., at six cents, equaled 33 cents. I should not, as promising speculations, keep a hearty chicken twelve weeks to gain five cents, nor raise late chicks for low prices, because P. H. Jacobs, who is evidently about correct, rates the cost of chicken and hen flesh respectively at four and five cents per pound. However, one Minnesota woman, with large range, thought one cent per pound covered her outlay. Here I am encouraging the cold Minnesotans by telling them Canada took more prizes at the World's Fair, in proportion to her number of fowls there, than our United States did, and that at last census Maine had more domestic fowls than any other New England State. Now is the time for looking over our hens and carefully deciding which are not to be set, but to be early sold, thus bringing high prices themselves and making room for our prospective chicks. Cull early, fast and often throughout the season. A thorough acquaintance with our flocks, and gained as we have opportunity, will save future mistakes, like those an amateur made who brought a trio to our Fair, two of the three plainly being roosters. Though their shanks looked old, rough and scaly, she thought the birds were hatched in June, and said they had not laid much yet. To further my acquaintance, I have invested in and like a marker. Within a spiral spring is a bar coming down on a tiny platform, and has a little rotary movement, so it cuts besides punches. The small circles it takes out of webs between toes can be so variously placed and arranged as to indicate almost any age or particular desired. In marking, one can hold the fowl's foot, well spread out, on a table, shelf, barrel head, or something solid, while another person slips web into the marker, then presses down quickly and firmly, and, lo! the deed is done without a single grunt from the victim. Whenever, and for whatever cause, there is much squawking, it shows those hens are not tame enough, and their catcher has something yet to learn about handling fowls.

The subject of feet and legs reminds me that one great objection against the feathered-legged breeds has been their proneness to scaly legs. The owner of a Buff Cochin flock lately visited never allows an affected fowl to get into that flock, hence has no subsequent battles. Years ago she had some experience, and wrought cures by rubbing kerosene on with her finger, not dipping their legs in at all. This disease mostly affects those grown old, when shanks are less oily, which fact suggests sweet oil, or a soothing grease like it, as a natural remedy. Last fall, having a fine young Cochin given me, the mother hen of which actually died that very day from aggravated scaly, sore legs, I resolved, so my poultry should run no risk of infection, to wet that young bird's extremities well with sweet oil, but found my supply of the latter gone. I saw some hen's oil we had tried out, concluded its use would be the very essence of the Homeopathic principle, "like cures like," and used it on her and others since with perfect success. Never set a scaly-legged nor roupy hen, neither one affected with bowel complaint, nor any skin disease, as all these are slightly contagious. Sitting in cold weather is not play, hence choose fat, hearty, but not unwield cluckers for this hard job. Be sure, by some cheap, movable doors, to screen their nests from intruding layers, else you may have the experience of "Bill Nye," who says he had a hen sitting on a door-knob while all the other biddies laid to her, so she turned out a chick a day for him to father, until he had 83 of them bringing up on the bottle, and the hen became a hopeless maniac. Poor hatches also come from in-bred fowls, from those lacking the natural conditions of exercise and green food during winter, from eggs too roughly handled, or put into a cold, poorly-shaped nest, instead of in one already warmed and packed.

VETERINARY.

The Ontario Veterinary Association.

The annual meeting of this Association was held in the Veterinary College, Toronto, on Friday, Dec. 21st, 1894, the President, Mr. W. Burns, V. S., in the chair. The Secretary's, Registrar's and Auditor's reports were received and adopted.

Considerable discussion ensued on the action of certain parties in issuing so-called Veterinary Dental Diplomas, which was very strongly condemned at the last meeting, tending as it does to bring legitimate veterinary science into disrepute. Reputable members of the profession consider this so-called Veterinary Dentistry a complete humbug. Mr. John Wende, V. S., of the New York State Veterinary Association, remarked that that Association also very strongly condemned the issuing of these Veterinary Dental Diplomas. Major Lloyd, Mr. Gibb, Mr. C. Elliott, Mr. O'Neil and others took part in the discussion, and it was ultimately resolved that the same committee that were appointed last year should be continued, and that their efforts should be directed to arrest this humbug.

Mr. W. J. Wilson, V. S., of London, read an excellent paper on the dangers of using the meat and milk of diseased animals as human food. He recommended the establishment of public abattoirs, and the inspection of meat by qualified men; also, that dairies should be placed under suitable inspection, and that the hygienic conditions of milch cows should be looked to, cleanliness and sufficient air space being essential.

In the discussion that followed, in which Major Lloyd, Messrs. Shaw, Cowan and others took part, it was remarked that the "tuberculin test" was a reliable diagnostic agent, but judgment must be used in applying it; that it is well to take the body temperature of other animals in the herd not injected, as variations in the temperature may be produced by accidental causes.

Mr. Cowan, Veterinary Inspector, said that it was well not to make unnecessary alarm in connection with tuberculosis; that the disease existed only to a slight extent in Canada amongst cattle—less than in most other countries—and that the disease was on the decrease here. He also said that the various boards of health have ample powers in dealing with the milk and meat supply, and in condemning tubercular cases.

Mr. A. Crowforth, V. S, of Lockport, N. Y., U. S., read a paper on "Tuberculosis in relation to animal industry and public health, its prevalence and importance." He said that it prevails so extensively throughout the civilized world that no disease is more deserving of close study, or of the enforcement of effective measures for its suppression. Cholera, yellow fever and small-pox, which occasionally appear, creating universal terror and dismay, claim but few victims in comparison with this malady. These other plagues are quick, severe and fatal, and therefore can be promptly recognized and even stamped out, whereas tuberculosis is slow and uncertain in its progress, and often escapes recognition for a long time. He mentioned its prevalence as the same disease in the domestic animals, produced by the same micro-organism (the bacillus tuberculosus), and the difficulty of obtaining reliable statistics. In the middle ages, tuberculosis in animals was recognized as contagious, and laws were made against the use of affected carcasses as human food, which remain in force in Spain and Italy to the present day. Candid scientific observers now accept the doctrine of its contagious character. He described the germ, its history and mode of propagation, and also the accessory causes which tend to produce the disease. But none of these causes can produce the disease in the absence of the bacillus.

Prof. Smith exhibited from the museum of the Veterinary College specimens of "gangrenous ergotism" of the legs of cattle—from cases he had investigated last spring.

The sum of $25.00 was appropriated for a medal to be competed for by students of the Ontario Veterinary College at the approaching spring examinations.

The following are the officers for the ensuing year:—President, G. L. Robson; 1st Vice-President, H. Hopkins; 2nd Vice-President, D. Hamilton; Secretary, C. H. Sweetapple; Treasurer, W. Cowan; Auditors, Messrs. J. D. O'Neil and C. Elliott; Directors, Messrs. J. Wende, W. Burns, J. F. Quin, W. Gibb, W. J. Wilson, T. Holder, A. Crowforth and W. Steel.

Lullaby.

O hush thee, my baby, and close thy bright eyes,
And gaze not at mother with wondering surprise.
The sun now is sinking far down in the west,
And all the dear children are taking their rest;
The bees and the birds are now quiet and still,
And each little flower that blooms on the hill
Is sleeping, to wake when the sun brightly beams;
So enter now, darling, the land of sweet dreams.

O hush thee, dear baby, the moon rises high,
And studded with stars is the beautiful sky.
The soft breeze all gently wafts in at the door,
And tells that the duties of daytime are o'er.
Now, sweet one, I'll leave thee,—for quiet art thou,
Contentment lies peacefully on thy pure brow,—
To the care of the Heavenly Father above,
Who blesses the little ones all with His love.

—*Miss A. Stetson in Good Housekeeping.*

PRIZE STORY *(Original).*

JACK.

BY ION G. WARNER, ELGINFIELD, ONT.

It was New Year's Eve, but how different everything looked in the little Californian town at this festive season to the eyes of one coming fresh from the cold winter of New York. I had been sent out to oversee the laying of a new line of railway over the mountains, and as the work promised to be one full of reverses and difficulty, I naturally felt somewhat proud of the confidence the heads of the great engineering firm to which I belonged had placed in me. It was growing dusk when the train steamed into the little station of Mud Creek. I was the only passenger to alight, and leaving my luggage in the station, I made my way to the only hotel the town boasted. After a hearty tea, the landlord—who, by the way, was one of the most hospitable men it has ever been my good fortune to meet—invited me into his own private parlor to enjoy a smoke and a chat.

"Take a chair and make yourself at home," he said.

I was just about to seat myself in a comfortable-looking chair when he stopped me.

"No, no! Not that chair; that's Jack's. It is only a whim of mine, but I can't bear to have anyone sit in that chair since Jack left. Sit down here, sir, and I'll tell you the story. 'Twas away back when the big rush to the gold diggings started that I first met the boy. He was fresh from the Old Country, and as I found out afterwards, fresh from college. He belonged to a good family—with a title, I heard—but being of a roving nature, and having caught the gold fever, he struck off out here. We had camped two or three miles up the valley from here, and he walked into camp one day about dinner time. I saw the lad was a stranger, and a green'un at that, so I went up to him and asked him was he looking for work? He said he was. And as I liked his looks, I offered there and then to take him on as pardner. He jumped at the offer, and off we went down to my shanty for dinner. He was soft at the work at first, but dead grit, and pretty soon could shovel as much dirt as the best of them. We had fairly good luck for some months; and then Jack met his fate. 'Twas down in the store one day, and Jack had gone down to get some flour, when in came the daughter of a rancher who lived down at the Creek. Jack was struck with her looks, though she was no great beauty; but there was something pretty and fetching about her ways, and the lad never rested till he got some one to introduce him to her. From that time it was all over with him, though he kept steady at his work; but instead of staying home at night like he used to do, he was off to see his girl. It went on nicely for about two years, and he seemed to be making pretty fair running, and the mine was panning out to beat all our expectations, when the crisis came. He went down to see the girl one night, proposed to her, and she refused him—said she liked him well enough as a friend, but not well enough to marry, or some such rubbish as that. Well, the boy came home that night, 'twas early for him, and he had a kind of dazed look, as if some one had struck him in the face. He never said a word, sat down by the table, laid his arms on it, bowed his head and sat there. I felt for the lad, for I suspected what was up; but how to comfort him I did not know. I ain't much used to making soft speeches, sir, and I was afraid I might hurt him worse. After a while I went over to him and laid my hand on his shoulder. 'Jack, lad,' I said, 'you're in trouble, boy; speak out and tell your pard, and if there's anything he can do, he'll do it.' He raised his head, and if you'll believe me, sir, I never want to see such a look on a man's face again; the agony in that boy's look might have touched a stone; it seemed as if his very soul was being torn.

"'Thank you, Bill,' says he, 'you can do nothing.'

"'Is it the girl, Jack?'

"'Yes, Bill; she's gone back on me. Leave me, Bill; I feel as if I were going mad. Leave me alone for a while; I'll feel better after a bit. Let me think it over alone, pard.'

"I saw 'twould be better, so I left the lad and went to bed. In the morning, I noticed all his little traps packed.

"'Jack,' I says, 'surely you're never going to leave the place for the whim of a girl who ain't good enough for you?'

"'Aye, Bill, 'tis best. I'm sorry to leave you, you've been a good friend to me, Bill; but I couldn't stay around here any longer. couldn't bear to see her face, Bill, after last night.'

"I tried to argue with him, but I saw it was no use, and I had to let him go. He went off up country. The place didn't seem the same after Jack left, and I sold out my claim and bought this place, the town was just springing up then. When I left the camp I took Jack's chair with me; 'twould look like old times, I thought, and I imagined I could see the lad's face every time I looked at it. I placed it there; it's ready for him, whenever he comes to see his old pardner. He came several times to see me in the next two or three years, he seemed to be restless and couldn't stay away long from the old place. He had struck it rich, though, and was making money hand over fist, but he never went near the girl that had jilted him, though every Sunday he would go down to the church she went to and look at her with a longing you couldn't help but pity. Then off he'd go early in the morning without ever speaking to her. He came and went like this for something over five years, and he was here for the last time. It was on New Year's Eve, he came in haggard and tired looking. I tried to [illegible] but his spirits [illegible] see, were pretty low. He [illegible] any supper, and then he said, all of a

[illegible] Bill, to ask her once more. I'm [illegible] more. I heard her say, if she [illegible] me, she'd [illegible] and I guess I can [illegible] or if I [illegible] somehow was.' But I couldn't [illegible] do you think she'll leave me [illegible] to get to [illegible] and see if she will say a word.

"'What is it, pardner; why don't you speak? Why do you only stand and look at me? Out with it. What is it?'

"'Jack, lad,' I said, as well as I could, 'I'm afeared you're too late; she's going to be married.' I feared an outburst, but he said, quite calmly:

"'To whom?'

"'Some city fellow,' I said. 'I dont know who he is, only that he comes in here and drinks a good deal.'

"'Curse him! curse him, Bill! She's too good for any man that drinks. He shall never marry her. I swear it; by heaven, I swear it.'

"He picked up his hat and rushed out of the house, and was gone before I could stop him. What followed, I found out afterwards through his ravings; for when he was brought in here again, his brain had given way. He had walked out to the house where she lived, just outside the town, and looking in at the window, there he saw her and (with his arm round her) the fellow she was going to marry. How long he stood there gazing at them, I don't know; but the devil got in the boy, and he pulled out his shooter, with murder ringing in his brain. He took aim at the girl, but he never fired, for just then the clock struck midnight and the bells of the old church pealed out: "Peace on earth, good will to men;" it was the morning of the New Year. Jack dropped his gun and turned away; he couldn't do it. The sound of the chimes brought back visions of parents and home; he couldn't stain their name with murder. Some of the boys brought him in in the early morning. They were coming home from a dance, up country, and found him wandering about on the road, dazed like. We put him to bed and sent for the doctor. 'Brain fever,' he said when he looked at him. 'No, he'll hardly live,' in answer to my question whether he'd get better or not. All day and night he raved about the girl, calling for her all the time. I sent down and told her the state he was in, and said if she cared to see him alive, to come at once. She came, but he didn't know her, or, for that matter, anybody else. She stayed right by his bed, gave him his medicine and kept ice on his forehead. There she learned the fulness of the love she had spurned; for in his ravings she read his very soul. After a while he became conscious, and the look he gave her spoke better than words of the love he had borne for years.

"'It's too late now, Olive, to tell you,' he said; 'I'm going; but oh! how I loved you. I planned and worked and thought for years for you; my whole being was wound up in you. You didn't understand my nature; but it's too late now. May you be happy; God bless you, dear.'

"He closed his eyes, and we thought he was gone; but after a while he opened them and looked at her. Such a look!—full of love. His soul seemed to be speaking in that look. He tried to speak again, but was not able. She put her arm round him and raised him a little, and quietly he passed away—his head resting on her breast—the best-hearted fellow that ever lived."

"Did she marry the other fellow?"

"No, sir; she found out that he was given to drinking, and discovered, too late, that she had loved Jack as something more than a friend. If you walk out to the cemetery to-morrow afternoon you may see her; she decorates poor Jack's grave every New Year's day; but for the matter of that, she always keeps it pretty, but more so on that day. No, she never married; and I don't think she ever will. The memory of Jack's great love is still too fresh. Now, sir, that's the reason I don't care to see another seated in Jack's chair; it may be foolish, but I can't help it. You see, this is the anniversary of the last night my pardner came back, and his empty chair brings the thing back to memory; that's why I have that little black bow on the chair—kind of mourning like, 'cause it's Jack's, sir."

The Cry for Rest.

REST SLEEP.

In the tropics, where no labor is required of men, the night is scarcely divided from the day; but in temperate climes, where man's working powers are in the highest state of activity, the night nearly halves the day,—at the season of intensest activity it does halve it,—God lights His candle late and puts it out early. All the remainder of the time is for rest. Then labor naturally stops; office and shop are shut; machinery is still. The decree goes forth that the places of business shall be deserted. Then comes sleep the long sleep, knitting up the ravelled sleeve of care; pouring balm into hurt minds; immersing Nature in her bath of oblivion; untying the knots of the brain; sifting and disentangling the thoughts; carrying sufferers away into the land of dreams, and bearing the weepers off among their loved and lost ones. Sleep, answering questions that could be answered in the day-time; putting to rest doubts that had made the mid-day wretched; keeping all low cares and tribulations in their place, and calling out the imagination which revives and transports the mind.

MURDERING SLEEP.

But we murder sleep. We turn its darkness into day; its silence into revelry; its peace into pain. Fashion murders sleep; pleasure murders it; yes, and work murders it. In the days of youth, when we might cultivate the habit of long, still, deep sleep, we scorn its heavenly privilege, and throw its divine opportunity away; and then in middle age too many of us cannot sleep. We are nervous and restless; and God's great, immeasurable night is all in vain for us. We wake exhausted; the night's fever spoils our day. We stumble and bungle in all we do. That is a touching story in the Gospel which tells how Christ was asleep in the fishing-boat when the storm came up, and shipwreck seemed inevitable. His companions, who had been watching their nets all night, were nerveless, and had lost command of the vessel. He wakes from slumber, rebukes the winds and seas, and there is a great calm. The good sleeeper goes safely over life's turbulent sea. He rules the storm, for he has rested. He is Himself. We should cultivate sleep while we can. Woe be unto us if we do not. In sleeplessness is utter weakness; there may be madness in it at last. Get all you can of it; it is God's daily boon of rest to the workers.

Mrs. Slimdiet "So your ancestors came over with William Penn. By the way, have some more dressing with your turkey. Well, as I was going to remark, I think pride of ancestry very justifiable. Now, I came over in the Mayflower." Thin Boarder (struggling with a drum stick) "Did you bring this turkey with you?"

THE QUIET HOUR.

Vineyard Laborers.

Toiling among the vines one day,
In the Master's vineyard sweet,
I saw my sister bow her head
'Neath the burden and the heat.
She was not weary of working,
For she loved the Master well;
And she thought of the blessed hour
When the shades of evening fell.
She portioned a task out bravely,
And thought, "He would have it so;"
Then the Master stood beside her,
And his voice was soft and low:
"I have not need of thee to-day,
In the vineyard so fair and sweet;"
And she whisper'd low, "My Master—
Let Him do what seemeth meet."
But her heart was sad and heavy,
As she left her work that day;
She knew not where she was going,
Or aught of that untried way.
He led her forth to the desert,
And He spoke to her of rest;
Then she smiled and whisper'd gladly:
"O Master, Thy way is best."
The burning blast of the desert
Made her quiver and start with pain;
She looked in His face for comfort,
Nor shrank from the dreary plain.
I watch for my sister sadly,—
Will she come again to me?
He hath said that where He dwelleth
There shall His servant be.
Perhaps He will bring her, rested,
And meet for some higher toil,
To work once more in the vineyard,
Or reap the fruit of the soil.
But perhaps He will lead her onward
To His glory and His rest;
I know she will smile and whisper,—
"Master, Thy way is best!"

—*B. C.*

Rests.

God sends a time of forced leisure—sickness, disappointed plans, frustrated efforts—and makes a sudden pause in the choral hymn of our lives, and we lament that our voices must be silent, and our parts missing in the music which ever goes up to the ear of the Creator.

How does the musician read the *rest!* See him beat the time with unvarying count, and catch up the next note true and steady, as if no breaking place had come between.

Not without design does God write the music of our lives. Be it ours to learn the tune, and not to be dismayed at the *rests*. They are not to be slurred over, not to be omitted, not to destroy the melody, not to change the key-note. If we look up, God Himself will beat the time for us.

With the eye on Him, we should strike the next note full and clear. If we say sadly to ourselves, "There is no music in a rest," let us not forget that there is the "making of music" in it. The making of music is often a slow and painful process in this life. How patiently God works to teach us! How long he waits for us to learn the lesson!—[Ruskin.

Little Things.

I asked the Lord to let me do
Some mighty work for Him;
To fight amidst His battle host,
Then sing the victor's hymn.
I longed my ardent love to show,
But Jesus would not have it so.

He placed me in a quiet home,
Where life was calm and still,
And gave me little things to do,
My daily round to fill.
I could not think it good to be
Just put aside so silently.

Small duties gathered round my way:
They seemed of earth alone:
I, who had longed for conquests bright,
To lay before His Throne,
Had common things to do and bear,
To watch and strive with daily care.

So then I thought my prayer unheard,
And asked the Lord once more,
That He would give me work for Him,
And open wide the door;
Forgetting that my Master knew
Just what was best for me to do.

Then quietly the answer came:
"My child, I hear thy cry;
Think not that mighty deeds alone
Will bring thee victory;
Thy life-work has been planned by Me,
Let daily life thy conquests see."

—*E. A. Godwin.*

God's presence is enough for toil and enough for rest. If He journey with us by the way, He will abide with us when nightfall comes; and His companionship will be sufficient for direction on the road, and for solace and safety in the evening camp. [Maclaren.

There are days in our lives when our hearts seemed filled
With utter confusion and pain,
And into the darkness of heavy hearts
Comes nought but the fall of rain;
And the web of our lives stretches onward
In the tangled mass of threads;
And our God has forgotten and stoops not toward
The sad and bowed down heads
Of His children helplessly calling, calling.

Hush! did I say forgotten
Does the Father ever forget?
The web of our lives shall stretch onward
In perfect beauty, while yet
Sweet Faith keeps her foot on the treadle,
And Hope lifts her beautiful eyes;
For God's finger smooths out the tangles,
And lo! aloft in the skies,
Is the sun still cheerily shining, shining.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES,—I would like to have a chat with the mothers this time, so you young girls need not listen unless you wish; but at any rate it can do you no harm, for the time will come to most of you when you may put my little preaching into practice.

"Girls, confide in your mother," is an advice often given, but not frequently enough acted upon. When children are very young they instinctively turn to their mothers with every tale of pleasure or grief; and why is it that as they grow older this confidence diminishes? I think the fault lies chiefly in the fact that most mothers do not respond fully enough to these confidential outpourings of the childish joys and sorrows. And some mothers even think it wise to conceal much of their love from their children, and demonstrations of affection are often met with "Oh! don't be so foolish," or a similar remark, and a tender heart is wounded, and it may be long ere that sweet foolishness (so dear, despite all, to the mother heart) is repeated. Again, a lively school-girl comes bounding in, with face aglow, to tell mother what a "glorious time" she has had, or of the expected holiday, and hears in answer, a sigh, and "Run away, Jessie, I have no time to talk or listen to you at present," and after a few such rebuffs, though not ill-meant, Jessie soon ceases to look to that quarter for sympathy, which is the greatest key to confidence. Then, when girls are almost grown up, if parents would allow them to entertain their friends occasionally, we would hear less often the remark that some parents make: "My family is never happy unless away from home." Small marvel, I think, for those parents, having left the sunny days of their youth (if, indeed, such a time ever existed) so far behind them, now consider all modern amusements vanities, and those who desire to join in them, frivolous. What surprises me is that there is enough of the warmth of youth left in those children to desire pleasure, after living in such a chilling atmosphere. Unfortunately this picture is not overdrawn, although it may appear so.

But on the other hand, I know of more than one home worthy of the name they are, too where the daughters, big and small, discuss the events of the day with their mother, just as freely as with a companion, and she not only feels interested, but lets them know that she is so. And in those homes the young people's guests are as welcome and as considerately treated as those of the parents; and I feel confident that there will be no clandestine meetings with objectionable company in those cases, nor will those girls be burdened with the desire to leave home that invariably follows the former treatment.

Allow, then, your families to have as much home amusement as you can afford (youth, if not warped by adverse bearings, demands it), for if you do not, they will go elsewhere to seek it.

Of course, mothers, you love your children, and mean to do your best for their welfare, but do not let a false idea of what is best render their home lives uncongenial; do not let your love go to waste by keeping it pent up in your own hearts. Rather let it flow forth unreservedly, to meet the flood of affection which will surely reward it; and do this not only in early years, but as long as your family is near you, and you will have the happiness, in later life, of finding that, although now men and women, your children are, to you, children still, and that they will turn to you for advice and comfort as trustingly as ever. And the fond memories of such a love-lighted home will cast forward their bright rays, and dispel from your dear ones many of the dark shadows that fall to the lot of all.

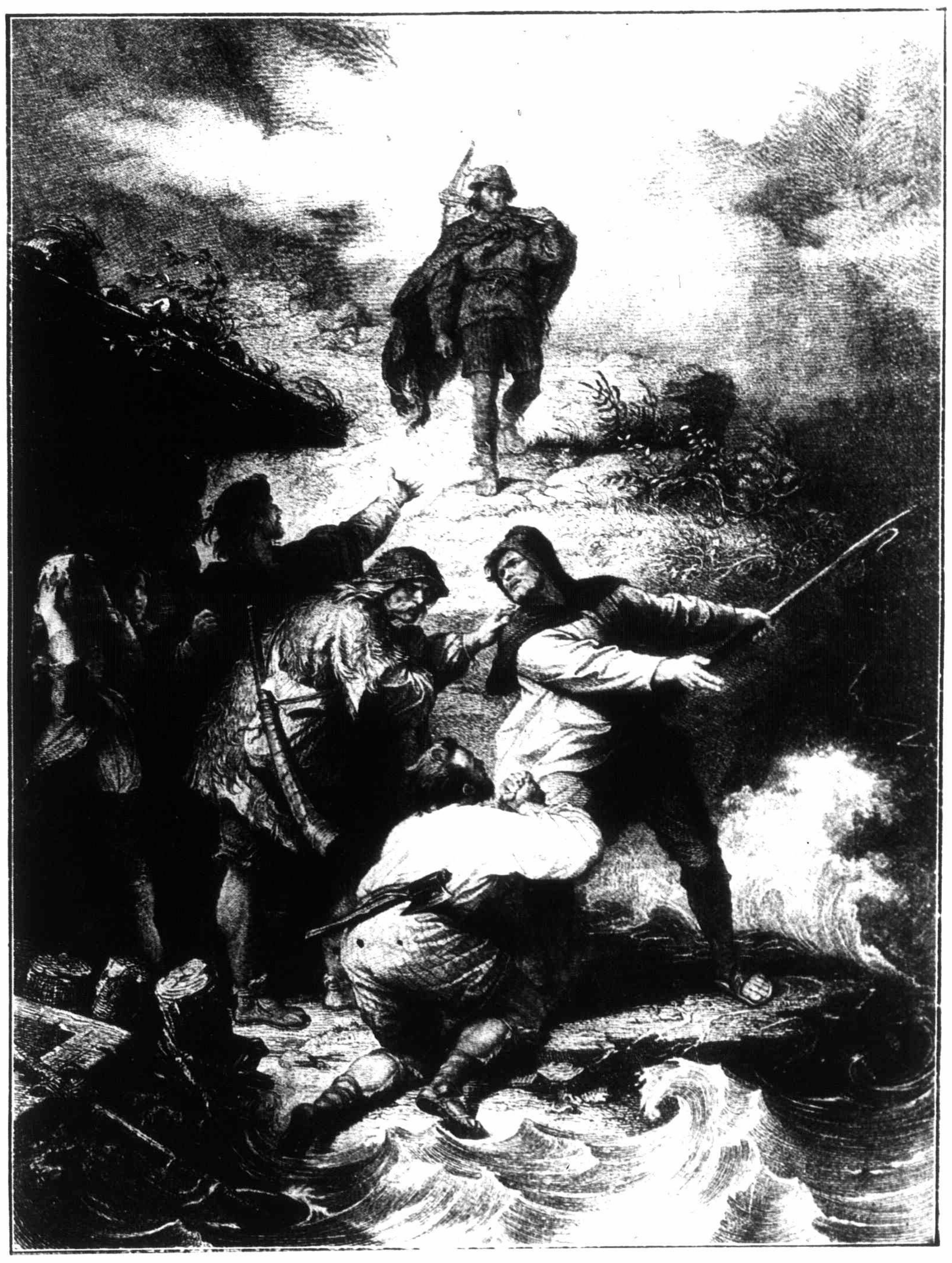
MINNIE MAY.

Child Philosophy.

A few days ago I was told of a touchingly pretty remark made by a little girl of four years. It is, I think, worth recording. Her father was walking with the child through the village cemetery, when, pointing to the graves, she asked, wonderingly: "What are these for?" Her father, somewhat puzzled what to say, answered: "They belong to the people who have gone to heaven." "To the angels?" "Yes." "Ah!" commented the little [illegible], "*that is where they have left their clothes.*"

"William Tell Saves Baumgarten."

The story of William Tell, the patriotic hero of Switzerland, like too many of the delightfully detailed historical narratives that were received with unquestioning faith by our grandfathers, has not escaped the remorseless hands and searching scalpel of modern criticism, till but a bare skeleton of presumptive facts is left for the imagination of the poet and the artist to work upon; but still, when the circumstantial details of these old histories are not inconsistent with the possibilities of human nature, we cannot cease to review with pleasure and profit such as illustrate the better side of humanity. The story of Tell, in brief, according to that version which has found the widest currency, is as follows: In the beginning of the Fourteenth Century, Albert I. of Austria was striving to annex the three Waldstatter—Uri, Schwytz, and Unterwalden,—to his family estates. Herman Gessler, his bailiff, lived at the Castle of Kussnacht, and perpetrated on the people of the district the most atrocious cruelties. A league was formed of the principal men of the Waldstatter, to resist the Austrian pretensions, and to it belonged Walter Furst, and William Tell, his son-in-law. Various stories are related of the exploits of Tell.



"WILLIAM TELL SAVES BAUMGARTEN."

One of these forms the subject of our illustration, a reproduction of one of the best examples of the great German painter, Kuebach. It is connected with the rescue of Baumgarten, a citizen of Unterwalden, from the pursuit of the Austrian troopers, as related in Schiller's well-known drama. Baumgarten had killed Wolfshot, one of the tyrannical appointees of Gessler, for an assault upon his wife. The deed gets wind, and Baumgarten, flying for his life, reaches the shores of Lake Lucerne just as a fierce storm approaches. He in vain, though seconded by the surrounding country-people, beseeches the ferryman to take him over. Ruodi, the ferryman, declares it impossible, and seeing Tell approaching at the critical moment, appeals to him in the words of Schiller:

Ruodi.
Well, there is Tell [illegible] can steer as well as I.
He'll be my judge if it be possible.
Am I to plunge into the jaws of Hell?
I should be mad to dare the desperate act.

Tell.
The brave man thinks upon himself the last.
Put trust in God, and help him in his need.

Ruodi.
Safe in the port, 'tis easy to advise.
There is the boat [illegible]

[illegible] may pity, but the Viceroy will not.
Come! Venture, man!

Shepherd and Huntsman.
O, save him! Save him! Save him!

Ruodi.
Though 'twere my brother, or my darling child,
I would not go. 'Tis St. [illegible]'s day.
The lake is up, and calling [illegible] victim!

Tell.
Nought's to be done with idle talk.
Time presses on—the man must be [illegible]
Say, boatman, will you [illegible]?

Ruodi.
No; not I.

Tell.
In God's name, then, give me the boat! I will.

Herdsman.
Ha, noble Tell!

Huntsman.
That's like a gallant huntsman!

Baumgarten.
You are my angel, my preserver, Tell!

Tell.
I may preserve you from the Viceroy's power;
But from the tempest's rage another must.
Yet you had better fall into God's hands
Than into those of men. [*To the Herdsman.*]
Herdsman, do thou
Console my wife, should aught of ill befall me.
I do but what I may not leave undone.
[*He leaps into the boat.*]

They push off just as a troop of horsemen appear, and ultimately escape.

In the picture, Tell appears in the background, with the historical cross-bow upon his shoulder; while Baumgarten kneels in the foreground (appealing to the boatman, Ruodi), in his girdle is the axe with which he had killed Wolfshot.

Johnny: "And are the angels always well and don't get cross at all?" Mamma: "Yes, Johnny." Johnny: "An' they never fight nor do anything wrong?" Mamma: "No," Johnny: "An' they always have the same kind of weather, do they?" Mamma: "Yes." Johnny, after a moment's pause: "Then what do the angels talk about, mamma, when they go to call on each other?"

The character of the old Illinois courts, in which Abraham Lincoln practiced, was very primitive. In one case a livery-stable horse had died soon after being returned, and the person who had hired it was sued for damages. The question turned largely upon the reputation of the defendant as a hard rider. A witness was called a long, lank Westerner. "How does Mr. So-and-so usually ride?" asked the lawyer. Without a gleam of intelligence, the witness replied, "A straddle, sir." "No, no," said the lawyer; "I mean, does he usually walk or trot or gallop?" "Wal," said the witness, apparently searching in the depths of his memory for facts, "when he rides a walkin' horse, he walks; when he rides a trottin' horse, he trots; and when he rides a gallopin' horse, he gallops; when [illegible]" The lawyer was angry. "I want to know what gait the defendant usually takes fast or slow." "Wal," said the witness, "when his company rides fast, he rides fast; and when his company rides slow, he rides slow." "I want to know, sir," the lawyer said, very much exasperated and very stern now, "how Mr. So-and so rides when he is alone." "Wal," said the witness, more slowly and meditatively than ever, "when he was alone, I wa'n't along, and I don't know."

Short Stories of Scotch Humor.

A good-natured member of the fraternity used to encourage young preachers, when he saw them at all flurried, by kindly tapping their shoulders, with the encouraging words: "Gang awa up, my young man, and you will overcome your feelings. When I at first took up the Bible I was very nervous, but now I feel nowise agitated in the service."

Will Hamilton, the half-wit of Ayr, was hanging about the vicinity of a loch, which was partially frozen. Three young misses were deliberating as to whether they should venture upon the lake's surface, when one of them suggested that Will should be asked to walk on it first. The proposal was made to him. "Though I am daft, I'm no ill bred," quickly responded Will. "After you, leddies."

Till lately, a discharged recruit at Stirling, who laboured under the monomania that he had received a charge of the public walks in that burgh, called weekly at the office of [illegible] journals to report that [illegible] "Why dinna ye get marr[illegible] [illegible] wife, of the parish [illegible] was the reply, [illegible]

Recipes.

DOUGHNUTS.

One egg, one cup of sugar, one cup of milk, a lump of lard the size of an egg, two teaspoonfuls of baking powder, a little salt and cinnamon ; flour to roll, and fry in boiling lard.

CORN-BREAD.

Two cups cornmeal, one cup flour, one cup each of sour and sweet milk, a teaspoonful each of salt and soda, one egg, one-half cup sugar, one-half cup molasses, and a tablespoonful of butter. Mix quickly and bake.

CREAM-PUFFS.

One cup water, one-half cup butter ; boil together; when boiling, stir in one cup of flour. When almost cold, stir in three unbeaten eggs, drop on buttered tins, and bake twenty-five minutes. Partly open when cooked, and fill with flavored whipped-cream or a rich custard.

DELICATE PUDDING.

One cup of sugar, one cup milk, one egg, one cup raisins, butter the size of an egg, two teaspoonfuls baking powder ; flour to make a stiff batter. Steam one hour.

SUET PUDDING.

One large cup of bread crumbs, one cup sugar, one small cup suet, one cup sweet milk, two eggs, one teaspoonful cinnamon and cloves, one cup raisins, one and one-half teaspoonfuls baking powder. Steam three hours.

FIG PUDDING.

One-quarter pound of cooking-figs, two cups bread crumbs, one cup brown sugar, one and one-half cups suet, two eggs, one dessert-spoonful molasses, two dessert-spoonfuls flour, and a little nutmeg. Steam for three hours, and eat with sweet sauce.

SAUCE.

Put one cupful of sugar and a small lump of butter in a saucepan, let brown, pour two-thirds of a cup of boiling water in, thicken with a little cornstarch, and flavor to taste.

Influenza.

Influenza is a complaint that in the great majority of cases takes itself off through the pores of the skin and liquid excretions of the body. So long as the skin is dry and the temperature is high, active mischief is at work, but relief comes with perspiration. One or two teaspoonfuls of sweet spirits of nitre in a wineglassful of water the last thing at night aids nature very much in producing this desirable effect. A hot bath, with soda or ammonia in it, provided the patient can get straight into bed afterwards, or a hot foot-bath in the initial stage of the illness, does much towards relieving pains in the limbs ; but it is not desirable when the bath is taken on the first-floor and the bed-room is situated on the fourth, as the risk of chill is too great. Influenza often attacks the chest, and much mitigation attends a good nightly rubbing with ordinary salad-oil, glycerine, or that horsy but effectual compound known as Elliman's Embrocation. A cup of plain gruel or corn-flour acts at once as nourishment and a sort of inside hot poultice. The peculiar and long-lasting cough is much mitigated by half-wineglassfuls of horehound tea, sweetened with honey. The dryness of the mouth yields to sips of lemonade made by squeezing the juice of a lemon into a large glass and pouring boiling water over it. A spoonful of black-currant jam and a lump of sugar may be substituted for the lemon-juice, and thin barley-water flavored with lemon is supporting as well as pleasant. As a general axiom, it may be taken that eggs, meat-essences, milk-foods and soup are far more recuperative in most cases of recovery from influenza than meat and wine ; but these hints are chiefly suitable for those who treat influenza without a doctor. When a medical man is called in, his advice as to all these things must be carefully followed.

Names for Babies.

A Hindoo baby is named when it is twelve days old, and usually by the mother. Sometimes the father wishes for another name than that selected by the mother ; in that case two lamps are placed over the two names, and the name over which the lamp burns the brightest is the one given to the child. In the Egyptian family, the parents choose a name for their baby by lighting three wax candles ; to each of these they give a name, one of the three always belonging to some dignified personage. The candle that burns the longest bestows the name upon the baby. The Mohammedans sometimes write desirable names on five slips of paper, and these they place in the Koran. The name upon the first slip drawn out is given to the child. The Chinese care so little for their girl babies that they do not give them a baby-name, but just call them Number One, Number Two, Number Three, according to their birth. Boys are thought so much more of in China than girls are, that if one asks a Chinese father, who has both a boy and a girl, how many children he has, he will always reply, "Only one child."

The Australian Cockatoo's Lament.

"Shiver! shiver! shiver! shiver!
I can feel my topknot quiver.
Icy snow is all I see ;
Whatever will become of me ?

"Here in this country, dark and cold,
Into cativity I am sold.
Up and down my perch I walk :
I have not even heart to talk.

"Across the seas, far, far from home,
I little thought that I should roam.
Ah! woe is me ; I've lost my mate ;
Alack! alas! What luckless fate!

"No more those sunny skies I'll see,
No more my friends come calling me.
Now they've left me in the lurch,
Chained to a most ungainly perch!

"I almost wish that I could die!
They clipped my wings ;—I cannot fly.
Farewell for aye, my mother sweet,
No more on earth your child you'll greet."

—*Madame Roth.*

Ostrich and Parrot.

A contemporary gives the following exercises in English composition of two deserving school-children :—"The ostritch is a large and beautiful bird. People ride on them when they are going a long way and once I saw a picture of a boy on a ostritches back they have very large wings. The Prince of Wales has got a ostritches feathers in his hat. The ostritch is a large bird and the humming bird is as well but the ostritch is the largest of them. The ostritch is found in Manchester and they live on sand and make their nests on it and lay their eggs on it." "A parrot is a bird that reads a thing through and never thinks about it, and it is a very nice bird, and some of us do as well as parrots. I think we all ought to learn because that is what we are sent to school for. And when we read a thing we should not half read it over, like a parrot, when a parrot reads it over they don't think of what they are reading But we should think about a word before we read another, and not do like a parrot does at all. There is a great many who act like a parrot in some schools round this country."

It is possible that the following story may have been heard before ; it is too good, however, to omit now we have touched on the subject of pretenders and claimants. A young man presented himself at the Mansion House, and on being asked what his business was, replied, "Why, I had nothing to do, and so I was recommended to apply to the new Lord Mayor to appoint me to the office of Lord Mayor's Fool." "My friend," said the chief Magistrate, "no doubt you were well advised ; but the office is not vacant at present." The young man looked sad. "I was afraid so," he said slowly, "because some others told me that Your Lordship meant to perform the duties of Fool yourself." After much laughter, some money was given to the candidate for the Foolship, and he was ordered not to apply again for twelve months to come.

THE SOCIAL CORNER.

Under this heading, communications relating to the home or any subject of interest will be published and questions answered. MINNIE MAY.

DEAR MINNIE MAY,—I see a cure for a sprain, in the December number. Here is a better one : Take equal parts of salt butter and spirits of turpentine and simmer together on the stove, in an earthen bowl ; apply when cool enough ; also wet a woollen bandage with the mixture and wind the joint with this and it will soon be well. It is also good for a bruise or kick. Just try it and be convinced.

W. BROWNLEE, Hemmingford, Que.

DEAR MINNIE MAY,—As this is the season when children suffer much from croup and similar diseases, I thought it might not be amiss to give my remedy for the first mentioned and very often fatal disease. On first symptoms give a half tablespoonful of glycerine, or if that be not on hand, hog's lard as hot as can be swallowed does very well. Should this not check it, give powdered alum and honey until free vomiting is secured, repeating in an hour or so if necessary. In almost all cases of colds hot lard or tallow and turpentine rubbed on the chest will be found very beneficial.

A BUSY MOTHER.

DEAR MINNIE MAY,—I like the title chosen for your new department and hope all the ADVOCATE'S lady readers will take advantage of the opportunity it affords to assist one another in all possible ways. Sociability seems to be becoming an extinct virtue in many parts of the country—every one has so much to do. But surely no one is too busy to write a few cheery or helpful words to their co-workers once or twice a year, and if each one does so, what a pleasant column we shall have! Although I have been "Uncle Tom's girl" for so long, I am also a housekeeper, and, as such, claim a seat in your cosy corner. Being comparatively inexperienced, I hope to benefit by the experience of older housekeepers, and at present would be pleased if some one would tell me where I can get a reliable polish for cleaning a piano. I have a recipe for polish for fine furniture, but am afraid to venture using it on the piano. ADA ARMAND.

DEAR MINNIE MAY,—I have long wished for just such a corner as this in the ADVOCATE, and now that we have it, I hope each of the cousins will do her share to make it interesting and successful. Acting on my own advice, I venture to proffer a few hints that have helped me and may be new to some of your readers.

Steel knives and forks and other articles that have become rusty may be cleaned by rubbing with sweet oil, let stand a day and then rubbing thoroughly with finely-powdered unslaked lime. Baking-powder tins with holes punched in the bottom to allow the escape of air, make an excellent substitute for a mincing knife for vegetables and apples ; they may also be used as a cake-cuttter. The tops of old fine boots make the best iron-holders. A few drops of coal oil in any kind of starch keeps it from adhering to the iron. Copper and tin kettles, rubbed hard with paper, remain bright much longer than if a dishcloth is used to clean them. Common dome stove-lead, dissolved in alum-water and applied to a cold stove, gives the most brilliant and lasting polish ; it is more labor to use than many other polishes, but more satisfactory in the end. Fearing that I am taking up too much space, I will conclude by asking other housekeepers to give their experience. MARY DEAN.

[Letters like the above, containing helpful pointers, are always welcome in The Social Corner, and will be very useful to our readers.—M. M.]

In cases of chronic bronchitis, with difficult breathing and scanty expectoration, the use of banana-juice has been highly praised. The juice is prepared by cutting up the bananas in small pieces and putting them, with plenty of sugar, into a closed, glass jar. The latter is then placed in cold water, which is gradually made to boil. When the boiling-point is reached, the process is complete. Of the syrup so made, a teaspoonful every hour is the proper dose.

STOCK GOSSIP.

Mr. Jas. S. Smith says : "The Shorthorns we intend offering for sale on 28th February will be in nice condition by time of sale, and will include some of our very best individuals and of richest breeding. We will offer a large percentage from our deepest milking families. The dams of one-half the young things are now giving 50 lbs. of milk or over per day. Our best milkers brought us bull calves last year and heifer calves in 1893. We will offer both years' calves. The Springhurst lot will have winners at Toronto and London, and other large shows included, and will be in grand shape to go on to show next fall again."

DORSET-HORN BREEDERS.

The National Dorset-Horn Sheep Breeders' Association met on January 9th, in New York City. Secretary Cooper reported 36 new members during the year, making the total 147, scattered over 27 States, Canada and England, and representing about 5,000 head of recorded Dorset-Horn sheep. The officers-elect for the ensuing year are:—President, T. P. Cooper, Coopersburg, Pa.; Vice Presidents, Jno. A. McGillivray, Uxbridge, Ont.; J. A. Cochrane, Hillhurst, P. Q.; J. L. Henderson, Washington, Pa.; Secretary and Treasurer, M. A. Cooper, Washington, Pa. The next annual meeting will be held at Buffalo, January 15th, 1896.

NOTICES.

It is somewhat hopeful to note the advertisement of "T.W. D", who wants to *buy*, not sell, a farm.

YOU LIKE PIE!

Of course you do. Everybody does. If you would know how to make the best pies, and, in addition to this, would learn how to prepare really delicious puddings, with the most appetizing sauces, send a two-cent stamp to Dr. J. C. Ayer & Co., Lowell, Mass., and receive in return a copy of Ayer's Book of Pies and Puddings.

Messrs. Dick & Co., Montreal.—I have analyzed and tried your Blood Purifier in a large number of cases, with the most salutary results. I am continually prescribing it in my practice. It is invaluable for worms, hide-bound, impoverished blood, and debility, while I know nothing to equal it for general improvement of stock, and enhancing their value.

The Planet Jr. (L. L. Allen & Co., Philadelphia, Pa.) catalogue and show card (a beauty) for 1895 are to hand, giving every evidence that this old reliable firm appear to renew their youth with each succeeding year. We observe that they have added two important tools to their list, viz., the Planet Jr. Plain Single Wheel Hoe, and a much more pretentious implement, the Planet Jr. Orchard Cultivator, both of which will no doubt be extensively enquired for.

We have received from Robert Wightman, Chemist and Druggist, of Owen Sound, Ontario, sole agent for the Dominion of Little's Sheep and Cattle Wash, a gem in the way of lithographic art, entitled, "Play after Work." It represents an old man with a violin, and a more youthful companion with a fife, entertaining themselves, and a group of domestic animals at the same time, music having its charms even in a stable.

A few issues ago we gave in the ADVOCATE a lengthy account of the system of management pursued by Scottish farmers in fattening cattle. The testimony of a large number of feeders was given, and it was worthy of remark that in order to make the greatest gain they were practically unanimous upon keeping cattle scrupulously clean and free from vermin. Stock infested with ticks or lice cannot thrive well, and a great deal of the food given them will be literally wasted. Almost without exception now the most successful breeders and feeders use an effective wash or destroyer of some sort. In another column attention is directed to a preparation called the Leicestershire Tick and Vermin Destroyer, which is highly recommended for all pests of this sort. The proprietors are the well-known firm, G. C. Briggs & Sons, Hamilton, Ont., who guarantee perfect satisfaction when it is used according to directions. In winter and spring special care is needful in checking vermin, and our readers would do well to note the advertisement referred to without delay.

STOCK GOSSIP.

☞ In writing to advertisers, please mention the Farmer's Advocate.

Caldwell Bros., Briery Bank Farm, Orchard, Ont., write:—"Since we last wrote you we have built a new pig pen, 30 x 52, and have it filled with some very choice Red Tamworths. We have still a few boars ready to serve; also some nice sows due to pig in March; also young ones of almost all ages, and the best lot of sows in pig to fill spring orders we have ever had. We have disposed of our Yorkshires and are devoting our whole attention to the breeding of Red Tamworths of the very best strains. Our Ayrshires have improved in flesh since being stabled, as grass was very bad last season about here. At present we have over thirty pure-bred Ayrshires on hand. We have just opened our silo containing over 100 tons of ensilage, which came out in excellent shape."

SHORE BROS.' SHORTHORN SALE.

We have received Shore Bros.' catalogue of Shorthorn cattle, the sale of which was advertised in our last issue, and will take place at Thornville, lot 19, con. 4, Westminster, five miles south of London, on Thursday, Jan. 17th. The whole herd of cows are in nice breeding condition and regular breeders. We call attention to the number of young heifers due to calve soon, which will make foundation stock for herds. The stock bull, Defiance, is a pure-bred Cruickshank, of splendid quality, and gets remarkably good stock. The young bull, Diamond Prince, also promises well. The offerings will also include eight young bulls, which, with the exception of Diamond Prince, are all sired by Aberdeen Hero. Among the cows we notice the names of several Countesses, Booths, Duchesses of Glo'ster, Minas, and many others.

We have another evidence of the superiority of our stock in the success of Ontario poultrymen at the late Kansas City Poultry Show. We have shown our American cousins that we can duplicate the Columbian results whenever we wish to compete in their shows. The Ontario exhibitors were Geo. G. McCormick, Wm. McNeil and R. McGurdy, all of London. McNeil showed 190 birds, on which he received every first prize for which he competed except two. His premiums, besides cash, were a grand piano for best exhibit of birds scoring over 90 points; a gold medal for best collection of Bantams. McCormick won a gold medal for best Buff Cochin hen bred and owned by exhibitor, and a host of other prizes on his exhibit, which included about seventy birds. Their entire cash winnings amounted to about $700.00.

Messrs. David Morton & Sons, Hamilton, report: "Have had a brisk demand for Ayrshires, and have proved that as an advertising medium the ADVOCATE fills the bill. The two largest sales were made to Mr. W. B. Cockburn, of Aberfoyle, Ont., and Mr. C. A. Archibald, of Truro, N. S., the former purchasing twelve head, among them the well-known show cows, "Beauty of Ayrshire," "Jean Armour," "Nellie Gray," "Sprightly 3rd," "Lottie," and "Canty of Londonhill," as well as the fine young bull, "Royal Chief 2nd." With these cattle in Mr. Cockburn's hands, they will be heard from about next Fair time. Mr. Archibald purchased three imported cows, viz.: "Red Rose," "Jess" and "Sprightly 2nd," and three two-year-olds, "Topsy," "Mirly" and "Mirnie;" these were sired by their imported bull, "Royal Chief," out of imported dams. With these as a foundation, Mr. Archibald should soon have a grand herd. "Red Rose" is the dam of "White Prince 2nd," second prize bull at World's Fair, Chicago, and also of "Dundonald," which is pronounced by competent judges to be one of the best Ayrshire bulls in Canada. In addition to being a good stock cow, she is a grand milker. "Jess" is one of the three that won, for Messrs. Morton & Sons, the FARMER'S ADVOCATE cup at the Toronto Industrial in 1891, for the three best dairy cows of any breed. She is also the dam of several prize winners, among them "Lottie" and "Dominion Chief." Messrs. Morton add that they would like to apologize to those of our readers whose letters of enquiry for stock are still unanswered, the demand being greater than their supply of cattle.

OUR BOOK TABLE.

From the Reliable Incubator and Brooder Co., of Quincy, Ill., we have received a copy of their handsome illustrated 109-page catalogue and price list. This Company has the endorsation of the Mayor, and the leading business men of the City of Quincy. The catalogue is packed with interesting data on the subject of chicken rearing.

We have received Geo. H. Stahl's illustrated descriptive catalogue of the Model Excelsior Incubator and Brooder. This is the tenth annual catalogue of this firm. It contains 208 pages of incubator information, which is instructive and interesting to all poultrymen who read its pages. Hundreds of testimonials declare the Model Excelsior to be first-class in material, workmanship and hatching properties. It is manufactured at Quincy, Ill., U.S.A.

In the State of New York exists a body of the most wealthy, intelligent and prominent men (several of them millionaires), who call themselves "The New York Farmers." They have for some years held meetings from time to time, in which are discussed important agricultural topics. We have just to hand reports of their proceedings during the years 1892, 1893 and 1894. The first meeting, which was held December 20th, 1892, took up "Diseases of Cattle which affect Milk Secretion." On Jan. 17th, 1893, a meeting was held; the subject under discussion was "Weeds and their Extirpation." They met again February 21st, and considered the "Results Reached by the Agricultural Experiment Stations in Feeding Cattle for Beef and for Milk." On December 19th the Farmers met and discussed "Rose and Chrysanthemum Culture." January 16th, 1894, was the date of a meeting set apart to consider "Beet Root and its Uses." On February 20th the subject taken up was "Surface and Sub surface Irrigation." For each meeting a specialist was engaged to read a paper on the subject in hand, after which lively discussion followed, which brought out many excellent points. We regard the reports as unique bundles of reliable up-to-date information on the subjects taken up.

Annual Meeting of the Dominion Swine Breeders' Association at Guelph, Ontario.

On Wednesday morning, December 12th, the annual meeting of the Dominion Swine Breeders' Association convened in the City Hall, Guelph.

Mr. Daniel DeCourcey, the President, thanked the swine breeders for the honor they had done him, and made reference to the educational work being done by the Association.

ELECTION OF OFFICERS.

The following gentlemen were elected officers of the Association for the ensuing year:—President, D. DeCourcey, Bornholm; Vice-President, J. E. Brethour, Burford; Secretary-Treasurer, F. W. Hodson, Guelph.

DIRECTORS FOR THE DIFFERENT BREEDS:

Yorkshire, G. B. Hood, Guelph; Berkshire, S. Coxworth, Claremont; Suffolk, R. Dorsey, Burnhamthorpe; Chester White, R. H. Harding, Thorndale; Poland-China, W. Jones, Mt. Elgin; Essex, Jos. Featerstone, M. P., Streetsville; Tamworth, Jas. Bell. General Director, J. C. Snell, Edmonton.

DELEGATES TO FAIR BOARDS:

Toronto Industrial Exhibition, Thomas Teasdale, Concord, and J. E. Brethour, Burford; Ottawa, Jos. Featherstone, M. P., Streetsville; Kingston, R. G. Martin, Marysville, and G. M. Hurley, Belleville; Quebec Provincial, G. Beaudet, Valleyfield, P. Q., and W. Tait, St. Laurent, P. Q., and J. Y. Ormsby, V. S., Danville, Que; Peterborough, R. Vance, Ida; Guelph, G. B. Hood and Jas. Anderson; London, Geo. Green, Fairview, and R. H. Harding, Thorndale.

AUDITORS:

John I. Hobson, Mosboro, and R. Snell, Edmonton.

The following list of judges was recommended:—

Berkshires.—J. C. Snell, Edmonton; S. Coxworth, Claremont; J. G. Snell, Edmonton; T. Teasdale, Concord; C. M. Simmons, Ivan; J. Main, Milton; Jos. Featherstone, Springfield-on-Credit; R. Vance, Ida; R. P. Snell; R. Dorsey, Burnhamthorpe; Malcolm McArthur, Lobo.

Chester Whites.—J. C. Snell, Edmonton; D. DeCourcey, Bornholm; J. E. Brethour, Burford; Wm. Jones, Mt. Elgin; Geo. Green, Fairview; R. Henderson, Listowel; R. Dorsey, Burnhamthorpe; Joseph Cairns, Camlachie; R. H. Harding, Thorndale; A. Elliot, Galt.

The list of experts for the remaining five breeds have not yet been furnished us.

The Secretary was authorized to pay the expenses of the auditors to Guelph.

Matters of interest to the Manitoba and Northwest sheep and swine interests were introduced by Mr. G. H. Greig, of Winnipeg, and Mr. W. Kitson, of Burnside, Man. With regard to representation to the Winnipeg Industrial Exhibition, it was decided to refer the matter to the Provisional Directors of the Manitoba Sheep and Swine Breeders' Association, now being organized, as to whether or not they desire this Association to appoint a delegate, and if they reply in the affirmative, our Executive will appoint delegates.

The Secretary was authorized to give the Manitoba organization all the assistance in his power.

EVENING SESSION.

Prof. Wm. Saunders, Ottawa, read a lengthy and carefully prepared paper, giving the results of the swine feeding experiments carried on during the last year or so at the Dominion Central Experimental Farm, which go to confirm the lessons of practical experience on such points as the advantage of having hogs ready for market at an early age, the non-profitableness of cooking feed, etc. A great deal of statistical data on the cost of pork production was also submitted.

Hon. John Dryden followed with an able and practical paper on "The Principles to be Observed in Establishing a Herd or Flock," published in the Jan. 1st issue of the FARMER'S ADVOCATE.

Mr. J. C. Snell gave an admirable criticism (also appearing in the ADVOCATE) of the papers on swine breeding, care and feeding, which appeared in the last annual report.

Addresses were delivered by Mayor Smith and Mr. Andrew Pattullo, President of the Western Ontario Dairymen's Association.

Mungo McNabb, Cowal, writes us as follows:—"My sales of Leicesters from advertising in the ADVOCATE have been most satisfactory. I have sold since June, 1894, nineteen sheep for breeding purposes. Of these one went to Manitoba, four to New Brunswick, and five to Quebec, all of which were sold through advertising with you. Prices have not been very high, but were such that a breeder can live. We were very successful in the show ring, winning many premiums and diplomas at Southern County, West Elgin and other fairs. The Shorthorn bull, Starlight, I bought from W. Redmond, of Millbrook, a year ago September, has done splendidly. He is leaving grand calves,—the best I ever had."

J. H. Smith & Sons, Willow Grove Stock Farm, Highfield, write: "Entering upon the new year, our herd of Jersey cattle are doing well without exception, and our sales have been numerous. We sold on Nov. 12th, 1894, to Robert McCullough, Edmonton, Rosa May's son, dropped August 26th, 1894. He is solid color, with full dark shadings; elegant head; extremely well-marked escutcheon, with large rudimentaries very squarely placed. This young bull is not only very handsome, but bred for great butter qualities, being sired by our stock bull, Hugo Alphia of Oaklawn, who has established a reputation in the show ring for himself and progeny; dam Signal Rosa May record, 22 lbs. 4 ozs. of butter in seven days, and who has swept everything before her in the show ring. We also sold one each to Mr. John Willis, Brampton; J. N. Blinn, Woodbank; D. Blea, Toronto; David Hall, Toronto; John Britt, Toronto; T. Eaton & Co., Toronto; Thos. H. Himes, Toronto, and two to J. R. Dixon, Richview. We have now only one young bull left, dropped July 21st, 1894. He is a large, handsome all-solid silver fawn, with full dark shading. We also have several heifers to calve shortly, which are very handsome, and have grand udders."

STOCK GOSSIP.

☞ In writing to advertisers please mention the Farmer's Advocate.

Mr. Geo. W. A. Reburn [St. Anne's (P. Q.) Herd Jerseys] writes:—"The frontispiece in the January 1st issue of the ADVOCATE is, I think, the finest of its kind that I have ever seen, and is a credit to your Journal. Your artist has excelled all his former work of this sort, and has drawn the scene true to life."

Mr. J. C. Snell, Edmonton, Ont., writes:—"The demand for Jerseys continues with increasing activity. The results of the past year's business have shown that, tried by the severe test of financial depression, no branch of farming has stood the strain of the hard times so well as Jersey dairy farming. The farmer who has fed his grain and hay to good Jersey cows has realized good prices, and has never had to beg for a market or wait for his pay. We have sold over forty head of Jerseys during the past year by private sale, and have a grand lot of young heifers and a few good cows for sale now."

MESSRS. SIMMONS & QUIRIE'S SHORTHORNS AND BERKSHIRES.

In these days of Agricultural Colleges and Experiment Stations, there may be danger of estimating too lightly the hard-learned lessons of ordinary experience. Without in any way reflecting upon these agencies for increasing the sum total of agricultural knowledge, we must never lose sight of the slower, substantial teachings of the field and the feed lot, the stable and farm herd. The life work of an observant, thoughtful man cannot but teach lessons of the greatest value. On recently looking over the highly cultivated fields comprising the fine farm of Mr. C. M. Simmons, of Ivan, in Lobo Township, his outbuildings, and more especially his herd of Shorthorns, the writer was impressed with the thought that here was represented very largely the outcome of a life work in breeding, feeding and general management, just one of those examples that the young farmer or breeder would do well to ponder, because theoretical knowledge can never take the place of actual experience;—what a man has wrought out for himself he actually knows. It was twenty-five years ago that Mr. Simmons began breeding Shorthorns.

In the matter of cattle rearing, having been through the whole course, from the purchase of breeding-stock right on to the milk pail, on the one hand, and the British market with the finished beeves, on the other, the teaching of all this experience stand in evidence about the Simmons' stables to-day. The advance of dairying on the one hand could not be ignored, but the ideal steer for the feeder and the British butcher was never lost sight of. Scotch Shorthorn blood dominates, but still there has not been that fatal infatuation for pedigree that refuses to cross a given line to get a good breeding animal when required. Then, again, in herd management the non-exercise heresy has never reached the extent of confining cows with a chain or stanchion for six months at a stretch. Bulls as well as cows and youngsters get their daily allowance of fresh air and sunlight and a walk to the water trough, filled automatically from a windmill tank; and then in the matter of foods, too, we noted the generous use of roots and properly saved ensilage from well-matured corn, with plenty of wholesome variety in other foods. Naturally we find robust healthfulness in the stock. Of the females in this herd, to those versed in Shorthorn lore, it will be enough to say that the Mina, Strathallan, Golden Drop and Mysie females are represented, and a number of capacious, well-formed udders speak for their milking capabilities. At the head of the herd stands Royal Saxon =10537=, a massive, sappy roan, with, as one authority puts it, "plenty of character," or as Hon. Mr. Dryden remarked in his paper published in the Jan. 1st FARMER'S ADVOCATE, possessing "a noble bearing." At the last Toronto Industrial he was good enough to carry off premium honors in his class. He was calved June 16th, 1888, being bred by Mr. W. J. Biggins, of Clinton; got by imp. Excelsior; dam Matchless 19th =3881=, by Statesman. His compeer and successor in the herd is Barmpton M. =18240=, another roan, bred by J. & W. B. Watt, Salem, Ont.; got by Barmpton Hero; dam Mysie 41st =17246=, by Corporal Crimson =1551=. He was calved Nov. 13th, 1892, so that he does not yet quite disclose what his full development will be. Though not now possessing the great substance of Royal Saxon, he shows correspondingly well in front, and is rather better in a couple of other points. When the show-rings of next fall are reached he ought to make a place for himself toward the top, if present promises are fulfilled. His calves are right good ones and coming evenly. The predecessor of Royal Saxon was the red bull Mina Chief =13670=, bred by Arthur Johnston, Greenwood; by famous old Indian Chief; dam Mina Lavender; who brought glory to the herd and the herdsman (Lauchie Cameron) at the last Industrial by being the sire of a rare quartette of red beauties that captured everything there was to take in the heifer class—1st, 2nd, 3rd and 4th. That, surely, was enough to satisfy any reasonable contestant in the show-ring. They are still coming on wonderfully well, but some might incline now to place the second prize winner to the fore, though not possessing quite the finished bloom of her mate. Another trophy for Mina Chief progeny at the last Industrial Fair was the winning of 1st premium by the bull calf Stranger (dam Elvira), now the property of Mr. Wm. Werry, of Salina, Ont., who is more than pleased with him. Prior to the advent of Mina Chief, Sir Christopher 3877 ,got by imp. Prince of Northumberland; dam Ury 7th; bred by John Isaac; stood at the head of this herd. Results in the show-ring, and otherwise, have demonstrated the sagacity displayed in the choice of the foregoing series of bulls. Among the choice young stock that especially attracts notice was a young red (and a little white) calf, by Royal Saxon, dam Golden Drop by old Barmpton Hero, that will make a show winner, barring accidents. A noticeable characteristic of all the stock, bulls included, was their uniform docility and good temper.

A few miles farther south, near Delaware village, is located the grand grazing and general stock farm of Mr. James Quirie, Mr. Simmons' partner, on which Berkshire swine breeding is made a specialty. It is enough to say that they are of the prize-winning, money-making sort that the every-day farmer can make no mistake in breeding and feeding.

STOCK GOSSIP.

☞ In writing to advertisers please mention the Farmer's Advocate.

The National U. S. Swine Breeders' Association elected officers as follows at their recent annual meeting:—President, E. C. Rouse, Albion, Mich.; Vice President, Jos. Cunningham, Loree, Ind.; Secretary and Treasurer, John G. Springer, Springfield, Ill.; Executive Committee: L. N. Bonham, Columbus, Ohio; N. H. Gentry, Sedalia, Mo.; W. M. McFadden, West Liberty, Iowa.

At the annual general meeting of the English Southdown Sheep Club, held during the Smithfield Show week, Capt. the Hon. T. S. Brand was elected president for the ensuing year. The fact is interesting to Southdown breeders, as Capt. Brand's flock is kept on the identical Sussex farm where the late John Ellman reared his sheep. A vote of thanks was passed to the retiring president, Mr. J. J. Coleman, M. P., who had just won the champion prize in the show over all short-woolled breeds of sheep with his pen of Southdown wethers.

The Illinois State Board of Agriculture has ordered that for making fraudulent entries for Southdown sheep at the last fat stock show held in Chicago, Louis Newton, Wm. Newton and Mrs. Ann Newton, of Pontiac, Mich., be barred from exhibiting at fairs or shows held under the auspices of the Board for a period of two years, the longest term the rules of the Board permit. The American Southdown Breeders' Association, at its meeting in Chicago during the World's Columbian Exposition, ordered that pedigress emanating from these same parties should not be received for registry.

J. E. Brethour, Burford, reports:—"One of my exhibition sows, Roseberry Belle, recently produced at a farrowing seventeen living pigs, which I think is good evidence that when pigs are properly fitted it does not interfere with their usefulness for breeding purposes. All the sows over two years old that I have fitted for exhibition have been regular breeders, producing two litters of pigs each year. I know that this is not usually done, but I have always succeeded in winning a large share of the premiums. My herd now comprises over two hundred and fifty head, and I am breeding a splendid lot of young sows to imported or prize-winning boars. The entire stock I am offering at prices to suit the times."

Mr. Thomas Irving, jr., a well-known breeder of high-class live stock, and an all round farmer of wide repute, has taken up his residence at Howick, P. Q., where he has moved from Montreal. He purchased the Brodie estate on the Chateauguay river, containing about two hundred acres, and will devote his attention to the specialties for which he has become so famous. The ploughmen of the neighborhood turned out in full force on the day of his arrival and did his fall ploughing. Mr. Irving chose his new home after visiting nearly all the finest farming districts in the province, satisfied that he had selected the very best spot among them. Mr. Irving is a son of Mr. Irving, of the Logan Park Farm, justly famed for its Clydesdale horses and Ayrshire cattle.

In conjunction with liberal advertising, Mrs. E. M. Jones, of Brockville, thus answers the question how she is able to make so many sales of stock. "It is" she says, "because I try to keep only the very best dairy Jerseys, and to make the price reasonable, considering the goodness of the animals. I do not *give* them away at starvation prices; if I did it would argue very badly for my foundation animals, or for my own judgment. Those who want to get 'something for nothing,' as the saying goes, will rarely succeed in establishing a really first-class herd. I cannot sell a bull calf at $25; I cannot afford to keep that sort, or stock that will produce that sort. But I sell as low as I reasonably can, and the result is the pens are almost always clear of everything I have to spare, and occasionally I have to break into my reserve stock to fill an order. Last week I shipped a pair to Mrs. Imrie, of Romney, Ont. The bull was sired by Signal of Belvedere, whose dam made me 20 lbs. 6 ozs. butter in one week and gave 20 quarts milk per day. The dam of the calf was Bessie of Malme, one of the very best all-round cows I ever owned for milk, butter, and for the show-ring too. The heifer was Rioter's Margery, over a year old and in calf; she is a g. g. daughter of Old Massena. I also sold to Mr. Andrew Walker, of Metcalfe, Ont., a superb bull calf. His dam was out of same dam as Signal of Belvedere, and was sired by my great prize bull, Canada's Sir George, whose dam tested 26¾ lbs. a week, and gave 57 lbs. milk in one day. The sire of the young bull was Lilium's Rioter, whose dam gives me 20 quarts a day, makes 17½ lbs. butter a week, never goes dry and is the handsomest cow I own. Mr. Walker bought the calf some time ago, without seeing it, and wrote that it was a great deal better than he expected; he did not think he was going to get such a fine calf. He then wrote about a cow, and I described her appearance and yield. He came up yesterday and said she *far exceeded* his expectations; he remained all night, milked the cow night and morning and took her away next day delighted. Minnette Pogis 2nd, one of my great show cows, dropped a heifer calf 6 weeks ago which is a beauty. The cow's udder is a sight, and she is giving over 40 lbs. milk a day. Muriel of St. Lambert dropped a magnificent bull calf, solid fawn, on New Year's Day. He is *pure St. Lambert*, being sired by Canada's Sir George, just referred to, and he should certainly make his mark if looks and breeding are any indication. Not long ago, a gentleman from the States sent up his card, and I at once saw that he was the same person to whom I had sold a heifer calf from Canada's Sir George over two years ago. He told me he had come 700 miles just to see Sir George, and after looking him over, said he was well repaid. I then asked him about the heifer, and he said she was such a wonder that he determined to come and see her sire. She calved last summer, at 2 years old, and gave 35 lbs. of milk a day (in 1st calf), and he considers she has the handsomest udder in the State of Pennsylvania. I regret now that I have parted with the stock from this bull, chiefly to the U. S., but I have two of his heifers now in milk that are *my best*, and that I will not sell (though I will sell a fine bull calf from one of them), and I have two more splendid heifers from this bull that will milk during this year (but are not for sale), and have several fine cows in calf to him.

BREEDERS' DIRECTORY.

Cards up to six line space inserted under this heading, one issue a month, $3 per line per annum: every issue, $5 per line. Payable in advance.

A. ELLIOT, Pond Mills, Ont.—Tamworth Pigs, Oxford Sheep, and sweepstake strain of Bronze Turkeys for sale. 20-2-y-om

ALEX. HUME, Burnbrae, Ontario, Importer and Breeder of Ayrshire cattle and Yorkshire hogs. 330-2-y

ALF. BROWN, Bethel, Ont., breeder of Ayrshire Cattle, Shropshire Sheep and Leghorn and Dorking Fowl. 14-2-y

A. MANN, Bowmanville, Ont., breeder of Pure Galloway Cattle, Tamworth Swine.

A. M. & R. SHAW, Brantford, Ont., breeders of Galloway Cattle. Choice young animals for sale. 4-2-y

BLACKWOOD & McCALLUM, Martintown, Ont., breeders of registered Clydesdales, Shropshires and Yorkshires. 340-2-y

D. A. CAMPBELL, Mayfair P. O., Ontario, Appin Station, Breeder of Registered Lincoln Sheep. Stock for sale. 2-2-y-om

D. G. HANMER & SON, Mt. Vernon, Ont., Importers and Breeders of high-class Shropshire Sheep and Berkshire Pigs. 2-2-y-om

FRED. S. WETHERALL, Compton, P. Q., breeder of Jersey Cattle and Shropshire Sheep. 18-2-y

H. I. ELLIOTT, Danville, P. Q., breeder of Scotch Shorthorns & Southdown sheep.

JAS. HUNTER, Alma, Ont., Canada, breeder and importer of Shorthorn Cattle, Clydesdale Horses and Shropshiredown Sheep. 322-y

JAMES STEPHEN & SONS, Brookhill Farm, Trout River P. O., P. Q., importer and breeder of Ayrshire Cattle and Yorkshire Pigs. Young stock always on hand for sale. 6-2-y

JAS. TOLTON, Walkerton, Ont., importer and breeder of Oxford-Down sheep, also breeder of Shorthorns, Berkshire pigs and Bronze turkeys. 6-2-y-om

JOHN LAIDLAW, Crosslee Farm, Wilton Grove P. O., Ont., breeder and importer of Border Leicester Sheep. Sheep for sale. Satisfaction guaranteed. 328-y

JOS. CAIRNS, Camlachie, Ont., Breeder of Pure-bred Chester White Swine. 4-y

J. P. PHIN, THE GRANGE, HESPELER, ONT. — Breeding and Importing SHROPSHIRE SHEEP a specialty. 22

MAPLE RIDGE SOUTHDOWNS.—Guy Carr, jr., Compton Station, Quebec, also breeder of P. Rocks and Wyandottes. 16-2-y

ROBERT MARSH, Lorridge Farm, Richmond Hill, Ont. — Importer and Breeder of SOUTHDOWN SHEEP. 14-y

T. GUY, Oshawa, Ont., Breeder of Ayrshire Cattle—prize winners at the World's Fair.

THOMAS IRVING, Montreal, breeder of Clydesdale Horses and Ayrshire Cattle. 8-2-y

WM. STEWART, JR., & SON, Menie, Ont., Ayrshire Cattle and Berkshire Pigs. 22-2-y-om

W. H. BEATTIE, Wilton Grove, importer and breeder of Shropshire Sheep. A choice lot of Collie Dogs and White Holland Turkeys. 319-y

WM. SMITH, M.P., Columbus, Ont., breeder and importer of Clydesdale Horses, Shorthorn Cattle, and Cotswold Sheep. Stock for sale. Terms and prices liberal. 325-2-y

GRATEFUL—COMFORTING.

EPPS'S COCOA

BREAKFAST—SUPPER.

"By a thorough knowledge of the natural laws which govern the operation of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided for breakfast and supper a delicately flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well-fortified with pure blood and a properly nourished frame."—Civil Service Gazette.

Made simply with boiling water or milk. Sold only in packets, by Grocers, labelled thus:—

JAMES EPPS & Co., Ltd., Homœopathic Chemists, London, England. 20-2-f-o

UN-NERVED, TIRED

People and invalids will find in

CAMPBELL'S QUININE WINE

A pleasant restorative and appetizer. Pure and wholesome, it has stood the test of years.

Prepared only by K. CAMPBELL & Co.,

Beware of Imitations. MONTREAL.

20-2-y-om

ROOFING

FREEMAN'S 3-ply Ready Roofing.

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