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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

VOL. 4. No. 16 — This Journal replaces the former "Journal of Agriculture," and is delivered free to all members of Farmers' Clubs. — FEB. 15th, 1901

THE

Journal of Agriculture and Horticulture

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

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

Subscription : $1.00 per Annum payable in advance

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The Farm.

NOTES BY THE WAY.

"Hounds."—We fear that the prophetic threats of Carlyle, in the last century, as to the fate inevitably reserved for the wretched squirarchy of England, if their passion for the chase did not soon give way to a passion for higher things, have not had much effect upon that thickheaded lot. Things are, apparently, worse than ever in that benighted island. Where there were ten packs of hounds in Carlyle's day there are at least fifteen packs now, and the number of horses kept solely for the purpose of hunting is beyond belief. And yet, our young men do not seem to be very degenerate : Africa and the Boers did not find them weakly or effiminate. They lived hard and they fought hard ; did not some at least of their hardiness derive from their early introduction to the sports of the field ? Well, we had plenty of it in our time, for we went to our first Meet on 15th of October 1831, just a forthnight before we reached the great age of eight years, and we do not think our early experience in hunting had the effect of either coarsening our habits or lowering our love of books in after life. At the present day there are in England of Staghounds 24 packs, of Foyhounds 196, of Harriers 127, and of Beagles 51 ; in all 396 packs. Of course, the Beagles are, or at least used to be, followed by men on foot ; the run of course ridden to by mounted men. Diffi-

cult to say how much a pack costs to keep up. There are many expenses that do not appear necessary to one who is not among those that manage "Countries," as the districts appropriated by each pack are called, but Lord Bathurst, who ought to know, estimates that the yearly expense of keeping fox-hounds and hunting County is about $3,850 for each day they hunt in the week ; by this is meant that an ordinary pack of fox-hounds, not in "the Shires," but in a Country district, hunting three days a week, would cost about $11, 650.00.

Hounds are fed on old oatmeal, which averages about $80.00 a ton, and soup made from worn out-horses, or cattle that have died a natural death. The duke of Beaufort's hounds, that hunt the Badminton country, devour, for each couple, $40.00 worth of these two articles a year? Then come various other items ; damage to fences, etc ; f owls killed by foxes ; horses for the Master ; the servants' wages. Huntsmen, Whips, Kennel-Huntsmen, etc., besides a very moderate average of ten horses to each pack. Again, comes the saddler's bill, earthstopping, "nomen illis legio" ; there is no end to the charges to be borne, and when it comes to packs like that of the late Lord Henry Bentinck, who hunted the Whittlebury, Notts country in our day, six days a week, toe cost is recarlly enormous. And who profits by all this outlay ; do you ask ? The reply it simple ; the tradesmen and the farmers ; the farmer, as the saddler, the miller, the veterinary" (though he is hardly a tradesman), blacksmith, would be at a sad loss in the country towns and villages without the hounds and their adjuncts, the latter would miss the extra price he has long been used to receive for his old oats, beans, and hay, both clover and meadow. Taken together, we may fairly say that the capital invested in the sport is not fas from $50,000,000.00, and the cost of following it, to masters, susciber, and private individuals, puts into circulation at least $25,000,000.00 a year.

"Lincolns."—Great prices have been paid of late for Lincoln Rams for the Australian Colonies and, we believe, for South America. We give in the present number a characteristic portrait of the three Linco,n Wethers, that won the first prize for the best Long-Wools at the Smithfield Club Show of 1900.

"Candlemas-Day."— Old sayings about weather are always worthy of attention, there is always something in them, more or less the product of long and astute observation. At the same time, we must be careful to interpret the sayings correctly, which is not always done. For instance, the contributor of many useful articles to one of the Montreal Daily Papers quotes the old saying,

"If Candlemas-day be clear and fair
"Half the winter's to come and mair."

Without due consideration, for the lines by no means refer to our present second of February, but to candlemes-day old style, which answers to our present 14 th of February, but to Candlemas-day old style, as regards the other old weather prognostics, such as,

"The hind had as lief see his wife on her bier
"As that Candlemas-day should be fair and clear."

In which the word "lief" is from German "Lieb," loved, old English "leaf."

The anglers favourite fly the "green-drake," is commonly called "the May-Fly," though it is rarely seen, even in Southern-most England, till June 4th new-style, equivalent to May 23rd, old-style, et sic de ceteris.

"The wheat-crop of 1900 in England."—Sir J. H. Gilbert has issued a report on the wheat crops grown on the Rothamsted experiment farm in 1900, all, of course, sown in the autumn of 8899.

The winter was a very wet one ; the summer following very dry ; the harvest very wet. On the plot sown contineously

for 57 years, without manure, the average yield has been, throughout, twelve bushels; last year, 12 1-2. The plots manured every year with 14 tons, say, 20 good cart-loads, the yield was 33 1-4 bushels, 34 to 41 bushels having been grown on the same plots in different years. The plots treated without artificials gave 33 1-2 bushels: they sometimes have yielded as high as 40 bushels but the average has been 38 1-4. One of our exchanges states that the average of England's wheat-crops is calculated "from the yield of the very best land in that country, specially worked and manured; often summer-followed." This is far from being a correct view of the case. It may be true of Scotland, (34 bushels an imperial acre) where a very small acreage of wheat is grown, but in England, wheat is grown in its turn in the rotation over the whole country, except, perhaps in the extreme North and in Cornwall.

Very little summer-fallow is to be seen and that only on some extremely heavy clays.

"Ploughs."—At the great "All England Ploughing Match" at which 124 Champion-ploughmen competed, men working with ploughs made by Howard, of Bedford, won nearly all the prizes and the Championship of the meeting. Famous good ploughs they are too. But no better than the ploughs made by Ransom & Sims, of Bedford, Busby of Newton-le-Willows near Bedale Yorkshire, six of whose ploughs we worked when we were farming in England. The plan on which these ploughs are constructed are all on the same general lines; two wheels, one large one running in the furrow, the other smaller, running on the unploughed land, and so arranged that a boy of ten can plough, after the "feering" has been made, as well as a regular ploughman. All iron, these implements; very strong and durable; mould-boards and shares made to suit all soils from clays to sands, with a turn-furrow running in front of the coulter to throw down the grass and rubbish to the bottom of the furrow. Splendid work they make, except on stony land, where our Kentish "turn-wrest" or "turn-rice" plough is the best instrument to use, it being the only plough that will work to advantage on the flint covered valleys of the chalk-formation in Kent, Surrey and Sussex, where the flints lie so thick that one can hardly see the ground, though in spite of that, many an acre yields, in a good year, a "load" of wheat, the load, in that part of England meaning 5 quarters or 40 bushels.

"Hay."—What curious ideas some people have: Not long ago, we saw a statement, in one of our exchanges, that "A Wisconsin farmer who was in the way of making extensive contracts with lumbermen for hay was always noted for the bright green quality of his hay. How he did it was a secret of his own, but this is about the size of it. Green cut hay has always a tendency to mould. He met this difficulty by the use of air slaked lime. On the corner uprights of his hay rack he hung two pails of this dry lime. When loading he dusted the hay with a handful or two of the lime, using about the two pails on a good load of hay. By the time the hay was built in the stack the lime was fairly well mixed with the hay, and must have killed any tendency to mould, for that hay always came out clear and bright. There was a little dust on it, but the horses seemed to like it better than any other that was offered them. It is worth trying here when the next hay season comes round."

Of course, all the best hay that is taken to the London market—of meadow-hay we are speaking—is as green as grass, made so or rather kept so, by being turned constantly, sometimes 5 and even 6 times a day, and always put in to cock at night. As for hay turning mouldy in the stack that can only arise from its having had rain upon it, that has not dried up before

the hay is carried. We pity the poor horses that had to eat it, but the probability is that the man who sent this statement to our contemporary was what English school-boys used to call "larking" the editor.

"Rations."—The fitness of foods to animals is not entirely a question of chemistry, but depends upon physiological and digestive problems not easily solved. A food when mixed with other foods produces different effects than when fed alone, or considered upon its separate merits. Hence the great favour with which roots are regarded in Britain; for though turnips, for instance, are supposed, and correctly supposed, to contain 90 per cent of water, their effects, when given to stock with an addition of cake or grain, are far greater than their chemical analysis would authorize one to anticipate. After all said and done experience always has been and always will be the safest guide.

LINCOLN WETHERS.

The property of Mr. John Pears, Mere, Lincoln. Winners of First Prize and Cup ast Bes Longwools at the Smithfield Club Show 1900.

ALFALFA OR LUCERNE. ITS COMPOSITION AND DIGESTIBILITY.

Such is the title of a bulletin composed by Prof. Harcourt, chemist at the Ont. Agric. College, and recently issued. This bulletin like all these issued by the College is eminently practical in character and brings out some new and very interesting facts upon that most valuable of forage crops.

Of all forage plants at the disposal of the farmer, Lucerne easily ranks in the first place, when grown under suitable

conditions of soil and temperature. It has moreover the advantage to withstand, more than most other crops, very dry weather, owing to the extreme length of its roots, which enable it to get water from the depths of the soil. It is to this particularly that Lucerne owes its great popularity in Ontario at the present time, this province having much to suffer from severe and recurrent droughts. Where it was grown only in small plots, it now occupies as much as one fifth of the farm. Lucerne has also been known to give good crops in our locality, and there is no doubt that some farmers would find great advantage in growing it.

The length of the time which Lucerne takes to become firmly established is one of the drawbacks to its cultivation. Yet, if the conditions are suitable the subsequent crops wil, amply repay for the time invested. Lucerne will succeed best on a deep loamy soil with a gravelly sub soil. In such a soil the roots will often reach a depth of 12 or 15 feet—the only limit to their length being the level of the water table. It can also be grown on a heavy clay soil provided the surface is well supplied with vegetable matter to insure a vigorous start. A top dressing of barn yard manure at the time of seeding will help to secure a good catch. The chief requisite in all cases is a good natural drainage.

It has been a long prevailing idea that Lucerne seed had a very poor germinative power, and hence it was recommended to use a large amount of seed. A test of eleven years however has shown the vitality of Lucerne seed to be equal, and even superior to that of all other leguminous plants, and less affected by age. The amount of seed recommended is from 15 to 20 lbs. per acre. The time of seeding is in the spring as soon as all danger of frost is passed.

The first year is the most critical in the growth of Lucerne. It is dangerous to have the plant pastured the first season. The second year, two or three crops may be secured. On the O. A. C. experimental plots, it has given as much as 20 tons of green crop per acre.

If Lucerne is to be pastured, two conditions should be strictly adhered to: Enough stock should be kept upon it to eat it all before it has reached the blossoming stage, as past that stage it becomes woody and indigestible. 2nd. It should not be grazed too closely; the new growth comes from the root itself, and not from the base of the old stem; hence close grazing impairs the vitality of the plant. Hogs are less likely to injure it than sheep and horses, both of which are very close grazers.

It is yet generally believed that Lucerne makes very poor hay, being at the best stalky and indigestible. The chief purpose of the bulletin is to refute this assertion. It has also often been said that Lucerne cannot be converted into hay without a considerable, if not a total loss of the leaves. It has been proved however that this loss can be much lessened by cutting when the plant is just showing bloom, and by handling and curing the plant in the proper manner. The hay should be raked when a little tough and the curing should be done in cocks as much as possible.

The experiments quoted in the bulletin show conclusively that Lucerne hay, if made in the proper time, is quite as digestible as good clover hay. To determine at which time the cutting should be done the analyses of threee cuttings were made. The first cutting was done as soon as the buds were out; the second when one third of the blossoms were out; and the third when the plants were a little past full bloom. The largest amount of digestible matter was obtained at the time of the second cutting. The decrease in the amount of digestible matter past this point is very rapid amounting to as much as 18.8 p.c., in favor of the second cutting over the third. Therefore for both soiling purpose or hay-making, Lucerne should be cut as soon as the blossoms begin to form. There is also serious danger in feeding it later owing to its indigestibility.

(NOTE BY THE EDITOR).—Lucerne, like clover, should be allowed to make itself into hay, if hay must be made of it. Let it lie after moving until the surface is wilted; turn in carefully and without the slightest attempt to "break it out"; and when the fresh surface is wilted, get in raked together and into cock as soon as possible. Carry from the cock without spreading, unless rain after cocking has made spreading inevitable. We always have fancied that the difficulty of getting lucerne into fashion lay with the trouble it takes to make hay of it. In England, it is never made into hay and never pastured, but invariably cut for "green-meat."

VALUE OF EXPERIMENTS

Modern farming with its various drawbacks, necessarily requires for its successful practice, far more information and intelligence than that which sufficed in former times. Take for instance the subject of manures. Our ancesters, a hundred years ago, relied solely upon farmyard manure, and the methods of restoring the fertility of the soil, were so limited that Lord Townshend—I think it was—ranked high among the benefactors of his country (Norfolk) for having introduced marling into that country. This was a costly application, and a smaller outlay and a quicker return were found to be desirable and were quickly effected. "When the marl is worn out" says an authority of the day, "the farmers have latterly got into the method of manuring with oil-cakes for their winter corn, which they import from Holland, and spread upon the fields at an expense of 16 shillings (abt. $4) an acre."

In order to understand the absolute necessity for employing artificial fertilisers in the practice of high farming, it is only necessary to observe how totally inadequate is the manure made on most farms to restore to the soil the plant constituents removed in the crops. In the ordinary management of arable land, the whole of the manure which arises, from the consumption of the hay, roots, and other produce eaten by stock, where the whole of the straw is trodden into dung, does not exceed an annual production of 800 tons of rotten farm yard dung on a farm of 400 acres. That is to say, only one fourth of the land can be dressed with the dung annually to the extent of 8 tons to the acre. As eight tons of rotten farm yard dung contains little more than 96 lbs. of nitrogen, such dressing is totally inadequate for the restoration to the soil of the notrogen contained in the crops.

No arguments can be necessary to show the importance of a knowledge of manures, and the requirements of the soil. There are soils and soils, however, and before we can successfully apply the general principles of manuring, in the case of our own particular soil, we must ascertain its nature and condition, and whether it contains the necessary amount of each plant constituent in a form available by the crop during its growth. To make the most of the land, or rather of the manures supplied to it, their composition must be understood, and it has been asserted, no doubt with truth, that large quantities of costly manures, have been absolutely wasted for want of knowledge.

The farmer who discovered the magical effects of dressing with nitrate of soda, was a notable feeder of stock, and a great maker of farm yard manure. He was in fact a staunch supporter of the dung cart, but it happened that about an acre in a corner of one of his fields, was cut off from the rest of the land by a foot-path, and for the sake of ascertaining what would happen of the land in the corner were left unmanured by dung, this aid to fertility was never allowed to approach it. On one side of the foot-path, dung from a nearby farmyard was freely applied, the corner, was however despitefully used. The crops grown in that neglected corner were all re moved, and the only restorative applied for many years, consisted of an annual dressing o, two hundred weight of nitrate of soda. The result was un-

expected. The crops in the corner proved as good as those on the other parts of the field. For years the farmer took pleasure in leading his friends, along the footpath and explaining his experiment.

A more important lesson in practical farming could hardly be offered.

There is in some quarters, still a little prejudice against nitrate of soda, which has, despite abuse, often proved, as in this case, the one thing needful for a profitable crop.

But it must be remembered that this dressing wil, not bring a crop, like unto the much advertised hair restorers on any land. One farmer tried it on his turnip land covering the slope of a chalk hill, poor as to phosphates, and found it disobedient to his nitrate whip, as such a soil always is.

Nitrate of soda is a comparatively modern innovation and the farmer having found that it brought him wheat below the hill, tried it on the sandy top, and on the chalky slope, and in such cases the wheat thereon kicked—in answer to his dressings —or in plain English, blighted.

It is hardly correct to speak of nitrate of soda as a whip. It is certainly not a mere stimulant.

Neither man nor plants can live long by stimulants alone. They require food, and so far from nitrate of soda acting as a stimulant like brandy, it is a concentrated food worthy of comparison with milk and beef tea. It is true that nitrogen is the only essential element of plant food contained in nitrate of soda, and nitrogen alone would fail to nourish a plant, as starch and sugar alone would prove unsufficient to support the life of an animal. If dressings of nitrate of soda are used in a soil deficient in mineral food, either the soil will be unduly exhausted or the crop will prove unhealthy. It is a general rule, confirmed by science, that in practical farming a man may injure his own pocket by indiscreet dressings, but yet not permanently injure the land. The dislike of nitrate of soda, is pure prejudice, for the man who decries it and then uses sulphate of ammonia, which he admits is a food, is the victim of a fancy ; for the latter is no sooner sown than its conversion into nitrate commences, and the ultimate effects of the two are the same.

W. R. GILBERT.

PROF. ROBERTS ON FARMING.

NO WORN-OUT SOIL.

" People talk of worn-out soil. There is no such thing as worn-out soil. The potential wealth of mothes-earth is almost beyond computation. Within eight inches of the surface there are 3,000 lbs. of nitrogen, 4,000 lbs. of phosphoric acid, and 16,000 lbs. of potash to the acre. And still," continued Mr. Roberts, sarcastically, " although we have this enormous amount of wealth in the soil, we go to Germany to buy potash from the mines. It is about as sensible as it would be to go to the town to buy condensed milk while the cow in the stable was running milk from her udder.

" But this does not end the store of wealth. In the second eight inches below the surface there are 4,000 lbs. of nitrogen, 1,800 lbs. phosphoric acid, and 6,800 lbs. of potash, We do not even have to dig down to bring up this fertility. All we have to do is to send the roots of the clover down into the soil. We can sit on the fence and whistle while the root does the work.

WEALTH NOT AVAILABLE.

" How is it with all this fertility stored in the soil that we fail to get a full crop, and often fail to get half, a third, or even a quarter yield ? It is because sufficient plant food is not immediately available. The physical condition of the soil may be at fault, or it may be a lack of moisture. It may be because the ground is so tough or dry that the seed is not comfortable in the soil.

" Wheat is one of the most exacting crops we can grow. The average yield of

wheat in the United States this year was 14 bushels to the acre. I am ashamed to report such a yield from a country with more than half a hundred agricultural colleges and experimental stations. In order to get an average of 14 some raised 20 bushels. What will be the destiny of the hindmost man who raised six, seven or nine bushels to the acre ? The best thing that can happen to him is for the sheriff to take him from his farm and put him selling peanuts in the town, where he may make 27 1-2c. per day.

" Wheat, as I have said, is one of the most exacting crops. But how much fertility does wheat take from the ground after all ? The average crop of wheat in the United States takes less than 30 pounds of nitrogen, less than 9 1-2 pounds of phosphoric acid, and a trifle over 13 1-2 pounds of potash, or say 53 1-2 pounds of fertility all told. Why this paucity of crops when there is such an enormous wealth of fertility in the soil ? It is because this fertility is not made available.

WHAT CULTIVATION WILL DO

" At Cornell, on land that had not been manured for six years, we have raised from 26,000 to 31,500 pounds of green fodder to the acre. There, also, we have raised this year 300 bushels of potatoes, and this in the worst season for drought we have experienced for over 26 years. Why were we able to do this ? Because there the plant food in the soil was made available by cultivation.

" I was up in the Red River district this year, and found land absolutely reeking in wealth of soil, and still giving only seven or eight bushels of wheat to the acre. True, this is what they call a bad year, but man is here to correct bad years.

" It has been said that tillage is manure. It would be better to say that it may partly take the place of manure. The trouble is that we do not plow deep enough."

The reference to plowing deep caused a very large smile among disciples of the apostle of shallow cultivation.

Proceeding, Professor Roberts said " the tendency of soil is to harden so that the water and air cannot percolate through. Where land is in this condition, instead of the plant food becoming more available, it becomes less so.

BREAK THE CLODS BY UNDER-DRAINING.

" Break up the clods. It is humiliating for a man to go on year after year breaking up clods, and at the end of 60 years to have these same clods thrown on his own grave. It would be better if he put in only ten rods a year of under-draining.

" There are three great principles in farming : First, tillage ; second, tillage; third, tillage. Plow so frequently that the plow share will get hot. Keep the hot plow share going and the end will be a mulch on the surface that will make available plant food, there will be a conservation of moisture and the plant seed will be rendered comfortable.

THE MOST IMPORTANT THING OF ALL.

" To get humus in the soil is the most important element in crop production. If there is anything that should be emphasized it is this. To this end always have the ground covered with some growing crop. As soon as one crop comes off put another in its place. Have two growing at once. In our country we have practised sowing crimson clover in the corn with the last cultivation, but we found that this clover drew so much nitrogen from the sub-soil that the subsequent crop of oats was too rank in the straw. We are now sowing rape with the last cultivation of corn, as this plant does not draw nitrogen, but it does bring up phosphoric acid. In any case keep the ground covered with a crop of some kind. Sow mullen seeds, anything rather than have the land left bare.

"The whole thing boiled down is this. Put up the plow as the emblem of all that is good in agriculture. Use the plow to thoroughly pulverize the land. So many plows are made as if they were intended to go through eggs without breaking them. Another important matter is the proper application of manure. Apply thinly on the surface where plants are growing. If it is too dry, wet it. Finally see that there is a cover crop everywhere and all the time. Get an abundance of humus into the surface of the soil, and have the surface thoroughly pulverized."

SHALLOW OR DEEP PLOWING.

Wm. Rennie, ex-farm superintendent, agreed with Prof. Roberts that there was no such thing as a worn-out soil. "The sub-soil," said he, "is as rich as it ever was. We, here, do not agree with the view expressed by Prof. Roberts of bringing this sub-soil to the surface. We prefer to let the roots of the clover bring the fertility from the lower to the upper soil. We use one crop to bring up food for another crop, and the results of this system have been marvellous. Prof. Harrison has told us there are millions of germs in the surface soil performing work of the greatest benefit to man. I am afraid Prof. Harrison would shed tears if we buried these millions of germs and brought the sub-soil to the top. In England, I am told, they are getting best results from their steam plows by not plowing with them. They use these to loosen the sub-soil to a depth of 20 inches or more, but do not bring this sub-soil to the top. They allow the air to get down below the surface, but they keep the surface soil always at the top."

Prof. Roberts said he did not advocate bringing up the sub-soil from the bottom. In the United States, however, he said, too many farmers plowed to a depth of 4 inches, where it would be better to plow to a depth of 8 to 10 inches. "I would rather have an inch of cream than half an inch of cream. I would rather have 8 or 10 inches of good soil on the surface than 4 inches. Still, it is not wise to turn the milk pan upside down."

W. L. S.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

(The first two paragraphs, should have appeared in the last number).

We must contribute our little mite, in a few words in praise of our dear Queen, who has just been called home, after a long and lovely reign, which her subjects would have gladly lengthened could they have done so. Nobody ever wearied in hearing of the continued good health and doings of Victoria the Good.

None could say she was exempt from the trials of her poorest subjects which she bore with courage. But age crept on and with it came many and severe tests of her strength.

Thick and fast they came till a nation woke up to the fact one day that the dear Queen's work was done.

It was a fit ending to a beautiful life. She lay on her bed for a few dreamy days surrounded by her loved ones, woke up at lucid intervals, and knew and greeted them with a loving smile. Thus her gentle spirit passed away, into the great here after.

VISITING THE SICK.

We are now passing through a visitation of contagious disease, and it would be well if people showed a little care in visiting, where there is a doubtful case of sickness. Let the doctor decide first, it is a very dangerous thing to visit where there might be the least suspicion of contagion. It is not only the visitor who might suffer but the possibility of carrying it home or to other families, and this is done so often that the wonder is, why people will still crowd to a sick

room, a call, at a house to enquire after the sick person is all that is needed, till time shows what the malady is.

I well remember hearing of the great suffering of a kind woman, who volunteered to help a neighbour during a crisis like the present, she carried the contagion home and lost three grand children by it. Things are mending now as the law has taken the matter up, and the isolation of the rich, as well as the poor, is now insisted upon, as it is the one and only way to stamp out a calamity like the present.

There is plenty of trouble in the world without searching for it.

ABOUT FASHIONS.

Trailing shirts are no longer worn in the streets by sensible people, black has been most fashionable this winter and as it is so very becoming to so many people the more so when rich trimmings are put on in gold, silver, or jet and to those who have not good taste in choosing colours it is a great boon, and just now it is the dress, of all those who wish to show respect to the dead Queen. A middle aged woman now dresses about the same as her daughters provided she is of a slim figure, of course these are many little ornaments and trimmings which the daughters can wear, but would be most inappropriate for the mother, everything must be made to suit the wearer.

For stout people the cut of a dress is of the greatest importance.

A tight fitting waist is to be avoided by them as it shows off the figure too clearly, one longer in the front than back is most suitable.

Trimmings should be put on in lines to hide the deep curve from the bust to waist line.

If a belt is worn it should be shaped, and pointed an inch or so beyond the waist line.

The skirt must be cut to fall straight from the waist to the hem, and not allowed to pull round the hips and thus drag over the figure.

We are still deprived of our comfortable pocket; there is no place for it; handbags are now worn attached to the waist, few people like them as they wobble about at every movement of the wearer.

BAD TEMPER.

If bad tempers could be easily brought under the control of the owners, it would add much to their comfort in life.

It is well to sleep upon hot words spoken in the heat of temper, they will look so very different the next morning, so much so indeed as to make the user of them thankful that they had the courage to do so and might save to themselves the friendship of many dear to them.

The uneducated are apt to use words which to a sensitive mind will appear very insulting, and will often sting sharply; but when given a moment's thought will look as the words of those who spoke as they knew best, in utter ignorance of any insulting meaning, all educated minds coming in contact with the vulgar rich suffer deeply from this very fact.

The people who deserve the deepest sympathy, are those whose nerves are strung to such a pitch that a breath of wind almost disturbs them.

It is said of the learned Carlyle that his nervous system, coupled with a very bad temper, made him very trying at times; then he said bitter, sharp things to his patient wife, for what could be worse to a sensitive, cultured, woman when told that the click of her knitting-needles annoyed him, then, that her breathing disturbed him, and last but worst of all, her presence was objectionable to him.

All his knowledge had not taught him the true courtesies of life, let alone the buty he owed to his good wife, who paid dearly for that honour.

Indigestion causes many a fit of ill temper.

Sydney Smith, mentions in his writings, "Soup and fish explain half the emotions of life."

Gluttony and drinking will explain much ill-temper.

However carefully one watches oneself, offences are given, and if we learn to bear them with courage all will be well, we must learn to shut the door on all outside grievances they will soon be forgotten in the bosom of the family.

If ill temper is caused by weariness of body, rest will be found the best cure ; a change of occupation will send one back to the former worry with quite a different feeling, ten minutes that with a friend, or a turn at the dumb-bells will relieve body and mind.

A woman should change any work which tends to set up her nerves, more work will thus be finished than if she had plodded on and worried over one thing for hours, and she will be all the happier for it.

Variety in work, as well as in play, is the spice of life.

FRESHWATER FISH RECIPES.

For larded pike take a moderate sized fish, and , having skinned and cleaned it, lard it plentifully with strips of bacon, and sprinkle it with salt. The fish may be straight, or twisted with its tail in its mouth, and baked thus:—Melt some good lard in a baking dish, put in the fish, cover it with a lid, stand it over a fire or in a hot oven, and bake it a golden brown, basting it at intervals with the hot fat. Serve with a brown caper or sardine sauce flavoured with lemon.

Stewed pigeons make a delicious entrée. Pick and draw four pigeons. Soak them for a couple of hours in a pint of claret. Then fill them with sausage meat, put them into a stewpan with the wine in which they were soaked and a blade of mace. Pour in sufficient strong stock to cover them. Let them stew gently for a hour, then cut them in quarters, and lay them in a pie dish with a slice of butter on each piece, and put in a brisk oven, Skim off any fat that is on the surface of the gravy, and reduce it by quick boiling to rather more than one-half. Thicken it with a dessert-spoonful of flour and one ounce and a-half of butter. Return the pigeons to it, and warm them up in it until the sauce has reached every part. Then arrange them in a silver dish, and pour the sauce around them. Ingredients: Four pigeons, one pint of claret, sausage meat, strong stock, two ounces of butter, a little mace, and one dessert-spoonful of flour.

Galantine of rabbit.—Well wash and cut one or two young rabbits into joints. Put in a stewpan with an onion, a stick of celery, a carrot, a bunch of herbs, and salt and pepper ; add water enough to just cover and stew gently until the meat leaves the bones. Then remove the meat, and cut it into pieces one or two inches square, leaving out all skin, gristle and bone. Reserve the meat on a dish ; strain the liquor through a fine sieve that it may be quite clear, colour it a nice brown, and add to it half an ounce of gelatine (previously soaked in cold water), flavour with the juice of half a lemon and a little piquant sauce, boil it slowly until quite clear, then cool it. Arrange the pieces of bacon, slices of hard-boiled egg and minced parsley, in a fluted mould. Add a little liquor by degrees as the mould is being filled. When full place a small piece of wood that will nearly fit the top over all, put a weight on the wood, and place in the cold to set solid. Turn out on dish and cut down, not across.

Stewed tripe:—Stew a pound and a half of tripe with six good-sized onions gently in half a pint of water for two hours, then pour off the greater part of the liquor, and add a dessert spoonful of mustard, the same quantity of flour, and half a pint of milk.

THE PROPER WAY THE REST.

Every one should ask himself how many hours a day he spends curled on up a downy couch in a posture that is utterly at variance with all laws laid down by science,

The lungs work with greater deliberation during the period of sleep, and unconsciously the arms are raised above the head to admit of longer, deeper inhalations. The heart action then becomes bad, blood is driven from the arms and sent to the head, the nerves are stretched and a temporary paralysis is liable to be produced, characterized by a prickly, uncomfortable sensation.

Complete relaxation means that gentle inclination which requires a bed of moderate softness and a small pillow. The head should be raised ever so little.

Do not sleep perfectly flat on the back without a pillow; the muscles of the throat relax, the jaw drops, and the result is, that disturber of other people's sweet dreams—a snore.

The food enters the stomach at the left side, passing out at the right, and when one is lying on the left side this outgoing end is raised up, seriously interfering with the workings of this much abused pear shaped bag.

When lying on the right side, the heart is free from pressure and its action unhindered.

HOUSEHOLD HINTS.

Add one or two tablespoonfuls of sugar to strong turnips when cooking.

Canned goods of all kinds should be emptied from the cans as soon as they are opened. They should never on any account be left to stand in the cans.

Use boiling water when it first boils, or the gases escape, and the water becomes flat.

Brass kettles should be kept clean with salt and vinegar in order to avoid verdigris poison.

Avoid banging oven doors while baking. It is the cause of many cakes and pastry being heavy.

Dried orange peel allowed to smolder on a piece of redhot iron or on an old shovel will kill any bad odor in existence and leave a fragant one instead.

Salt spread on the oven bottom under a baking pan will prevent scorching. Asbestos mats are also good.

The Garden and Orchard.

(Conducted by Mr Geo Moore).

NITRATE OF SODA.

I notice in the French edition of the "Journal of Agriculture," Jan. 7th, the description of a field experiment with oats conducted by Mr. Joseph W. Boisvert of the Agricultural Club, Shawinigan, St. Maurice county. Such experiments are most useful and important and show the use of the Farmer's Club when conducted with spirit and on the right lines. Would that our English Clubs would "go and do likewise."

The experiment also proves, by actual demonstration, that there is no more economical chemical manure for oats than nitrate of soda, and no doubt the same remark is applicable to almost all crops, a fact that cannot be too frequently called to mind and acted upon, in view of cheapness and easy application.

FLASH LIGHTS.

The love of gardening is an expression of refined taste and sentiment.

The garden we cultivate ourselves is of deeper interest than that of others.

The cottager takes more pleasure in his little garden-plot than the millionnaire in his gay and extensive parterre, especially if the latter is merely made for ostentatious display.

There is nothing new in the fundamentals of cultivation, the novelties are in their elaboration and adaptation.

The easier a tree or plant can be grown, the more likely is it to be neglected;

hence, our apple-orchards, in many cases, are ruined for want of a little attention, and our small fruit patches choked with weeds and vermin.

It is always desirable to purchase nursery stock from trustworthy neighbouring nurseryman, as he will know, and grow, only that which is suitable to the district.

You may as well try to grow a banana as an apple of a variety unsuited to your soil and climate.

Never apply manure to hardy trees or bushes late in the summer. Applied at that time, it stimulates growth at the wrong season, and induces the formation of succulent shoots, which have not time to ripen before frost and are consequently winter killed; and the injury does not end there, but the whole tree is weakened constitutionally.

THE FRUIT TRADE OF 1900

To the Editor of the "Journal of Agriculture."

Dear Sir,—In notes of mine re the state of the crops in September. I had occasion to cha,lenge the statement of an apple dealer of Toronto, Eben James, as to the quantity of fruit available for shipment during last autumn. I said I thought he was either misinformed, or he was trying to depress the market; and that time would tell whether his expectations or mine would be fulfilled. My statement was that the crop of 1900 would not be anywhere in comparison with 1896—or 1898. The shipments for the past 4 years from the port of Montreal are before me. I am somewhat surprised at the small shipments for last year, only a few hundred barrels more than 1899, and as far as the money returns for the two years, there is a vast difference in favour of the latter year. I can account somewhat for part of the small shipments: the price being so low that many people did not sell their full crop as it did not pay to go to the expense of paying a higher price than usual for barrels—and not to be sure of getting very much for the fruit, so they thought there was very little chance of clearing themselves or, in fact of getting pay for their time and trouble, not to speak of the apples at all: while in 1899 the prices of apples were high and people gathered up everything, wind falls and all, in some sections and shipped them across the water.

There were hundreds of barrels went over that should not have left Canada under any consideration—slacks, rotten apples everything in fact, were thought to be good enough to fill a contract—I know what I am saying, as I was in Montreal for some two months during the busiest of the season, and was somewhat surprised at what was going on. If the people here in Canada want to get a name for their fruit they will have to change the system of sending fruit in this haphazard way.

The Hon. Sydney Fisher and Prof Robertson have been trying to make a change and suggest a remedy but these apple. kings are very much put out, they think they know it all, and are very wrathy at times. One of the suggestion of the Hon. Minister of Agriculture is a uniform barrel or package and some sort of inspection of the fruit before leaving Canada, and what is not first class to be kept here and not injure the market for good fruit. His efforts have not been successful in either case. When the bill comes up in Parliament there are enough members against it because their constituents have to be consulted and the bill is killed usually in committee; that is, t never comes before the house for a division. Nevertheless, I do hope something will be done before our good name gets too badly tarnished; just now, everything from Canada goes like wild-fire, but great care must be taken that too great liberty be not taken with the English people, or our articles of commerce may become a drug on the market and a reproach to our good name. Packers should endeavor as far as possible to put only one quality of fruit in the same barrel, and only one kind also. Do not put first class fruit at either

end of the barrel and trash in the middle. Another fault made; what is termed a "slack"; i. e., not quite enough fruit put in before heading up. On the other hand too much must not be put in, as in that case, the bottom rows are all bruised and then rot sets in. There are not many subject to the latter fault. although sometime it happens.

In Nova Scotia, apples for shipment are headed in with a pulp circle just the size of the end of the barrel—with the grower's or packer's name on it: in this way buyers on the other side know to whom to apply at once if every thing is not as it should be: very often the blame for bad sales and trouble generally, is the man on the other side. While it is possible to find some dishonest salesmen, still there are some honest ones; but they are handicapped with so much worthless fruit depressing the market at all times.

As I said before, a change from the present state of things will have to be made, and that very soon if we are to keep our place in the markets of Great Britain for our apples—in fact anything we have to send over should be worthy of this grand glorious Dominion of ours.

Yours very truly,
PETER MACFARLANE.

January 29th, 1901.

The Dairy.

THE HAND SEPARATOR IN CONNECTION WITH CREAMERIES.

At length the hand separator seems to be growing in favour with the farming community, and much do I regret it, but I am in no small measure consoled by the thought, that this innovation will be short lived for reasons which appear later in this article.

Various causes, have together tended to hasten the introduction of this system, which, in countries where it has entirely superseded the whole-milk plan, is called the cream-gathering system. Thus far, the adoption of this system in the Province of Quebec has not become universal, and in many localities where the hand-separator has met with a ready sale, it has not reached the cream-gathering state, the only change being that the farmers haul their cream to the creamery instead of their whole-milk. The benefit to the farmer of course, is, that the time spent at the creamery is lessened, the skim-milk is retained for his live stock in a more appetizing condition, and as his load to the creamery is lighter there is less wear and tear both of horse and waggon. In course of time, no doubt, in these localities the cream-gathering system will come into vogue, that is the farmer will still further have his work lessened by his cream being called for and gathered at his own door. One other advantage to the farmer I recognize, in the fact, that he will find it more convenient to keep his cream than his whole-milk, the former being of far less bulk.

But it does not follow, because the farmer gains these immediate advantages, that the hand-separator system will be most to his advantage in the long run. Are we not all rather too apt to snatch at any momemtary or temporary benefits, instead of looking ahead to consider how best we might realize some permanent good? The average farmer who buys a hand-separator, I am convinced, only thinks of the advantages which I have enumerated, and considers it nobody's business but his own.

But the Dairy Business is a National Institution, it is directed and fostered by the Government, both Dominion and Provincial, and I consider it everybody's business to detect and draw attention to any innovation simply for personal or selfish motives.

It is my opinion, that the unlimited development of the Dairy Industry, in this Province, in fact, throughout the whole Dominion of Canada, must be based entirely on the regulated production of a uniformly fine quality of butter and cheese. By 'regulated production, I mean, that

we must produce as much as possible when it is most profitable to do so ; our produce must arrive on the market, wherever that market may be, at the times when there is most demand for it, and it must be of such quality not to suffer from competition.

As I stated at the beginning of this article, I note the introduction of the hand-separator into the creamery business with regret.

The system, even when brought to the highest state of perfection, is not conducive to the production of a uniformly fine quality of butter. The reasons are obvious enough. It cannot be expected that fifty to a hundred separators, mostly in the hands of unskilled operators, will produce cream of as uniform consistency as that produced from one or two separators, operated by experts, at one or two central locations. It is impossible for cream, from such a quantity of different sources, to arrive at the creamery in as uniformly good condition, with regard to flavour, as that obtained by the creamery separator from milk from the same sources. Cream is very much more susceptible to contamination than milk, and the ultimate quality of the butter, is not at all likely to be improved by the sources of such possible contamination being extremely varied, from the roots in the cellar for instance, to the pig-swill in the shed. Besides these objections, it requires an expert to run a separator with the best results, and it cannot be expected that as many as fifty per cent of hand separator buying farmers will ever become so. It is more than likely that very many, when the novelty has worn off will promote the hired boy to do the job, and then won't the bill for repairs and time wasted mount up, while the monthly returns gradually diminish ! It certainly will be most alarming. Then, —good-bye separator. Looking at the question from another standpoint, I suppose seventy-five patrons would pay seven thousand five hundred dollars for seventy-five separators, why ! with this amount they could build an up-to-date creamery on the co-operative plan, and have four thousand five hundred dollars left. They would also eventually have the satisfaction of realizing more money for a better quality of butter.

If by any chance, one of my readers may be contemplating the purchase of a farm-separator, hand or power, to save expense as he thinks, or time, handling of the milk, or for any other reason, let him hesitate and think the matter well over first. Ask yourself, how will this investment of one hundred dollars pay me ? Shall I be able to depend on myself or some other responsible person to run the machine daily and become thoroughly acquainted with it ? what sort of care will it require ? how much time will be required to be given to it daily ? are there any running expenses ? how long will it last ? have I as good a place to keep my cream under cover in a pure atmosphere as I have for my milk ? If a satisfactory solution to all these questions presents itself to you, then the best thing to do is to buy, the " proof of the pudding is in the eating," as a rule too much causes—billiousness.

I very much fear however, that many farmers are more inclined to consider thus: —How small amount can I get any sort of separator for ? I wonder if the agent can guarantee that the hired girl can run it ? Will that plaguey buttermaker let me take my cream to the creamery only once a week ?

For the reasons I have mentioned, I consider this cream-gathering system a menace to the Dairy Industry of this Province : it is a step backward.

Anything that impedes our onward march towards supremacy in the quality of our dairy products, must never be countenanced for one moment. Our farmers have not learned yet how to keep their milk and deliver it in proper condition at the factories, how much less should we expect them to keep their cream as it ought to be kept.

I know very well the numerous agents for these machines point to the claimed

success which the system has met with, in some of the American States. It must be remembered however, that the majority of the creameries in these States cater chiefly to a local market, and only a small percentage of their output finds its way out of the country. We can take it for granted, on this account, that the local markets proving more remunerative, the produce of the creameries in question, is manufactured, for the most part, to meet the requirements of these markets ; it is also quite comprehensible, that those most essential conditions of the raw-material (milk) and of its manufacture which are necessary for the preparation of that very fine quality of butter which our only external market, the English market, requires, are not of vital importance in producing an article for local and immidiate consumption.

We must not not lose sight of the fact, that all our present endeavours must be concentrated upon the manufacturing of uniformly fine dairy products, and certainly no system should be recognized as beneficial to the dairy-farming community, which is advantageous in time or labour saving alone, at the expense of the quality or the uniformity of the finished product.

There is an appointed place for the hand-separator or small power separator. On the private dairy farm. This is where it affords a golden opportunity to any industrious and intelligent man who loves his cows, and knows how to get the most profit out of them. A man who has had some education in buttermaking and marketing his produce, who thoroughly understands up-to-date feeding, and knows cows as he knows his own children, will coin money by means of a hand-separator, and in a suitable locality should make the best butter in the world.

But the hand-separator system which is used simply as a means to save a little time and a little necessary trouble, is a treacherous parasite, preying on the vitals of our Dairy Industry, and like the mistletoe on the oak, perhaps adds to its beauty in some people's estimation, but eventually saps its strength.

H. WESTON PARRY.

January 22nd, 1901.

THE "MELOTTE" CREAM SEPARATOR.

To the Editor of the Journal of Agriculture:—

Dear Sir,

Our attention has been drawn to an interesting article on the above machine in your January issue. In the main the article is correct. There are two points only upon which we ask your kind permission to make some explanation.

First : the small power required to turn the "Melotte" is due to the mechanical arrangement, which so attracted the admiration of the judges at the Royal Agricultural Society's show and drew from them the words of praise, which you quote in your article, and not the speed of the separator. This beautiful arrangement consists in the suspension of the bowl from a spindle turning entirely on hardened steel ball bearings and to the absence of all worn wheels in the mechanism. This reduces friction so materially that the "Melotte" requires only about two-thirds of the power necessary with any other make of separator.

The other point is one of considerable interest to dairy farmers, viz : that it is not necessary to send to the "Melotte" Separator Sales Co., of Bristol, to procure a "Melotte" Separator. We are the selling agents in Montreal and we keep a large supply of machines always on hand. We make a practice also of allowing farmers to try the machines in their own dairies before purchasing them.

Yours truly,

R. A. LISTER & CO. LTD.,

Jan. 11 1201. 579 St. Paul St., Montreal

The Poultry-Yard.

DRINKING FOUNTAINS.

One of the difficult problems for the poultryman to solve is kow to provide easily pure, fresh water for his fowls. Many patent fountains which are on the market are automatic and keep before the fowls a certain quantity of water. Under certain conditions these fountains serve an admirable purpose. Under more adverse conditions many of these patent contrivances fail to give satisfaction for the simple reason that it is impossible to keep them clean. If fowls were fed only whole grain and the weather was always cool, it would be a comparatively easy matter to provide satisfactory automatic drinking fountains, but as soft food forms a considerable portion of the diet for laying hens and fattening fowls, these fountains are necessarily more or less fouled and in warm weather soon become unfit for use as drinking fountains on account of the tainted water and disagreable odor.

A simple, wholesome arrangement may

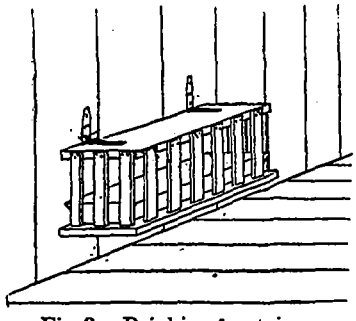

Fig. 3.—Drinking fountains.

be made as follows : Place an ordinary milk pan on a block or shallow box, the top of which shall be 4 or 5 inches from the floor. The water or milk to be drunk by the fowl is to be placed in this pan. Over the pan is placed a board cover supported on pieces of lath about 8 inches long, nailed to the cover so that they are about 2 inches apart, the lower ends resting upon the box which forms the support of the pan. In order to drink from the pans it will be necessary for the fowls to insert their heads between these strips of lath. The cover over the pan and the strips of lath at the sides prevent the fowl from fouling the water in any manner, except in the act of drinking. Where drinking pans of this kind are used, it is very easy to cleanse and scald them with hot water as occasion demands. This arrangement can be carried a little further by placing a pan, or, what would be still better, a long narrow dish, something like a tin bread tray, on a low shelf a few inches from the floor, and hinging the cover to one side of the poultry house so that it can be tipped up in front for the removal of the dish or for filling it with water (See Fig.) whatever device is used, it must be easily cleaned and of free access to the fowls at all times.

STARTING THE INCUBATOR.

As this is the season when incubators are run, a few points on how to operate them might interest the novice.

After getting an incubator, run it empty for a few days before putting in eggs ; try and see if you can run it empty first, then, after you fully undirstand how to maintain an even temperature, it wil, be safe to put in half the capacity of eggs when the temperature is 102 with the thermometer lying on its side on the tray ; remember the lamp has considerable to do with an even temperature ; should the lamp turn too high a flame it will cause the machine to run irregularly. It is not necessary to keep the regulator too active; have the lamp to burn slightly in excess of what is necessary to maintain the proper heat of the egg chamber—then, in the case of a fall of the temperature of the room in which the incubator is run, the excess will then be used. Should the room become warmer, the regulator will open the valve and let the heat escape, thus maintaining an even temperature unless the flame is turned extremely high, in which case there is no regulator made that will keep the heat down.

I have seen incubators opened with the lamp burning as high a flame as possible without smoking, and the regulator put to its extreme capacity with the heat gradually rising, the operator complaining that the regulator wae worthless. What folly ; is it any wonder that some people don't succeed with incubators ? The first thing they do when they get an incubator is to set it up and light the lamp ; then as soon as the heat is up, fill it with eggs; some put the eggs in as soon as they put the lamp in place. A man sent for me to come and tell him what was the matter with his incubator. He could not get the heat up above 90 degrees ; he had got the incubator at 10 a.m., and it was 4 p.m. when I got to his place. He took me in and showed me the incubator ; it was a 100-egg size to my astonishment. I saw he had the machine full of eggs. The lamp was burning as high as it dare. The regulator was drawn as tight as it could get. I asked him when he put in the eggs. He said right away when the machine was set up.

I told him he should have run the machine empty for a few days before putting in the eggs. He seemed surprised at what I told him. Why, said he, the manufacturers claim their machines are self,regulating. "That is all very true," said I, "yet you must adjust the regulator to the proper degree of heat first ; then if the lamp is properly cared for, the regulator will keep the heat right until the embryo chick or duck is about ten days old, and begins to throw off heat caused by friction of the rapid pulsation going on inside of the eggs."

After this stage it is no longer a question of the temperature of the egg chamber ; it is the eggs that you must look to, as the animal heat will increase daily after the tenth day ; the greater the number of fertile eggs in the machine the more the heat will increase ; in keeping with this you must gauge the heat to its proper point.

I have always had the best results by running at 102 the first week, and 103 for the rest of the hatch. Always keep the thermometer between two fertile eggs with the bulb touching both eggs just above the centre. These eggs should be examined daily. A dead embryo on the fourteenth day is two degrees lower than a live one ; and on the nineteenth day, it is four degrees cooler. This should impress you with the importance of this matter. If you neglect these points you must expect to fail.

THE FRENCH BREEDS.

The most appreciated poultry in the Paris market is undoubtedly the Houdan, easily known, even when plucked, by the five toes, and by their legs, which are of a pinky hue splashed with a grayish blue. It is an excellent bird, with a quick development, produces large white eggs, which are preferable to those of the Cochin and its crosses, which have a yellow tint, the white being preferred in the Paris markets. It may be claimed that Houdans when well fed and in comparative liberty are at four months old as large as the parents. In this country Houdans have proved to be the hardiest birds of the French breeds. They do not sit, which is a defect inherent in their quality of being good layers. There is sold annually in the markets of Houdan, Dreup and Nogent-le-Roy about six million francs' worth of fat poultry of this breed (nearly twelve hundred thousand dollars). The Crevecœur is also a valuable bird. The flesh is very delicate ; it grows rapidly and fattens easily ; the eggs are very large, of an average weight of two and one-fourth ounces each. At an adult age this bird weighs over nine pounds. At two years old some weigh ten pounds and over. It can be put up to fatten at three months old, and at the end of a fortnight is fit for the table. At five months this bird attains its full develqpment, and at that age it weighs about seven or eight pounds, and sometimes more. La Fleche is not so precocious as the former breeds. At the yearly exhibition in Paris they were ad-

mired on account of the quality of flesh and fattening propensities. It is slower in growth ; and is therefore offered in the market when other breeds have disappeared. Of all the French breeds it is the longest in legs. Capons and pullets of this breed fatten well at from nine to eleven months, when they obtain the maximum of their growth.

A fat pullet weighs from eight to ten pounds, and the capons go beyond sixteen pounds. Their flesh is very fine and delicate in taste.

The Grazier and Breeder.

FEEDING CATTLE FOR EXPORT.

Answers by Simpson Rennie, Milliken, Ont.

Q. Where do you buy your feeders ?

A. Of late years I usually buy on Toronto market.

Q. What breeds do you prefer ?

A. The Shorthorn, Shorthorn grade or Polled Angus.

Q. What do you think of the Holsteins for feeding ?

A. They are not suitable ; they are hard to feed, are not of a fleshy make, and I am informed the beef is not of good quality.

Q. At what age do you prefer them ?

A. The younger the better, providing they weigh over 1,000 pounds.

Q. What time do you begin to feed ?

A. Usually by the 1st of December.

Q. What do you do to kill lice ?

A. As soon as the cattle are put in the stable, shear the long hair of their tails, along the back and around the horns, then apply a mixture of spirits of turpentine and oil, one-half pint to the gallon of oil.

Q. What kind of oil do you use ?

A. I use the Champion black oil an account of it being cheap, but nearly any kind will answer the purpose.

Q. Do you turn your feeding cattle out in winter for exercise and water ?

A. I do not. They should be kept quiet and get water in the stable.

Q. What ration do you feed ?

A. I usually feed on an average nine lbs. mixed meal, thirty pounds roots and twelve pounds clover hay.

Q. Do you cut hay and pulp roots ?

A. I do not. When all the food is of good quality it is not necessary.

Q. How often do you feed ?

A. I feed three times a day, and divide the above ration into three parts. First put in the roots, then put in the meal, which should be mixed with a little clean wheat chaff, on top. Put the hay (long) in the rack, and the work is done.

Q. How long do you feed ?

A. Usually about 170 days.

Q. What would you consider a fair gain in that time ?

A. About 300 pounds, although we frequently get a greater gain from well-bred animals.

"Farming."

Note.—From a discussion on the feeding of cattle in the Farmers' Institute Report for 1899-1900, just ready for distribution.

The Horse.

ALBERTA HORSES TO THE FRONT.

There was much adverse criticism of the class of horses purchassed in Alberta by Dr McEachran as mounts for the contingent raised by Lord Stratcona for service in South Africa. Dr. McEachran has said nothing in public in defence of his choice of horses, but we know that he had good reasons for waiting his time to speak. The horses speak for him now, and say volumes for the Alberta-raised horses and incidentally for the man who chose them.

Lt.-Col. Steele, well-known throughout the west, sends Dr. McEachran his opinion of the horses after severe service in the field, and such an opinion should do much to advance the scheme for the establishment of a remount purchasing depot. The following are the letters :—

Paardekop, 6th Aug., 1900.

My dear Dr. McEachran :—

We are with General Buller and have been continually marching and having occasional "scraps" since we left Newcastle some two months ago. The regiment is in fine shape and highly thought of by those in command. I saw in the papers some attacks upon the horses bought by you. I regret it very much and write you to-day on the subject.

I wish to assure you that the horses are the best in this army. Two squadron had the 450 spared and they had to do all the hard scouting and advance guard work, while C squadron with the Argentines had to be spared for a long time. We have lost very few Canadians and have changed out other remounts several.

We go out to assault a strong position on which are two guns and two thousand men. I hope we shall have good luck there, but we must suffer severely, no doubt. Sir Redvers Buller will be in command, and if we succeed our march will be continued to the railway from Pretoria to Delagoa Bay and assist to corner up a good many. We have had several men killed, wounded and missing. also about 20 horses shot under the riders. One of your big Montreal horses got shot in the abdomen, left side, but did not mind it. We had quite a fight that day, but we were lucky in having none killed, but we had several wounded.

(Signed) B. B. STEELE

Strathcona Horse,

Paardekop, Aug. 6th, 1900.

Dear Dr. McEachran :—

Since the 1st June the regiment has marched something over 700 miles, and the Canadian horses which you purchased have stood it very well. It is the opinion of officers and others who have looked at the horses, that they are the best that have been imported into the country, and outside of the native bred pony, best fitted for the work.

We have been constantly on the march since joining General Buller's forces, and although we have not been in any real engagement, the men have been exposed to sniping and have occasionally met the enemy in considerable force with guns. On all occasions the work was done to my satisfaction, and Lord Dundonald, commanding the 3rd Mounted Brigade, to which we are attached, has told me that he thinks the corps a very fine one.

We are halted for a couple of days here, and will join in General Buller's advance northward to-morrow.

The following letter explains itself :—

Twyfelaar, 20th Aug., 1900.

Dr. McEachran, Montreal, Canada.

Sir—Perhaps you noticed in the Montreal Herald a letter from me re horses bought in Canada for Strathcona's Horse, which was not to their credit. I wrote that letter privately and not for publication, also at a time when the horses were at their worst, but since I have reason to doubt my decision on that occasion, as the horses bought by you have proved themselves vastly superior to any remounts since secured and also show that they are the equals of most horses that I have handled in the N. W. T.

(Signed) A. C. GRABILL, Sergt.

Writing to a friend in Southern Alberta, Lt.-Col. Steele says :—

"We had a march of 700 miles and I am pleased to say that the Alberta horses stood the hardships well. Of the 450 which we started with every one came through in good shape except a few which were wounded by sniping, whereas the Argentine horses we got for remounts had to be replaced several times. The Alberta horses are the best ever landed in South Africa for this week (except it be the native ponies) and the officers and generals think them the best horses in this army."

Lord Stracona on his return to Canada recently, in an interview at Montreal, said :—

"I have been vastly pleased with the way in which the Strathcona Horse had distinguished themselves in the field. The troop had proved a very fine body of men, and he had been proud of them ever since they had left for South Africa. There is another thing, of which I am very proud, and that is the fine stand the Canadian horses took in the hardships of the contest. I have it on excellent authority, and from many sources, that the horses which were shipped from the Canadian North-west to South Africa have proved themselves to be the finest class of horses used there by the British army. This will do Canada and Canadian trade an immense amount of good in the future. I have no doubt that the advertisement Canada has received in connection with the sending of the contingents to South Africa will prove of the most substantial and material benefit. Why, the knowledge Englishmen have gained about Canada has been something enormous, and must tend to largely increase her trade in the future. It is dissemination of knowledge that must prove of enormous value in inducing capital to come to this country for investment.

PONIES.

(London 'Spectator.')

Sir Walter Gilbey, one of the best judges of domestic animals in England, has published two elegant little books on ponies for use in war—'Small horses in warfare' and 'Ponies, past and present' (Vinton & Co., 2s. each). He is the owner of some of the best shire horses in England, and his hackney champion has just taken the prize as the finest allround horse in the world at the Paris exhibition, where the cosmopolitan crowd of Italians, French, Russians Hungarians and the rest, whose own horses had been beaten rose spontaneously to their feet, waving hats and handkerchiefs and shouting 'Encore' in four different languages, as the finest harness horse ever seen passed them in all the pride and display of its incomparable action. But the possession which many people envy more than this is his pony 'Rosewater,' the most famous sire of polo ponies in the world.

Speaking with the practical authority guaranted by these successes as a breeder of horses of all sizes, the author is convinced that for the use of our mounted infantery we must have a special breed of war ponies, or small horses. A cross of Arab blood with our native moor and forest ponies might, he thinks, give us the ideal animal for this kind of work. This view, which is probably correct, assumes that a pony is something different from a horse, and that it has qualities or capabilities of a kind which it can impart to the larger animal by crossing. In other words, a pony is not merely a small horse, which can subsist on rather less food than the larger breeds, but an animal in which a greater degree proportionately of strength, constitution, endurance, and perhaps intelligence, is concentrated and inherited. Ignorance, which is defined at Grimsby as not to know a dab from a flounder, is supposed at Horncastle Fair to be embodied in the man who does not know a horse from a pony. Yet the question 'What is a pony?' meets with no certain answer. Those who go by the card take the mere rule of height, and say that any animal under fourteen hands two inches is a pony. That is the maximum height allowed in polo matches in England. In India it is thirtee hands three inches. But many polo ponies are simply small thoroughbreds, with very little difference in points between them and the racing thoroughbred except that they are older and more developed. The ideal polo pony has been defined as 'a miniature thoroughbred steeplechaser,' which is not a pony at all except that it can carry a heavier man for its size than a racehorse. Perhaps the best means of forming an independent idea of what it is that confers on the pony the distinction of representing a different type, physically as well as mentally, is to compare a number of por-

traits (photographs in profile) of the winning ponies of various kinds, from the real ponies used for polo by lightweights, such as the Cairo ponies, which are not miniature. Arabs, to the tiny Shetland winner at the last Crystal Palace Show, which only measures thirty-one and a half inches at the shoulder, the property of Lord Hopetoun's sisters, the Ladies E. and D. Hope. A distinguishing mark of the pony is its head, which is usually shorter from the eye to the nose, and broader between the eyes, than that of the horse. The profile also shows a difference. In the horse the line of forehead and nose is continuous, giving the expression which is meant when human beings are inelegantly said to have a face like a horse. The pony's nose has usually a slight depression below the eyes, where it leaves the forehead. The nose is sometimes almost a 'turn-up,' with any amount of cheerful expression about it. Arab horses have often the same type of nose. Some thoroughbreds show the same profile—'La Fleche' has a regular pony nose—and many of the Suffolk Punches, which are the most pony-like of big horses owing to their short legs, have the same. Ponies, as a class, are more compact in proportion to their size than horses, and have shorter legs. The only point against them is that when not carefully bred they tend to revert to the wild type, and become less suitable for riding. Their shoulders become lower and thicker. Pony shoulders are, in fact, rather a weak point.

Looking to nature for a match to the average pony, we find that he has very many of the points of the primitive horse. Burchell's Zebra, the commonest species of of South Africa, has many of the good points of the pony, and also most of the bad ones. He is short in the back, medium-sized, but strong, with a regular pony head and profile. But he has a bad shoulder, and a short stride. All zebras are sure-footed in rough ground, as ponies are, and like ponies they can gallop both up and down steep and mountainous slopes. But the ponies represent a later development than the zebras, and better naturals powers. As animals are not really progressive, though by artificial selection their physique or mental capacity can be improved in certain directions, the ponies have often retained much that the horses have lost. The mare of an Arab chief, which lives daily with its master, is fed on little wholesome food, and exists in nearly natural conditions, retains the qualities of endurance and intelligence, augmented by the purity of its blood, and by slighty increased size. But the artificially enlarged horse of Europe, which spends its life in the stable or in harness, and supports its increased size by consuming greater quantities of artificial food, loses constitution, endurance and brains. It is not fair to our horses to compare them with the sharp-witted little ponies, because they are never given a chance to think for themselves. The tendency for generations has been to make them into machines. That many of them retain the capacity for thinking and learning is proved by their cleverness when any one takes the trouble to teach them. But most, for want of teaching, develop the weakness of ignorance, such as panic, excitability, helplessness in danger, and a total inability to understand anything which is new and strange. But in the matter of endurance and constitution the ponies are first and the rest nowhere. Sir Walter Gilbey's collection of pony stories from all lands, Burmah, Morocco, India, Turkestan, Egypt, Texas, the Soudan, and Asia Minor, with the experiences of Bashi-Bazouks, post-riders, Colonel Burnaby, Colonel Dodge and half a dozen transport officers in as many British possessions, is delightful reading. Perhaps the most deserving pony of the series was an American-Indian pony whose acquantance Colonel Dodge made in the great west. He offered forty dollars for it, but the owner asked six hundred dollars. He had ridden this pony during six months, when carrying the mails between Chihuahua and El Paso, nearly three hundred miles apart,

through the territory of hostile Indians. Apache braves who would have tortured and killed him if they had caught him. He made his perilous journey once a week on his pony, hiding all day and riding all night for three successive days. For six months the pony carried him between ninety and a hundred miles three nights in each week. Burnaby used to ride forty miles a day on his Siberian pony. The cavalry in the dash for Metemmeh rode fourteen-hand Arabs. One day the regiment travelled forty miles in eleven and a half hours, with half a gallon of water per horse and four pounds of grain. But the most satisfactory thing about ponies in general is that from Cores to the Orkneys there is hardly a bad breed. They all seem able to do the maximum of work on the minimum of food. Their intelligence is easily accounted for. Everywhere the pony is kept out of doors, and leads a more natural life than the horse. Its hardiness makes it a constant companion of man, and it is everywhere used for work and not for show. The Shetland pony, the smallest of his race and family, the greatest prize and possession of our childhood, is now becoming quite a personage on his own account. His birthplace and bringing-up, his career and obsequies, are unique in the history of the world's domestic animals. Born in hyper borean islands of a diminutive father and still more diminutive mother, he passes from pasture to pasture in boats, till he goes to the south in a ship with hundreds of his companions. Then he descends thousands of feet into the earth, where he works by artificial light all his life, and at his death is brought above ground to be buried. To work in the mines is the destiny of the majority of Shetland ponies. Lord Londonderry, kept a famous stud of them, presumably for use in his collieries. This stud has been dispersed, but there are several in the South of England in which, by careful breeding, the ponies are kept small. These are mostly bred for home use, and for ladies' and children's pets. But in the pits the Shetland pony is still indispensable. If it were not for him coal would be even dearer than it is. He never goes on strike, his temper is admirable, he never grows restive even if he bumps his head, which is the only accident which commonly afflicts him, and to guard against which the more thoughtful coal owners provide him with a leather helmet. Now that the pits are lighted with electric light the ponies' sight does not suffer. They have fine stables, with movable boarded floors, so that they never suffer from thrush or cracked heels, and as the temperature is uniform they do not catch cold. Pure Shetlands are the only breed which keeps small enough to work in the seams, even Iceland ponies proving too big and too excitable. There is no room to jump about in a coal gallery, and the conversion of the diminutive 'Sheltie' into an equine mole is one of the greatest tributes to its placid disposition, and to the determination of its race never to be anything but ponies. In the quaint phrase of one of their admirers: 'There are no ponies small enough to push the Shetlands out of their deserved position. For all that, we hope that a time will come when the Shetlands' place underground may be taken by electris traction, as the ponies took the place of the women and 'butty boys' who pulled and pushed the corves in the bad old days, and that the ponies may drink the waters of forgetfulness and come up to the air and light again.

Swine

GREAT INDUSTRY IN PORK.

Professor Shutt, Government chemist, said the production and export of pork was becoming a great industry, millions of pigs being sent to Great Britain annually. They had, however, found it too soft for the British market. What they wanted was a firm, fat pork. About a year ago the department deemed it advis-

able to try some experiments at the Government Experimental Farm. They had tried several kinds of experiments, especially feeding and exercise. They had recently killed some pigs and had sent a portion of the carcases to England for analysis. The work would not be complete for three or four months. It was a valuable work that they were engaged in and one that will be of immense value to pork packers. The speaker then referred to the tuberculin test. He said the impression had gone abroad that it might disseminate disease, but owing to the great care exercised in the production of the germs it was utterly impossible. The only way in which the disease could spread in connection with the test was by the careless use of the syringe by the veterinary surgeon. Speaking of barnyard manure, the Professor illustrated by charts that manure under cover brought the best results to the farmer and emphasized the fact that liquid manure was much more valuable than the solid, and estimated the loss to manure in barnyards where the material was kept under the eaves of the building, amounted to $1.50 a ton, through the draining away of the dark liquid.

In the discussion, which followed, Mr. G. W. Stephens explained that spruce sawdust could be used to absorb this liquid and then placed on the soil with the best results.

THP ADVANCE IN HOG MARKET.

The advance in the price of hogs and the bright outlook that now seems to characterize the market, will no doubt be most welcome to the farmer who has been bending his energies in the direction of breeding and feeding the kind of hogs required for the English bacon trade. There can be no question that for the past six months prices have been low, and in many cases not sufficient to pay for the cost of production. But a change for the better has come, and it is to be hoped it will continue, or at least no repetition of the depressions we have had lately will follow.

One thing the depression of the past six months has shown is that if our packers wish the farmer to produce a hog suitable for the export bacon trade they must be in a position to pay a price that will enable him to produce the hog required at a profit. There are many evidences to show that the prices paid the last half of the year did not enable the farmer to do so. In our correspondence column this week appears a letter from Bruce E. Johnston, in which he shows that the production of the bacon hog at last fall's prices was far from being a profitable undertaking. However this may be, the export bacon trade has, no doubt, come to stay, and it is for the farmer and the packer to so adjust matters that there may be a fair share of profit in the business for all concerned. Periods of depression are bound to come in nearly every line of trade, and if they are not too long continued may have the effect of bringing about better and more economical methods of production.

"Farming."

PROTECTING AGAINST STORMS.

Storms show that a great amount of work is necessary in keeping a large number of fowls. It is useless to turn the fowls out at any time during the winter, because there is nothing to gain by it if they have a large space for scratching.

It is better to keep them busy inside of the poultry-house than to permit them to be exposed to the winds and storms in the effort to give them fresh air outside. Fresh air in winter is plentiful without seeking it. By giving fowls a variety they can be induced to lay; and as a large number of persons may give the hens care on account of severely cold weather that they never received before, it is possible that some may learn the advantages arising from the care of fowls. There is always some good that may grow out of adversity, and it is hoped that the cold weather just experienced may result in better precautions in the future.