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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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LIV.

LONDON, ONTARIO, JANUARY 2, 1919.

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Canada's Great Opportunity in Live Stock



The Dominion Department of Agriculture believes the time is opportune for the extension of our Canadian Live Stock Industry. The importance of this industry to Canada cannot be too strongly emphasized. Our continued prosperity agriculturally will depend to a greater degree than ever on our exports of beef, pork, cheese, butter and eggs.

The European herds of live stock have been seriously depleted. France is short nearly 8,000,000 head; Italy has had to slaughter breeding stock. The Germans not only swept Belgium bare but were forced to slaughter their own herds which have been decreased by probably 22,000,000 head of cattle and hogs. Ireland, which used to kill 18,000 bacon hogs a week, can now supply about 4,000 only. Denmark, which formerly shipped 50,000 hogs a week has had to decrease her herds by 1,873,000 below normal. In countries reporting, there is a shortage of 32,000,000 hogs in Europe. Of cattle, sheep and hogs there is an estimated combined shortage of not less than 115,005,000 animals. This is more than nine times the total of all the cattle, hogs and sheep at present in Canada.

Europe will rebuild her herds but it will require years. Cereal production can be increased more quickly than animal production, consequently the price of feed should decline more rapidly than the price of meats.

The European market is wide open for Canadian meat products and there is a warm spot in the British and Allied hearts for anything Canadian of good quality. The foundation herds in many European countries have been slaugh-

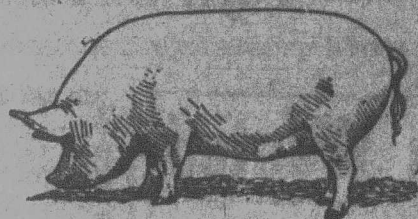
tered, but Canada has her herds intact and must not lose time in cultivating her export trade with Great Britain and Europe. Denmark, the most formidable competitor to Canada in the British bacon trade, is at present practically off the market; if the hog raisers of Canada "cinch" the British market now they will be able to hold it if we maintain the high quality of our product.

In 1916-17 Britain imported 1,261,082,032 pounds of hog products and 1,077,154,000 pounds of beef annually and of this only 130,304,900 pounds of hog products and 29,680,000 pounds of beef were sent from Canada. Britain's domestic supply of hogs is only 75% normal and owing to shortage of feed her farmers were obliged to kill off a large proportion of her hogs before Christmas.

Canada never had such a chance in the European market. We must aim high to supply the present demand and we must maintain quality in order to secure preference over all our competitors. Quantity is necessary but quality is absolutely essential.

Europe will require shipments of meat products far beyond the normal. If Canada is to take advantage of this opportunity, all foundation stock must be conserved. But every man must figure out for himself how many animals he can feed and finish.

To secure and hold the British market alone means large returns. History and recent experience reveal the fact that permanent prosperity prevails in those countries where live stock is the basis of agriculture. Therefore, conserve the herds, improve the quality, finish thoroughly.



Arrangements for Marketing

At present, and for some months to come, all bacon and beef products for export are being taken over by the Allied Purchasing Commission at remunerative prices.

It is well-known that Canadian producers receive from one to two cents per pound more now for hog products than American producers.

It is anticipated that by the time the work of the Allied Purchasing Commission is concluded Canada will have an accredited agent in Great Britain to look after the marketing of Canadian agricultural products with particular reference to meat and dairy produce.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA, CANADA

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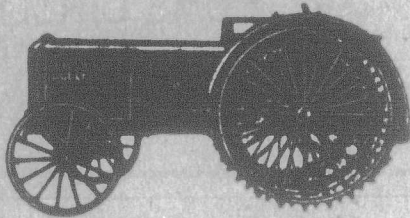
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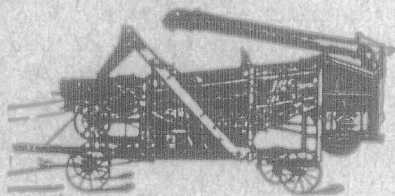
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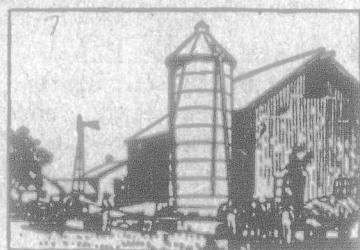


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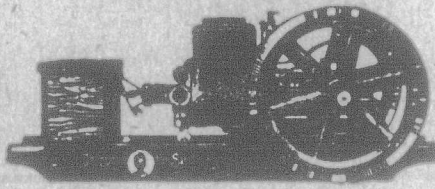
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I have operated and repaired different makes of engines, but I have not seen an engine yet that stands up with the Gilson for power and fuel economy per rated h.p.

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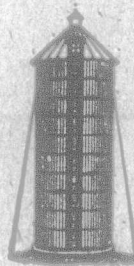
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Yours truly,

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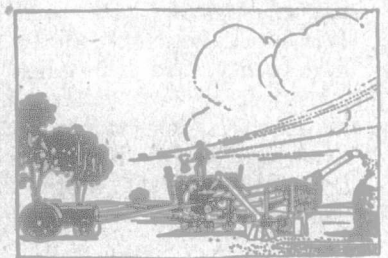
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LIV.

LONDON, ONTARIO, JANUARY 2, 1919.

1371

EDITORIAL.

Make fewer new-year resolutions, but make them so they will not be easily broken.

Free the live stock from vermin if such be present in the herds or flocks. Lice and such cause a wilful waste of feed.

Poultrymen should remember, when feeding animal feeds of any kind, that meat scraps are no substitute for sour milk.

The season for conventions, live-stock meetings, etc., will soon be in full swing. Don't fail to attend the event which has to do with the particular line in which you are interested.

Isn't it about time that poultrymen put into effect that long-wished-for system of pedigreeing stock? Every other important class of live stock boasts of "registered" animals—why not poultry as well?

After a busy season has passed and before another begins, is an opportune time to make plans and lay out a program for the coming years. In this one must be guided by the experiences of the past and demands of the future.

Just at this time of year is a good time to appreciate good roads. An improved road system not only works in warm weather, but when clay roads are ankle deep with mud, one gets a real appreciation of good roads when the solid bottom of a well-built stone or gravel road is reached.

Now that the war is over it is time for Ontario fruit growers to "buck up" and put into working order a good co-operative selling organization. The apple industry needs it badly, and the tender-fruit districts would also be strengthened on the markets by a concerted move in this direction. There are more ways than one in which such an organization would pay.

What's the matter with a National Fruit Council for Canada? We already have a National Live Stock Council that has justified itself, and a National Dairy Council just ready to harness itself up to some big problems. Just as big problems exist in the realm of fruit growing as in live stock, and the industry certainly needs a guiding hand, independent of Government agencies. Think it over.

The aggressive extension work begun recently by the Ontario Milk Producers' Association looks like a step forward. Organization alone will remedy the unfairness by which different prices are paid for milk of the same quality, but consigned to different branches of the industry. The cheese-milk and creamery-milk producers should have some organization working on their behalf; enlarging the scope of the Ontario Milk Producers' Association will fill this need.

An attempt on the part of certain city officials in Sarnia to limit the price of farm produce and keep it below a reasonable level met with the results one would expect. Farmers shipped their produce elsewhere and shopped elsewhere, with the result that Sarnia was obliged to send out S. O. S. calls for fowl and other lines to supply the Christmas trade. Price fixing is a dangerous practice at any time, but when a few local men get together and, without sufficient knowledge of market values, set prices it is difficult to say just what the outcome will be. The annoying part of it is that farm produce is the one thing which engages their attention.

The New Year.

We are beginning a new year and a new era. It is the time for new year resolutions and promises as to what shall and shall not be done. Many of these resolutions are broken before January gives way to the following months, and if the past be any index to the future, by the time three months are gone we will forget we ever pledged ourselves at all. However, human nature seems to be changing; the war has altered our viewpoint as well as our outlook on life, and agriculturists in Eastern Canada are determined, as were those in the West two decades ago, to have something to say in the affairs of the country, at least, insofar as agriculture is concerned. This indicates that a new era is dawning which, we believe, will see, before it ends, a closer affiliation of farmers in all provinces, and a supreme council that will act as the mouthpiece of the organized farmers of Canada. That cannot come any too soon, and the consummation of this ideal will benefit the masses as a whole, rather than any one particular class. Farmers are not striving to dominate; their motto has always been, "Equal opportunities for all but special privileges for none." For almost twenty years the farmers of Western Canada have been forging ahead, overcoming obstacles at every turn and combatting the big interests at every milestone on the highway of their progress. By overcoming these difficulties when they approached them, they have added strength to their cause, and now in the neighborhood of 100,000 Western farmers are united for a common purpose. But the enormous strength which is theirs has never been used to inflict hardship on any other class. When "special privilege" is cast out "equal opportunity" comes in, and a true Canadian citizen cannot rightfully ask for more.

We are confident that the incoming year will see great progress in agriculture as a business, and in agriculture as a directing force in our country's affairs. In the coming conflict, if such there be, class hatred should be dispelled. There is nothing to be gained by slandering the whole urban population on account of a few unkind words or wicked deeds, for which only a few may be responsible. On the other hand, the rural population is not entitled to abuse for delinquencies or lack of wisdom on the part of one or two in the neighborhood. It is this wrangling and piffle that stirs up class hatred and retards progress. Fight a clean fight and the verdict in the end will exonerate those who win and bring no disgrace to those who lose, provided they, too, live up to the rules of the ring. Let every agriculturist do his part in the coming year towards the upbuilding of the basic industry, and every forward step in this regard will benefit the nation as a whole.

Sending Draftees to Siberia.

At the United Farmers of Ontario Convention, held recently in Toronto, the Agricultural Representative on the Leave of Absence Board for Military District No. 3 stated openly and emphatically that drafted men were being sent to Siberia. The daily press has also carried several news items regarding the refusal of men to go on board ships destined for Siberia. This is a peculiar situation and puts a new interpretation on the Military Service Act. A war Government was placed in power, and the Military Service Act carried to enable Canada to do her utmost in defeating Germany, the common enemy of the Allies. However, this forcing of men to take part in a domestic quarrel in Russia does not meet with approval in this country, nor will it until some satisfactory explanation is made by the authorities at Ottawa. We have read considerable about what is going on in Russia, but Canadian citizens will want some authentic statements from our Government before they will condone this act of the Department of Militia and Defence. More than that, there are soldiers

willing to volunteer for service in Siberia, and probably all the force that is required could be raised in this way. It appears now, after Germany is thoroughly whipped, that information could be given out regarding operations in the different countries, and just what the purpose is of the force that is being maintained in the East. A statement in this regard would be welcome. In any case, we believe the Department of Militia and Defence is going beyond the wishes of the Canadian people when they force draftees to do service in Russia.

Shelter the Farm Machinery.

Hundreds of thousands of dollars are lost every year on Canadian farms, due to failure on the part of the owners to take proper care of the farm machinery. This is a loss which is largely preventable. Although it is known that exposure of the implements is detrimental and shortens their life of usefulness, it is not uncommon to see plows, cultivators and even haying and harvesting implements left standing in the field from one season to another. Carelessness, lack of appreciation of the annual loss incurred, and scarcity of room in the barns for housing implements, are direct causes of them being left out in the open. The outlay necessary to build an implement shed is considerable, consequently the erection of a building is postponed from year to year, and the leak gradually enlarges. Implements cost nearly twice what they did in pre-war days. Thus the necessity of endeavoring to make them last as long as possible. The custom of purchasing a new implement when one or more parts become worn, even though the other ninety-nine parts are in good condition, is altogether too prevalent. A little more overhauling of the implements and the replacing of worn parts with new ones would possibly prolong the life of the machine several years and thus be in the best interests of the individual agriculturist, as well as of the entire country. Proper housing, regular overhauling and frequent oiling of farm implements are three practices which should be in effect now more than ever before. Just because the binder is missing a few sheaves is no reason why a new one should be purchased, even though the agent may do his best to persuade you that you should do so. The parts which are worn may be purchased for a few dollars, whereas a new machine now costs well over the two-hundred-dollar mark. The same is true of the other machines used on the farm.

Unite and State the Facts.

The high cost of living is still enthroned and war prices are going on merrily. Of course, conditions have not regulated themselves to such an extent that prices can come down with a bump, but there seems to be a growing tendency to attack food prices first and ignore the high valuation placed on the hundred and one other commodities that are necessities of life. The Fair Price Committee of Sarnia, Ontario, made an attempt to control prices on the market in that city, with the result that farmers simply shipped their produce to other markets that were willing and glad to pay more than the maximum set by the Fair Price Committee of Sarnia. More than that, farmers shipped elsewhere and the city learned its lesson. Urban dwellers in certain towns and cities frequently get up in arms over the price of milk delivered to their doors, and without taking the trouble to ascertain what the producer actually receives for the milk they at once brand him as a profiteer. The difference between the price the producer receives and what the consumer pays is worthy of consideration, for it is here, we believe, that the trouble lies. The consumer should be informed as to the expenses connected with wholesaling and distributing. If they had this information they would not be so quick to attack the producer. Here is where

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organization will assist the farmer, for the individual does not often care to bear the expense of an educational campaign in the interest of all. Local associations in the neighborhood of towns and cities could protect the producer, and many of them do, by giving out useful information concerning the cost of production, what the producer actually receives and what it costs to distribute the milk.

The majority of urban dwellers seem willing to pay any price for a manufactured article and say it is "an account of the war," but farm products they too often think are brought forth with little trouble and no expense and should sell at old-time prices. This fallacy will have to be combatted through the coming years, and only through union will the producers be able to demand their rights.

Nature's Diary.

BY A. B. KLUGH, M.A.
Peat.—(Continued).

All the plants of the zones which we mentioned in our preceding article add to the bottom from which they have grown at least a part of the tissues they have built up by their life-processes. The more highly organized plants in sinking carry with them numerous attached algae and other organisms and fine sediments, and by so much increase the total deposit.

By this constant accretion of dead tissues the bottom on which any group of plants has established itself is built up, thus rendering the water shallower and giving the more shoreward types of plants an opportunity to occupy the territory thus made available to them. Each plant-zone makes its advance in order from the older to the new position. But as the shoreward zones are more densely populated than the zones of deeper water, and as the plants forming them are more abundantly supplied with firm, tough tissues, the upbuilding goes on more rapidly in shallow water. Because of these facts a tendency develops for the deep-water zones to become narrow as the slope of the deposit becomes steeper. This tendency is checked to a certain extent by the spreading out of the accumulations of the shoal-water zones. Winds and currents act in spreading these accumulations after they have been loosened by wave-action. In consequence the deposits are finally built up near enough to the surface to be covered by the turf-forming plants. These are quick to occupy any areas of the bottom which approach the surface of the water, and prevent further disturbance of the surface of the deposit by holding the material firmly in place, so that from the time they gain root-hold the growth of the

deposit goes on steadily until its surface is raised above the level of the water. This process goes on until the lake is finally converted into a marsh, and the basin is completely filled by the peaty remains of the plants which have flourished in it.

As soon as a sedge mat is established certain shrubs, such as the Leather-leaf, Labrador Tea, Andromeda, Lamb-kill, Shrubby St. John's-wort, Sweet Gale, and species of willows come in and with them comes the Sphagnum, or Peat-moss. Sphagnum is the large, grayish-green moss, often tinged with pink occurring so commonly in bogs. Several species are found in Canada. The plants grow continually at the top and die below. It is limited in its upward growth by the height to which water will rise above the general level through the spongy mass below the living tips. If the water-level remains constant this height is seldom more than three feet, but if the water-level rises with the upgrowth of the peat the bed of Sphagnum may become many feet in thickness.

The peat-bog is next invaded by certain species of coniferous trees, the Tamarac and Black Spruce being the commonest and most characteristic species. These trees, like all the other plants which have successively occupied the old lake basin, first appear at the margin and gradually spread towards the centre as the peat bed becomes firmer over its entire area. When these trees have become established over the whole area, and deciduous trees or other coniferous trees, begin to come in at the margins the area has passed over from the bog stage to the forest stage and is no longer workable as a peat deposit. When the area is at the acme of the bog stage, that is when the Sphagnum is well developed but the trees have not yet invaded the area to any appreciable extent, it is a very interesting habitat botanically. Here is the home of many species of Orchids, of the Pitcher-plant, the Sun-dew, numerous shrubs of the Heath Family with very showy flowers, such as Kalmia and, in the Maritime Provinces, Rhodora.

So far we have considered only the formation of peat in lake basins, and obviously the method is somewhat different in the case of extensive flat areas. Such flat areas are plains, plateaus, valley floors, flood-plains and other poorly-drained types of country, on which the water-level is at or near the surface for the greater part of the time and the soil below is saturated. In this case we naturally have none of the strictly aquatic plants present, neither have we the zonal arrangement so conspicuous in the case of lake basins. The plant types most commonly found in these places are grass-like in form. They have long, slender leaves and weak aerial stems that die down to the ground at the end of the growing season. Many of them have horizontal, underground stems that persist for several years, and from these grow great numbers of long, thread-like much-branched roots, that penetrate the soil for considerable distances, and form a very compact, tough turf. The aerial parts falling to the ground at the end of the growing season decay and become incorporated in the turf and thus peat formation begins. The commencement of peat formation introduces other factors into the area, because the structure and composition of the soil are changed, its wetness increased, and certain products of growth and decay are introduced into it. The soil water is increased because the decaying vegetable matter and the peat act like a sponge, holding the water absorbed by them. They also clog up small drainage channels, and thus hinder the run-off. In this manner the area remains wet, only those kinds of plants which can endure such condition persist, and they go on indefinitely adding to the accumulation of peat.

(To be continued.)

Disposing of the Kaiser.

BY SANDY FRASER.

Generally about this time of year my niece Jennie comes along to spend a couple o' weeks or so wi' me an' the auld wumman, "for a change an' a rest an' a chance to talk," as she says. She's workin' in an office in the city for some big business concern, is Jennie, and maist o' the time she has to keep quiet an' behave hersel', which must come pretty hard on her, as ye would ken gin ye were as weel acquainted wi' her as I am. It's little good I get oot o' the papers, or any ither readin' matter that comes tae the hoose, while she's around, I can tell ye that. Hooever, as Jean says, maybe it winna hurt me to ease up on my readin' a wee bit noo that the war is over an' there's naething to dae but pick up the pieces. "They can perhaps dae that wi'oot your help, Sandy," says she.

And Jennie wis about as guid at rubbin' it in as her auntie. Pretty near the first thing she said was "Weel, Uncle Sandy, I see you're back frae the war. And wi'oot a scratch either. How did you come tae get off sae easily?" "Oh, I dinna go across after all," I replied. "Just as soon as the Kaiser heard I wis thinkin' o' comin' he says tae Hindenburg, 'we might as weel quit,' says he, and they quit. Sae that's how I wis prevented takin' a mair active part in ony o' the engagements and am here 'wi'oot a scratch,' as ye say. But here Jean butted in. 'I'll tell ye why he didna get across tae France, Jennie,' says she. 'The Government wouldna' tak' him because they kenned that it wad never pay them to ship him across and then have to keep sendin' him food-supplies, and them as scarce o' ships as they were. Like some ither things, yer uncle's appetite improves wi' age,' concluded Jean.

I said naething, knowing that I wad get the worst

o' it under the circumstances, and after a meenute Jennie says, "Weel, onyway, Uncle Sandy, ye might tell us what ye are gaein' to dae wi' the auld Kaiser noo that he's doon an' oot an' waitin' tae be disposed of in some way. It's cruel tae keep him in suspense ony longer than ye can help," says she.

"It's a subject that I hae given conseederable thought to," I replied, "For his ain good and as an example tae ither that might be inclined tae follow in his footsteps, he ought tae be punished. But sae far as satisfying ony personal grudge against the auld chap is concerned, I kind o' think I'd let him off. Ye maun mak' some allowance for the kind o' a bringin' up he had. There are lots o' chaps oot o' jail that are juist as headstrong as the Kaiser and gin they had had his chance would hae been as bad or maybe worse. None o' us ken how far we wad go gin there wis naething tae stop us. I dinna think ower muckle o' the auld fellow, I want ye to understand that," I went on, "and that's the reason I'd hate to mak' a martyr oot o' him. He doesna deserve tae be promoted intae that class. And gin we shoot him or hang him there will be millions o' people that will be makin' a saint oot o' him an' in a few years be sayin' their prayers to him, maybe. To my way o' thinkin' he should be taken awa' to some desert island and left there tae scratch for himsel', like auld Robinson Crusoe. He'd hae plenty chance tae think about his past foolishness an' to mak' up his mind on a different course o' action for the next round, whenever or wherever that might be."

"Wouldn't you let his wife go with him?" says Jennie, lookin' up.

"Noo Jennie," I replied, "did I no' say that I wouldn't mak' a martyr oot o' him? There's a limit tae punishment even wi' the worst o' criminals."

Jean sniffed at this an' started to say something but Jennie laughed and says she, "I hae been readin' lately about the auld Spanish Inquisition, Uncle Sandy, and if ye werna minded to be sae easy on yer friend William, I could gie ye some pointers aboot disposing of him. There wis one machine they had for lettin' water fall on a man's head, a drop at a time, and although you might not think this wis much o' a punishment, still they say that it wis the worst o' their mony inventions. It wad mak' a mon go back on his religion or even his political party, when onything else wad be wi'oot effect. I wis thinkin' it might be a'right to gie the Kaiser a little o' that," says Jennie, wi' a wink at Jean that she didna think I could catch.

"I haven't much faith in yer water-cure," I said, "but gin ye're bound to try it on him I have no doot he wad prefer it that way than to be compelled tae drink it. That's one thing they say a German will not dae, drink plain water."

"Anither think those Spaniards had wis a machine they could fasten a man to and then by turnin' a crank they could juist pull him to pieces."

"No use," I says, "the Kaiser has been pulled to pieces mony a time in the last four years, and he's able to go some yet." "Now na mair o' yer far-fetched jokes," says Jennie, shakin' her fist at me. "This is a serious business and ye want to gie it yer best thought. If ye dinna want to hang the ex-emperor up by the thumbs or even to try the effect o' a gas-bomb on him ye've got tae think up something else. We canna' go on havin' the business o' the world held up like this, wi' everybody wantin' to ken what's tae be done wi' the Kaiser an' refusin' tae go on wi' their wark till they find oot."

"Weel, I'll tell ye what I think we'd better dae wi' him, since ye dinna like my idea o' turnin' him oot tae pasture on a desert island. I think we'll hire him oot to dae the chores on some guid-sized farm where they keep a lot o' cows, say between thirty and forty. I'm willin' tae admit that the auld fellow has never done much to pay for the first-class board he's been gettin' all his life, that is, in the shape o' real doon-right hard labor. Workin' wi' his hands the same as his betters. And seein' he's made a mess o' the Kaiser job, it's my idea that it wad be na mair than fair an' square tae pit him doon a few rounds on the ladder an' let him begin over again at the point where a guid mony o' us had to mak' oor start, and where some o' us bid fair tae see oor finish as weel. I'd like tae see him cleanin' oot the stables on that farm I mentioned, for one thing. I'd give him that auld wheelbarrow o' mine wi' the twisted wheel in it an' let him gae to it. Sunday an' Monday an' ilka ither day frae November till May. And when, besides this, he had attended tae the feeding an' waterin' an' milkin' o' those coos o' his, and paid his respects tae the seven or eight head o' horses an' ministered tae the wants o' the pigs an' the calves an' the hens, and finally got time to see about the wood an' water that he had been asked to carry into the hoose, then I'm thinkin' he'd be ready to 'hit the hay,' as that last man we had used to say, and if he ever thought o' startin' up anither war or lookin' for ony trouble o' that kind, it wad be in his dreams, and likely he'd pretty soon even quit dreamin' about it."

"Sae there ye have my scheme," I concluded. "There's na better medicine than Hard Labor for nine-tenths o' the ills that Humanity is subject to. It's the punishment an' the cure mixed up in the one bottle and mony's the man I ken that wad hae gone tae the bad gin he hadna been where he wis under the necessity o' takin' a guid heavy dose o' it."

"Weel," says Jennie, jumpin' up an' startin' for the kitchen, "I guess that's a hint for me to go and help auntie get the supper. But I'll leave it to the Kaiser himsel' if you're not harder on him, after a', than I wis gaein' tae be. I'm sure he'd just as soon stand up an' be shot as sit doon an' try to milk that brindle heifer you let me experiment on last summer when I wis here. She might hae just killed me," says Jennie, unco' sober like, as she went oot o' the room.

THE HORSE.

Training and Driving Light Horses.

The value of a harness horse depends greatly upon his manners, and his manners depend largely upon his education. The age at which he should be taught to go in harness is a matter of opinion. Some apparently think that he should not be handled any more than sufficient to halter break him (and in some cases not even that) until he reaches adulthood, or at least three or four years of age, and is ready to be fitted for the market or to go to work on the road for his present owner. Under such conditions he is usually put to work without any preliminary education or fitting;

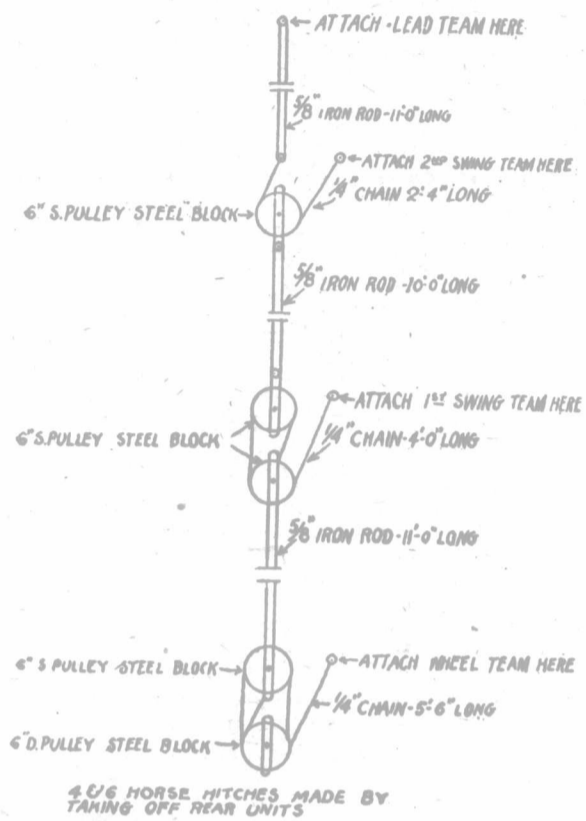


Diagram of a Eight-horse Tandem Hitch.

he is large and strong, has spent a few years in idleness, hence is unaccustomed to restraint. As a consequence he is more or less self-willed and stubborn, is hard to handle, and the exertion of fighting for his own way and performing the functions of a road or carriage horse is much harder on him than it would have been had he been prepared, both in training and muscular development, for the labors required. It also requires more strength, tact and skill on the part of the driver to handle a green, full-grown horse than it does to handle a younger animal, and, in the majority of cases, a horse that has been broken in this way does not make as reliable, safe and pleasant a horse to drive as one that has been gradually educated when young.

While we consider it very unwise to ask a colt to do much work until he is at least four years old, we think it advisable to teach him to go in harness when quite young. For racing purposes, where early money is the main object, the racing of one, two or three-year-olds may, in a manner, be justified, but when we wish to develop a sound, strong, mature animal, he should not do much work of any nature under the age already mentioned. If we note the career of racing horses we will notice that a colt that distinguishes himself on the turf as a one or two-year-old, seldom continues to attract attention as a mature horse. Excessive continued physical exertion in an immature animal of any breed tends to weaken the constitution and prevent development, and, while there are exceptions to this, the rule holds good in most cases. At the same time the gentle exertion necessary to educate a colt to go in harness has a tendency to increase, rather than impair, his growth and muscular development, and at the same time educate him gradually, rather than break him quickly. We advocate the very early handling of a colt, especially one of the lighter classes, whose future function will be to go in either light or heavy harness. He should be taught to lead when a few days, or at most a few weeks old, and the more gentle handling he gets at this age the better. It teaches him early to not fear man, to yield to restraint and do as he is asked, and in after years he has no stubborn will to conquer. He should be taught to stand tied the first winter, and he should also receive his first lessons in biting, or, in other words, "giving him a mouth." This can be done with little time or trouble by putting a nice, light bridle with an ordinary snaffle bit on him, and leaving it on for a few hours daily, until he

ceases to "fight the bit." He may also be taught to lead by the bit, and to stand tied by it instead of by the halter. In addition he should be taught to submit to having his feet handled and pared. The paring of his feet is, in most cases, necessary for his comfort and future usefulness, as well as for his education.

When the time arrives in the spring of his second year, when he is turned on pasture, his education usually ceases until the following fall. As soon as he is taken to the stable for his second fall and winter his schooling should be re-commenced. He has now reached sufficient age and development to be taught to drive, but he should not be asked to go in harness without further preparation. If possible he should be given a nice, large box stall, or if the weather be favorable, a paddock. During his first winter he was taught to wear a bridle without check rein, now he should be taught to bear pressure upon the bit, by fitting him with a light bridle with check rein, wearing a back pad and crouper or surcingle with check hook and crouper. He should be allowed to wear this for a few hours daily in his box or paddock. The checking should be very slight at first, and gradually increasing until the head is held the required height. When he has had sufficient handling of this sort, a set of harness should be put on him and left on for a few hours daily in stall or paddock until he has become accustomed to it. He is, or should be, now ready to drive, but should be driven a few times simply with the harness on before hitching him to a rig. He should be taught the significance of the words of command that he will henceforth be expected to obey. As few words as possible should be used. He should be taught to stand at the word "whoa," step backwards at the word "back," go forward at a chirrup or the command "go on," lessen his gait at the word "steady," etc. The same word should be used at all times to express a certain action. We frequently hear drivers use the same words of command to express different ideas, for instance, we frequently hear the command "whoa back" when the driver simply wants his horse or team to slacken their pace, and use the same words of command when he wants them to stand or back, etc. This has a tendency to confuse a colt; hence great care should be taken when driving a colt or older animal to always use the same command to express a certain action. When driving a colt with the harness only, the lines should pass through the shaft tugs, instead of through the terrets, as they then pass along his sides and the driver can prevent the colt turning, as he has a leverage on his hind quarters. When the colt has learned to obey the words of command he is ready to be hitched. It must be understood that both harness and rig should be so strong that there is little liability of breakage. It is wise to hitch him to a two-wheeled rig for the first few times, as there is less danger of trouble. It is also wise to use a kicking strap (or probably it would be more correct to say "an anti-kicking strap"). He should be driven a little every day until he becomes handy and reasonably safe.

While we prefer teaching a colt to go in single harness first, others think it better to teach him to go double, and where a steady, prompt and reliable mate can be had, it probably is as well.

During his third summer he should be on pasture, and during his third winter his education should be continued. When three years old he should be safe to drive, and may be asked to do a reasonable amount of work, but should not be asked to do hard or steady work of any kind until at least four years old, and we find that, with few exceptions, horses that are useful at a very old age, are those that have done little work until five or six years old. It certainly pays, when practicable, to go easy with horses until they are mature WHIP.

Multiple Horse Hitches.

BY WAYNE DINSMORE AND PROF. E. A. WHITE.

Introduction by Wayne Dinsmore.

The shortage of labor available for field work in tilling our farm lands has been marked in the last season, and will be still more noticeable in the spring of 1919. The monthly wage of farm hands has also advanced to the highest level ever known. These factors have directed attention to the use of hitches enabling one man to do more work than has heretofore been the rule.

Last fall, within six weeks' time, I was in New England, Pennsylvania, Ohio, Illinois, Iowa, Idaho and Washington. In New England, even on the valley lands,

free from stone, two horses, a 10-inch plow and one acre per day was the rule. In Pennsylvania and Ohio, sulky plows, three horses, and 2 1/2 to 3 acres per day was general practice. In Iowa and Illinois, 2 bottom gangs, and 4 or 5 horses, turning from 4 to 5 1/2 acres per day, was the usual plan, even among our better farmers. But in Idaho, Oregon and Washington, 3 bottom plows, with 8 and 10 horses or mules, turning from 8 to 10 acres per day, was the plan in vogue among the better farmers; and they made less fuss over driving ten horses than corn belt farmers do over driving five.

Regardless of the introduction and use of other power units, some horses will always be needed in farm operations. Experience has shown that under mixed systems prevailing in the Central West, 6 draft horses is the minimum allowance on a quarter-section farm,



A Six-horse Tandem Hitch.

and many of the best farms contain from 200 to 300 acres, 8 to 10 horses is the rule on a large proportion of our most effectively operated farms. On many of these, especially live-stock farms, all work will be done by the owner and one or two helpers, who may be immature sons. On farms of this sort, the 6 and 8-horse hitches will be found especially valuable, for one man can be started in the field, and the other, be he owner or employee, can proceed to other work, such as seed selection, adjusting machinery needed in the next farm operations, caring for live stock, or hauling out fertilizer from field lots and barns to fields, or some of the numerous other tasks waiting to be done on a farm. Actual experience satisfies us, however, that 6, 8 or 10-horse hitches should be trusted only to the owner of the horses, who should be a first-class horseman, or to a son or employee who is an A1 teamster, with his heart in his work. Careless, reckless employees, or boys too young to exercise discretion, should on no account be trusted with such teams. It must be reiterated in the strongest possible terms that these larger hitches will not be operated successfully by ordinary hired hands.

Frequent requests for information relative to the practical hitches for large teams, and observation of good results obtained on the Pacific Coast with such teams, led the writer to take up the subject in June, 1918, with Professors E. A. White and J. L. Edmonds, of the Illinois Experiment Station. These men were greatly interested in the problem, and were prompt to pledge their hearty co-operation in collaborating with the Research Society of America in carrying out a series of practical field tests calculated to help horsemen in dealing with this question.

The writer secured complete sketches of all hitches used in Montana and on the Pacific Coast, from Professor E. L. Potter, of the Oregon Agricultural College, who also furnished the details of the system of "tying in" and "bucking back."

This "tying in" and "bucking back" is the secret of the simple system of driving these 6, 8 and 10 and 12-horse teams, by driving the leaders only, and is the principle followed in driving the 28 and 32-horse or mule teams used on the combined harvest-threshers used on the Pacific Coast. Our especial thanks are extended to Professor Potter for his courtesy in furnishing all of this information, which we desired before starting our own work.

The mechanical end of the work was conducted by Pro-



An Eight-horse Team Working with No Side Draft.

essor E. A. White, Head of the Division of Farm Mechanics at the University of Illinois. He brought to the work great technical skill, scientific knowledge and long experience in field tests with farm implements. He had at his command the shops and skilled mechanics of the University of Illinois, and a dynamometer similar to those used in testing the tractive pull exerted by locomotives.

He also had the assistance of leading plow companies, and the help of Professor J. L. Edmonds, of the Animal Husbandry Division, whose horsemanship was enlisted in the tests. Professor White's time has been given up almost wholly to this work for the past three months, and the horsemen and farmers are under especial obligations to Professor White, and to the Illinois Experiment Station for permitting him to deal with this in an official capacity.

"Tying in" consists of tying the near horse in each pair to the hame of the off horse with an ordinary tie-strap, and tying the off horse (the furrow horse) to the draw-rod running forward to the next team. These tie-straps should be just long enough to permit the horses to move straight forward when straightened out on a pull. When correct lengths are once determined, a snap should be tied in at the proper point, so that in hitching up it is only necessary to snap it to the proper place after the neck yoke has been attached to the horse.

"Bucking in" is done by taking a strap or rope 10 feet long, placing a snap or buckle on each end and a ring on the strap running free. The ends of this strap are snapped into the bit rings so that this strap rides the same as an ordinary check-rein but is slightly longer.

An ordinary tie-strap is snapped into the ring and then tied back to a ring welded on the draw-rod. The length of this, called a "buck-strap", is adjusted by field test, and a snap then tied in at the proper point to snap, into the ring on the draw-rod. The buck-straps should be so adjusted that the horses will work freely, but be checked whenever they are in danger of drawing the chain back against the pulley wheel.

The tests have been carried out at South Bend, Ind., at the Illinois Experiment Station, and at Dunham's Oaklawn Farm, Wayne, Ill., where it was necessary to transfer the completion of the work on account of lack of suitable fields at the Illinois Experiment Station. Our especial thanks are due to Dunham's for many courtesies shown us in the completion of this work.

Details of the hitches are fully explained by Professor E. A. White as follows:

Details of Hitches. BY PROF. E. A. WHITE.

In order to use horses efficiently on the plow, hitches must be devised which eliminate side-draft and enable the horses to work under favorable conditions. Most abreast hitches crowd the work animals and cause side-draft on the plow. To overcome these difficulties, and work no horses on the plowed ground, some form of tandem hitch must be used. Brief explanations of these hitches follow:

For the disk harrow, which should be used with a tongue truck, the 3 and 4-abreast hitch is satisfactory when no larger units are desired. Six horses abreast take up too much room, cause crowding, and there is some danger of the outside horse turning into the machine. For this hitch a combination of 3 and 3, with extension tugs, can be used. Diagrams for this are not yet available but will be made up later.

Where heavy hauling is to be done it is frequently desirable to use more than two horses. To get a satisfactory 3-horse hitch on a wagon, tugs should be used. If more power is desired the most practical hitch is 2 and 2 with extension tugs. In this case the neck-yoke must be fastened so that it cannot come off the end of the tongue. In order to secure the proper line of draft in all these hitches, it is absolutely necessary that the doubletrees, or eveners, be of the lengths specified. Wherever possible, the use of the wide singletrees, 30 or 36 inches, should be insisted upon. Do not fail to emphasize these last two points. In order to secure the desired results this must be insisted upon.

4-Horse Hitch (2 and 2) Extension Tugs.

In this hitch a pulley is attached to the ends of each singletree. A chain, 13 feet long, goes around each pulley. One end of this chain is attached to the tug of the wheel horse and the other end to the tug of the lead horse. The hooks for the tugs of the wheel team should be large enough so that they will not pass through the

pulley. In order to prevent the wheel team from going too far ahead a ring, so large that it will not pass through the pulley, should be welded in the chain 18 inches from the end. If this hitch is used on a wagon not over 12 inches of play should be allowed. These chains should be supported from the hames of the wheel team. This hitch should be made up as a self-contained unit.

For 16-inch sulky plow use 44-inch evenner and 30 or 36-inch singletrees.

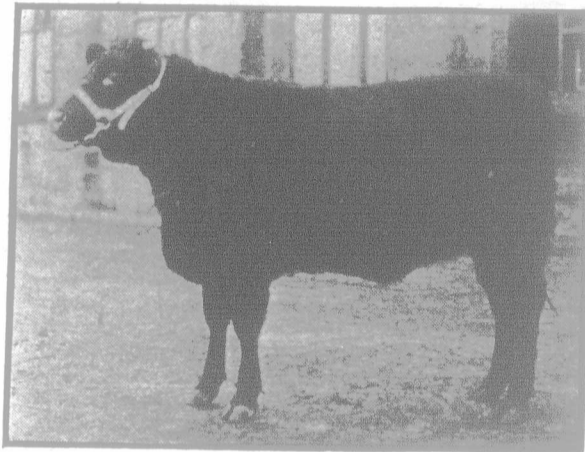
For 24-inch gang plow use 44-inch evenner and 30 or 36-inch singletrees.

For 28-inch gang plow use 50-inch evenner and 30 or 36-inch singletrees.

Chains 13 feet long. All measurements on evenners are given. Centre of hole to centre of hole, over all, 6 inches longer.

4-Horse Hitch (2 and 2) with Draw-Rod.

In this hitch the pull between the lead and wheel team is equalized by a chain (2 feet 4 inches long) passing around a pulley. A ring, large enough to prevent the chain from being pulled out of the pulley, should be put in each end of the chain. The equalizers for the wheel team are attached to one end of the chain and a draw-rod, 11 feet long, is attached to the other end. This draw-rod is supported by an extension from the



Diamond Beauty.

Shorthorn heifer. First in class of thirty-six at Chicago for J. A. Watt, Elora, Ont.

neck-yoke of the wheel team. The equalizers for the lead team are attached to the end of the rod. The equalizers for the wheel team should be attached to the end of the chain coming from the top of the pulley.

For 16-inch sulky plow use 44-inch evenner and 30 or 36-inch singletrees.

For 24-inch gang plow use 44-inch evenner and 30 or 36-inch singletrees.

For 28-inch gang plow use 50-inch evenner and 30 or 36-inch singletrees.

5-Horse Hitch (3 and 2) with Draw-Rod.

This is a very desirable hitch to use on a 28-inch gang plow. Detailed plans can be secured from Division of Farm Mechanics, Urbana, Ill.

For 28-inch gang plow use 50-inch evenner and 30-inch singletrees, with 11-foot draw-rod and chain 2 feet 4 inches long.

6-Horse Hitch (2, 2 and 2) with Draw-Rods.

In this hitch the team is strung out in 3 pairs. When plowing 3 horses walk in the furrow. The pull is equalized by means of draw-rods, chains and pulleys. Behind the wheel team a block and tackle, consisting of 2 6-inch blocks, with single pulleys, is used. The blocks are threaded with a chain (a ring in each end) 4 feet long, so as to divide the draft of the load in a 2:1 ratio. The wheel team is attached to the free end of the chain and one of the pulleys to a 10-foot draw-rod; the other pulley is attached to the plow. This arrangement balances the pull between the two wheelers and the other four horses. The pull between the swing and lead teams is equalized by a pulley exactly as in the 4-horse hitch with draw-rod.

For 24-inch gang plow use 44-inch evenners and 30 or 36-inch singletrees.

For 28-inch gang plow use 50-inch evenners and 30 or 36-inch singletrees.

8-Horse Hitch (2, 2, 2 and 2) with Draw-Rods.

In this hitch the team is strung out in 4 pairs. When plowing, 4 horses walk in the furrow. The pull is equally divided by means of pulleys and chains. Behind the wheel team a block and tackle, consisting of one block with one pulley and one block with two pulleys, is placed. This tackle is threaded with a chain 5 feet 6 inches long, in such a manner as to divide the draft of the load in a 3:1 ratio. The wheel team is attached to the free end of the chain and a rod, 11 feet long, is attached to the one-pulley block. The two-pulley block is attached to the plow. The remainder of the hitch is the same as described for the 6-horse hitch (2, 2 and 2) with draw-rods.

For 36-inch gang plow use 54-inch evenners and 30 or 36-inch singletrees.

For 42-inch gang plow use 60-inch evenners and 30 or 36-inch singletrees.

If 8 horses are to be used on a plow this hitch is recommended in preference to the 8-horse hitch (4, 2 and 2).

8-Horse Hitch (4, 2 and 2) with Draw-Rods.

In this hitch 4 horses are used in the wheel team, 2 in the swing team and 2 in the lead team. When plowing, 3 horses walk in the furrow. By means of a special pulley attachment the 4 wheelers on an ordinary 4-horse evenner are worked against the 4 horses comprising the swing and lead teams. The hitch for the swing and lead teams is the same as for the 4-horse hitch (2 and 2) with draw-rod. This hitch should only be used on a 3-bottom, 42-inch gang plow.

Length of 4-horse evenner, 68 inches.

Length of evenners, 34 inches.

Length of singletrees, 30 inches.

10-Horse Hitch (4, 2, 2, and 2) with Draw-Rods.

In this hitch 4 horses are used in the wheel team and the others strung out 2, 2 and 2. When plowing, 4 horses walk in the furrow. A large evenner, 70 inches long, is used at the plow to work the 2 outside wheelers against the other 8 horses. The pull between the 8 horses is equalized by means of the same hitch as used for 8 horses (2, 2, 2 and 2,) except that the lengths of the evenners must be changed. This hitch should only be used on 3-bottom, 42-inch gang plow.

Length of large evenner, 70 inches.

Length of evenners, 36 inches.

Length of singletrees, 30 inches.

LIVE STOCK.

The Lincoln.

The Lincoln breed of sheep derived its name from the name of the county where it originated, on the Northeast coast of England. In Lincolnshire County there existed many years ago a sheep which was large but rather coarse, that was long-bodied, hollow-backed and with flat ribs, but possessing a good loin. By the use of Leicester blood an improvement in the Lincolnshire sheep was effected. There was considerable rivalry between the Leicester and Lincoln breeders of those days. The latter bred for size and long fleece, and with that they got rather slow maturity. However, the Leicester breed became somewhat more popular and wider spread. It is considerably over a century ago since Lincolns were brought to America, and as early as 1834 it is claimed that as high as \$500 was offered at Buffalo for a Lincoln ram. The Lincoln is one of the largest of the English breeds of sheep. Rams sometimes attain a weight of 400 pounds, while the ewes will average close to 275 pounds. There are other breeds that are preferred for mutton production. There is a tendency for too much fat to be produced, which affects the quality. In feeding experiments the Lincoln ranks very well. Breeders have selected and bred to improve quality and to secure a sheep which will mature early and fatten easily. They have been, to a large degree, successful. As a rule the breed is docile, thus being suited to confinement in the feed lot. Owing to the size, it is but natural that the breed should do best where feed is abundant. The Lincoln does not hold its own as a grazer in the hilly countries. It is used a good deal for crossing with other breeds for the production of mutton. Crossed on the Merinos, or the common ewes of the Argentine, big, strong, growthy lambs are produced. They fatten easily and are in demand on the English market. The ewes are good mothers but only produce a fair amount of milk.

Lincolns have been principally exported to sheep-grazing countries, such as Australia, Argentina, Russia, New Zealand and America. Judging from the exhibits at the American fairs, the Lincoln has not gained a very strong foothold in the United States. In Ontario the breed is popular, and some exceptionally choice flocks are to be seen on many an Ontario farm. As a producer of wool, the Lincoln has possibly no equal. It is doubtful if there is any other breed which furnishes so long a staple. Mature Lincolns will shear around fifteen pounds of wool, and the quality is generally considered to be somewhat superior to that of the Leicester. The particularly long fibres, often ten inches or more in length, render the Lincoln wool well adapted for an exclusive trade. During the past year exceptionally high prices have been paid for Lincoln rams in England. The following is a scale of points for a Lincoln ram, as published in the "Shepherd's Handbook," issued by the Canadian Sheep Breeders' Association: Good symmetry, shoulders well back with head



Three Shearling Lincoln Ewes.

up, must stand straight and level on hocks and fetlocks. Size—A Lincoln is essentially a big sheep, but this is not to mean length of leg only. Length and Girth—Length of body consistent with a deep rib, wide spring. Head and Ears—A good masculine head with deep wrinkles on forehead, a clear bold eye, wide nostrils, blue skinned, not pink. Ears long and well placed, not

pointing too forward or "lopping"; white ears objectionable; color should be a blue-grey, mingled with darker spots. Bone and Substance—A Lincoln ram needs a strong bone to carry his weight. Activity—The ram must walk free and gaily. Mutton—Deep, firm handling flesh along back, a wide loin, no hardness of touch on top of shoulder, a good wide "scrag." Leg of mutton

well let down. Fleece—Of great importance. Great weight of wool without coarseness; a broad, clean staple of fine lustres, that is, a wavy appearance in the lock; soft or what is termed "mossy" wool objectionable; no harsh, straight, hairy wool on thighs; head to be well covered and a broad forelock; breast and inside the thighs to be covered.

Winter Care of Pregnant Sows.

While some swine breeders have particularly good success and are able to raise to marketable age a large percentage of the pigs farrowed, there are others who experience a heavy mortality in the piggery. A. A. Dowell, Professor of Animal Husbandry, University of Alberta, writes as follows regarding the wintering of brood sows: "Leading swine authorities have estimated that forty out of every one hundred pigs farrowed in Western Canada are either stillborn or die shortly after birth. A good many of them appear to be perfectly normal, but lack sufficient vitality. The greatest mortality is due to the appearance of the dreaded hairless pig. This trouble is not confined to Western Canada alone, but has also made its appearance in Ontario, and is very prevalent in certain hog-feeding sections of the United States." The Professor tells of a man who came to his office last spring with the statement, "I bred one hundred gilts last fall with the idea of raising my feeder pigs, instead of buying them at the stock yards. The first eighteen have already farrowed and practically every litter has been hairless. What can I do to save the other eighty-two litters?" The ration which this man had been feeding consisted largely of shorts and the gilts were over-fat. The question is, is the trouble due to the feed or to the gilts being too fat. Another breeder stated that he was going out of the pig business because his losses at the time of farrowing have prevented him from making any profit in the past three years. Experienced breeders agree that heavy losses follow years of early frosts, where large quantities of frozen grain are fed to the pregnant sows. For this reason many have been firm in the belief that frozen wheat contains certain poisonous properties which make it unsuited to the brood sow ration. Others contend that the greatest difficulty follows long, severe winters, where the sows have a tendency to remain in their sleeping quarters, rather than rustle for a living. This led them to conclude that lack of exercise, insufficient water, too little fresh air, and lack of sunlight are all important factors. Others lay the blame to lack of protein, a scanty supply of mineral matter, and the sows becoming too fat. Owing to the fact that practically every hog raiser has his own theory as to the actual cause of the loss, the Animal Husbandry Department of the University of Alberta are devoting considerable time and experimental space in an endeavor to ascertain the direct cause, and, if possible, a remedy for the loss. Many of the experiments require several years of careful repetition before results are of any considerable value. Certain phases of the work are far from settled, but some of the results obtained are definite and can be put to immediate use by the practical breeder. The objects of the experiment are to determine the suitability of frozen wheat as a feed for pregnant sows, also the suitability of a ration consisting entirely of whole oats, and the same of a ration of barley; the importance of sunlight, fresh air and exercise, the value of mineral matter in the ration, and whether or not brood sows should be given constant access to water, or will good results follow from eating snow. Thirty-six pure-bred sows of Berkshire, Duroc Jersey and Tamworth breeding were used in the experiment. The following gives a list of the feeds comprising the ration, the method of feeding and the results obtained by the use of certain feeds, and also the conclusions drawn from the experiments:

Feeds.

Frozen wheat—All frozen wheat used in this experiment was secured from a grain dealer at Rocky Mountain

House, Alberta—a district where hairless pigs have long been the bane of the swine breeder.

Oats and barley—Grown on the University farm and of good quality.

Wheat bran—Ordinary wheat bran secured through local grain dealers.

Tankage—Meat meal tankage commonly called tankage, a by-product of the packing plants, and containing 60 per cent. protein.

Garbage—Collected from the University dining hall—thoroughly cooked from four to six hours before feeding—weights taken in the wet sloppy condition as fed.

Coal—In all lots except five and six fine coal was available at all times.

Water—Provided each group except sows in lot 8.

Salt—Free access to common stock salt.

Sows in lot 1 were fed and handled under what was considered ideal conditions and served as a check on the limited exercise lot 7, the snow-fed lot 8, and the no-sunlight lot 12. The morning meal fed at 8 a. m. consisted of a mixture of equal parts crushed oats, crushed barley and bran with six per cent. meat meal tankage, fed at the rate of one pound per sow. Boiling water was poured over this mixture before being placed before the sows. At noon they were fed seven pounds per head of thoroughly cooked garbage; at 3.30, one and one-third pounds per head of whole oats were scattered on the ground to force exercise; and water, fine coal and salt were available at all times. Sleeping quarters were kept clean and comfortable and placed a considerable distance from the feed trough to ensure added exercise. These sows made an average gain of 87 pounds during pregnancy, were vigorous and thrifty and relished their feed at all times. They farrowed 22 strong pigs weighing an average of 2.579 pounds at birth, and raised 19 or 86.36 per cent. During the entire pregnancy period these sows consumed an average of .971 pounds grain and 2.63 pounds garbage per hundredweight per day. This system of feed and management gives good results.

"In lot 2, the object was to utilize such feeds as are commonly available on most farms—hence, the meat meal tankage and garbage were omitted. The morning feed consisted of slightly over 2 pounds per head of a mixture of crushed oats five parts, crushed barley two parts and wheat bran three parts—scalded and fed in the form of slop. At 3.30 p.m. whole oats at the rate of one and two-thirds pounds per head per day were scattered on the ground to give ample exercise—water, coal and salt being available at all times. One sow in this lot proved to be not in pig—but the two remaining farrowed 12 and 14 pigs, respectively. They made an average gain of 66 pounds and came through in good condition with the pigs weighing at birth an average of 2.288 pounds. Though the percentage of pigs raised fell to 76.92 per cent., it would be considered one of the most successful lots in the experiment when the number farrowed is considered—the two sows raising 10 pigs each. The grain requirement of 1.068 pounds per hundredweight per day shows that old sows require less feed in proportion to weight than gilts, though the average gain per sow was less. This ration proved quite economical and ensures excellent results.

Barley.

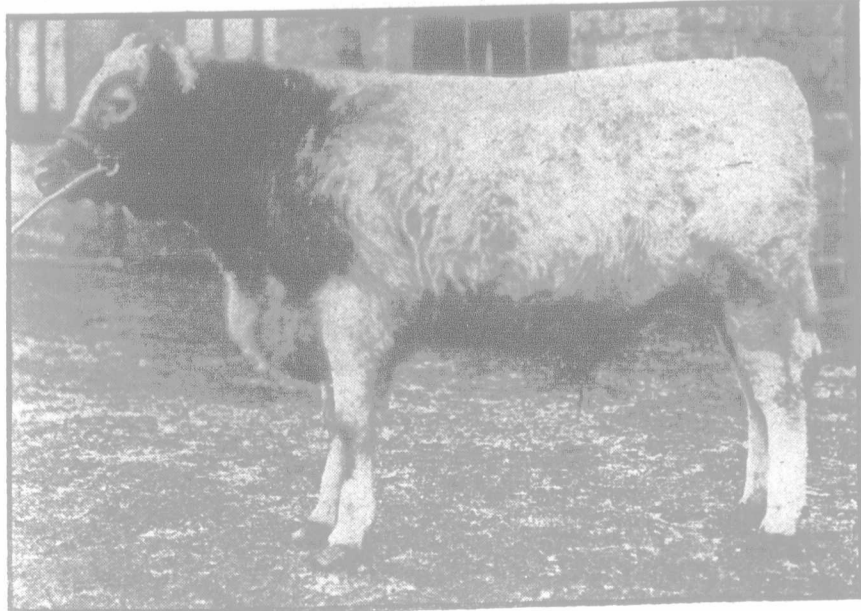
"That barley should be properly supplemented by a protein rich feed was clearly shown by results obtained from lots 3, 5 and 11. In the former two lots a ration of straight barley was fed while in the latter the barley was supplemented by 10 per cent. meat meal tankage.

In lot 3, the barley was fed under the very best conditions possible—it was crushed and scalded for the morning feed, scattered on the ground whole in the afternoon to ensure exercise, and the amount limited so that the sows were always kept a trifle hungry. They were given constant access to water, coal and salt. Lot 4 was allowed just about what they could clean up of straight whole barley without preparation. Furthermore, coal was withheld from this group of sows. Lot 11 was fed under exactly the same conditions as lot 3 with the exception than 10 per cent. meat meal tankage was added. This tankage was fed with the barley slop in the morning, and in the afternoon fed separately in a little warm water. Results are striking. Sows in lot 3 made an average gain in 111 days of 82.83 pounds; in lot 5, 70.33 pounds and in lot 11, the remarkably high gain of 105.66 pounds. A point worthy of note in this connection, is that the gain in weight in lot 3 was to a large extent due to fat rather than body growth, while the sows in the latter lot developed strong rugged frames along with reasonable condition. These gains were made on an average daily grain consumption per 100 pounds live weight of 1.461 pounds in lot 3, 1.788 pounds in lot 5, and 1.723 pounds in lot 11. Lot 3 farrowed 27 pigs, weighing at birth an average of 2.37 pounds and raised 23 or 85.18 per cent. These litters were uneven and a trifle undersized showing that sufficient protein was lacking to properly develop strong, vigorous pigs. Lot 5 farrowed 28 pigs, and raised but 16 or 57.14 per cent.—average birth weight being 1.723 pounds. In this lot two pigs were born totally hairless, five with scanty covering, while others were decidedly lacking in vitality.

"The hairless condition of these pigs, low average birth weight, and unthrifty condition of the sows gives every evidence that whole barley is unsuited to the proper nourishment of either the young growing sow or her unborn litter. The barley-tankage lot 11 farrowed 23 strong, vigorous pigs, weighing the high average of 2.587 pounds, and raised the entire number or 100 per cent. This proved to be the highest percentage of pigs raised of any lot in the experiment. These figures are well worth a little consideration. Whether the advantage of lot 3 over lot 5 was due entirely to a lighter feeding of barley or to the mineral matter provided in the form of coal, or to both, we cannot definitely state. Results obtained in lots fed frozen wheat, under identical conditions, seem to indicate that the heavy feeding is especially dangerous. It is evident that barley alone, even when fed under the very best of conditions, should be avoided as a ration for pregnant sows, but if properly supplemented with a protein rich feed, such as meat meal tankage, it can be fed not only safely but successfully.

Frozen Wheat.

"To answer definitely the question as to whether frozen wheat contained certain poisonous properties, which made it responsible for the large number of hairless pigs following seasons of early frosts, three lots were devoted to this part of the work. Lot 4 was fed straight frozen wheat under the very best of conditions—crushed and fed as a warm slop in the morning, scattered whole on the ground for the evening meal and in addition salt, coal and water were available at all times. The three sows in this lot made an average gain of 81.66 pounds, but their coat was harsh and wiry, showing that the feed was lacking in certain constituents for proper nourishment. Of the 29 pigs farrowed, but 14 were raised or 48.27 per cent. Their average birth weight was 2.086 pounds. These pigs lacked vitality—one was



Hillcrest Lad.

Champion Shorthorn steer at Guelph for J. K. Campbell & Son, Palmerston, Ont.



Jubilee Jilt.

Champion Shorthorn female at Guelph for Jas. Douglas, Ca'lonia, Ont.

practically hairless and several others were scantily clothed.

"Lot 6 was fed whole frozen wheat without preparation, and without the addition of mineral matter in the form of coal. The amount fed was regulated entirely by the appetite of the sows—they were allowed just what they could clean up handily. These gilts made the lowest average gain of any in the experiment with but 58.66 pounds to their credit. They lacked thrift throughout pregnancy and farrowed a large number of hairless pigs—one litter being entirely hairless. Of the 30 pigs farrowed with the low average birth weight of 1.792 pounds, but 15 were raised or 50 per cent.

"Lot 10 was fed frozen wheat under the same conditions as lot 4, with the addition of 10 per cent. meat meal tankage. These gilts made an average gain of 87.33 pounds and were sleek and thrifty at all times. Twenty-two pigs were farrowed, averaging 2.5 pounds at birth, and 21 or 95.45 per cent. were raised. All pigs were strong and active, and gave every evidence of sufficient pre-natal nourishment.

"The grain requirement per 100 pounds live weight throughout the experiment was 1,508 pounds for lot 4, 1,880 pounds for lot 6, and 1,866 pounds for lot 10. With weak, hairless pigs in both lots 4 and 6, it seems that the difficulty is due more to a lack of proper constituents in the frozen wheat itself than to the lack of added mineral matter in the form of coal. At any rate, hairless pigs appeared in lot 4 where the frozen wheat was fed under the best of conditions, the amount limited, and the sows given free access to coal. Results proved conclusively that frozen wheat does not contain poisonous properties resulting in hairless pigs, but if fed as a single feed hairless pigs are to be expected as a result of the deficiency in protein. With the addition of a proper protein supplement, as meat meal tankage, frozen wheat can be fed with every assurance of excellent results.

"Lot 9 was fed whole oats scattered on the ground for both morning and evening feeds and allowed free access to coal, salt and water. These gilts made a rather low average gain of 59.66 pounds and lacked somewhat the thrifty appearance of the frozen wheat tankage and barley tankage lot, but the gain in weight was due to body growth rather than fat. The pigs came large and strong weighing an average of 2.56 pounds at birth. Of the 25 farrowed, 21 were raised or 84 per cent. In this case, the grain consumed per hundred pounds live weight throughout the period was 1,559 pounds. No doubt more feed would have been consumed and larger gains made if the morning feed had been crushed, scalded and fed as a warm slop, for as with all classes of animals, brood sows like variety. Oats prove to be a well-balanced feed for pregnant sows and should make up a large part of the ration in a country so well adapted to oat production.

Exercise.

"Many swine producers have attributed hairlessness in young pigs to insufficient exercise during pregnancy. It is common belief that the greatest losses follow long severe winters when the sows spend the greater part of their time in the straw pile, or under other protection. To secure data on this point, three gilts were placed in a 6 x 7-foot frame house with the addition of a 4 x 14-foot runway. These sows were fed the same kind and practically the same amount of feed as check lot 1 with the exception that the evening feed of oats was crushed and fed in the form of slop to prevent exercise. Several hog men visited the farm during the experiment and all predicted poor results from this lot, for the gilts took very little exercise, and hence became exceedingly fat, leading all lots in average gains for the period with 120 pounds per head to their credit. In all, 26 pigs with an average birth weight of 2.43 pounds were farrowed in this lot, and 20 or 76.92 per cent. raised. All pigs came strong and were normal in every respect. It should be borne in mind that old sows became excessively fat and sluggish and tend to crush a large number of their young, while gilts were used in this test, and hence, there were no losses from this source. Furthermore sows confined in cramped quarters are often subject to unsanitary conditions. The importance of an abundance of exercise for young pigs in preventing thumps and the like is well-known to all. It should be understood that this Department does not recommend limited exercise for pregnant sows—far from it, we insist on plenty of outdoor work for all breeding stock. This experiment, however, leads us to the conclusion that lack of exercise is not the cause of hairlessness in new born pigs.

Forcing Sows to Eat Snow.

"Quite a number of farmers have followed the practice of forcing sows to eat snow in place of providing water during the winter months. Oftentimes these men suffered heavy losses from hairless or weak pigs and naturally credited their pigs' troubles to this method of watering. To secure information on this point, three sows were placed in lot 8 and fed the same rations as lot 1 with the exception of the garbage, which had to be eliminated on account of the moisture content. All grains were fed dry. The last snow of any consequence disappeared on March 27th, so that but one gilt farrowed under these conditions—her litter of 8 pigs, weighing but 12 pounds, or an average of 1.5 pounds each. One pig came dead, another died in a few hours and two others within the next two weeks so that she raised but four. These sows made low gains during the winter months, lacked thrift and were badly tucked up in the middle. The other two sows made fair gains during the balance of the spring, so that the average gain for the period was 76.33 pounds, and the average birth weight of pigs for the lot 2.155 pounds. Of the 29 pigs farrowed, 19 were raised or 65.51 per cent. Due to the fact that two of these sows farrowed some time after the last snow disappeared and water was provided, this part of the experiment will be given further attention during the coming

winter. Such results as were obtained would indicate that hairlessness cannot be attributed to this practice, but that far better results would follow free access to water.

Importance of Sunlight.

"To determine the influence of sunlight on the unborn litter, three sows were wintered in a large 30 x 40 feet shed with 7-foot walls. This shed was constructed with poplar poles and straw—the walls being two feet thick, tightly packed with straw, and the roof covered with the same material to a depth of 18 inches. The two doors facing the south were then made light proof, so that it was impossible to discern a single object inside the building. All sows were placed in the shed on December 17, 1917. The first farrowed March 21st, the second April 23rd, and the last one May 20, 1918, so that the latter was kept under these conditions for a little over five months. With the exception of time of feeding, they were fed just as in lot 1. To ensure sufficient exercise, the morning feed was given at 8 a.m. then garbage at 11 a.m.; water again at 1 p.m., and whole oats scattered in the bedding at 3.30. By this means the sows were on their feet a good share of the day, so that the only difference from conditions as found in lot 1 was the lack of sunlight and less fresh air, due to the complete closing in of all walls. The only ventilation possible was through the straw covering over the roof. These sows made an average gain of 96.33 pounds during pregnancy, farrowed 29 pigs weighing an average of 2.2 pounds, and raised 25 or 86.20 per cent. All pigs came strong and gave no evidence of the peculiar method of housing. It is again wished that swine breeders place the proper interpretation on this part of the experiment. A continued practice of this sort would soon lead to an outbreak of disease, for such quarters soon become unsanitary. Furthermore, every effort should be put forth to make every possible use of nature's greatest purifier—sunlight. These results show that weakness or hairlessness in pigs cannot be rightly attributed to lack of sunlight during the period of pregnancy.

Successful Rations for Pregnant Sows.

"During this experiment, the following rations proved successful. Weights of sows and daily rations here shown were the average for the three sows in each lot during the entire pregnancy period.

1. Gilts weighing 265 pounds—

WHEN FED

WHEN FED	MIXTURE	AMOUNT FED PER SOW PER DAY
A.M.	Crushed oats, 3 parts Crushed barley 3 parts Bran 3 parts, Tankage 6 per cent.	1 pound in form of slop.
Noon	Garbage or kitchen refuse.	7 pounds thoroughly cooked.
P.M.	Whole oats.	1 1/2 pounds scattered on ground
	Water, salt and coal at will.	

2. Gilts weighing 225 pounds—

WHEN FED

WHEN FED	MIXTURE	AMOUNT FED PER SOW PER DAY
A.M.	Whole oats	1 1/2 pound scattered on ground.
P.M.	Whole oats	1 1/2 pound scattered on ground.
	Water, salt and coal at will.	
	Variety would be added to this ration by crushing the morning feed of oats and feeding in the form of slop.	

3. Gilts weighing 215 pounds—

WHEN FED

WHEN FED	MIXTURE	AMOUNT FED PER SOW PER DAY.
A.M.	Ground frozen wheat.	1.8 pound fed as slop.
P.M.	Tankage, 10 per cent. Tankage. Frozen wheat, whole.	0.17 pound fed in warm water. 1.66 pound scattered on ground.
	Water, salt and coal at will.	

4. Gilts weighing 220 pounds—

WHEN FED

WHEN FED	MIXTURE	AMOUNT FED PER SOW PER DAY
A.M.	Ground barley.	1.8 pound fed as a slop.
P.M.	Tankage, 10 per cent. Tankage. Whole barley.	0.17 pound fed in warm water. 1.66 pound fed whole on ground.
	Water, salt and coal at will.	

5. Sows weighing 370 pounds—

WHEN FED

WHEN FED	MIXTURE	AMOUNT FED PER SOW PER DAY
A.M.	Crushed oats, 5 parts Crushed barley, 2 parts.	2 pounds fed in slop form.
P.M.	Wheat bran, 3 parts. Whole oats.	1 1/2 pound scattered on ground.
	Water, salt and coal at will.	

Conclusions.

1. Frozen wheat as a single feed, even though fed under the best conditions, resulted in weak hairless pigs.
2. With 10 per cent. meat meal tankage added to a straight frozen wheat ration, sows wintered in excellent condition and produced strong, vigorous litters.
3. Farrowing troubles have not been due to certain poisonous properties in frozen wheat, but to a deficiency of necessary feed nutrients.
4. Barley alone should not be fed to pregnant sows. When fed under the very best of conditions sows had a tendency to lay on fat rather than body growth and their pigs were somewhat small and lacking in uniformity. Sows fed a heavy barley ration without additional mineral matter farrowed small weak litters with some pigs totally hairless and others scantily clothed.
5. Barley plus 10 per cent. meat meal tankage resulted in sows making excellent gains, farrowing strong vigorous pigs, and in this instance raising every pig farrowed.
6. Sows wintered on whole oats made rather low gains, but these gains took the form of growth rather than body fat. The litters came strong and uniform.
7. Lack of sunlight and limited exercise do not cause hairless pigs. Such conditions are undesirable for other reasons.

Results obtained in this experiment on the question of forcing sows to eat snow are not complete, but point to the fact that better results would follow liberal watering. Water with the chill removed is to be preferred.

9. If additional mineral matter is needed, it can be provided easily and cheaply by giving the sows access to fine coal. At any rate, sows relish this addition to their regular grain ration.

10. Pigs appreciate variety as well as people, so make use of the kitchen refuse or garbage. If thoroughly cooked, it can be safely fed to pregnant sows.

11. A greater number of weak or hairless pigs were farrowed in early than in late litters. All pasturage was withheld from late farrowing sows so that feed conditions were identical to the other sows in the lot. The cause of this difference was not determined.

12. In this experiment protein was added to carbohydrate-rich rations by the use of 60 per cent. meat meal tankage. Where this feed is not available, the necessary protein can be supplied by utilizing skim-milk, butter-milk or flax seed oil meal—all high in this important body requirement.

Pregnant sows must be well fed. In this experiment every sow that was properly fed, farrowed a good average litter regardless of other conditions. For continued success in avoiding outbreaks of disease, however, the breeder must use as much intelligence in the care and management of the bred sows as in the selection of the ration.

Although these experiments were carried on in Western Canada, the results and conclusions derived should be of practical benefit to Ontario swine breeders. The rations fed in the West are similar to those in common use in Ontario. Considerable barley is grown and fed, and some years wheat which has been frosted is shipped East and fed in considerable quantities. In order to secure the maximum results with hogs, the breeder must exercise a good deal of care in the handling of the brood sows, and also in compiling rations for pigs of different ages. Undoubtedly the results of the experiment tests and the recommendations as set forth by Prof. Dowell in the above paragraphs will be of value to many an Eastern farmer. In order that hog raising be remunerative, strong, thrifty pigs must

be farrowed and then fed and cared for so as to maintain their vitality. Heavy mortality can usually be traced to some discrepancy in the care of the pregnant sow or in improper feed previous to and after farrowing. Pigs born hairless or with but scant covering of hair are a source of immense losses in some hog raising sections. Familiarity with the cause of this abnormality should result in a lessening of or prevention of the trouble.

Mineral Requirements of Hogs.

Anyone familiar with the feeding of hogs knows that much crude or raw mineral matter is consumed by them, aside from that actually contained in the food eaten, and known technically as the ash content. While a general statement as to the mineral or earthy requirements of the hog may be made, certain abnormalities may appear at various stages of the animal's existence due to a definite lack of some vital constituent in an apparently perfectly balanced ration, this lack due, in turn, to the absence of the required mineral or salt in the soil that grew the foods. Here, of course, specific feeding is required.

In general, pigs under summer or outdoor conditions supply their own wants in the foregoing connection, consuming earth, slate, weathered stones, ashes, wood,

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etc. If they are pen-fed, some two or three of these easily available materials may be supplied. Even under out-door conditions, however, many large feeders provide supplemental mineral and corrective feed. Of these, charcoal in various forms, ground rock phosphate, ground limestone, slaked lime, bone meal, wood ashes, salt, etc., are the most important. A readily accessible supply of a mixture of the above is advised as a general corrective of possible deficiencies in the mineral constituent as supplied by the regular ration.

General Recommendations.

For Breeding Stock in Winter.—Sods, earth and ashes are easily supplied. Charcoal may be purchased in various degrees of coarseness or may be supplied from charred corn-cobs or wood. Aside from the value of its mineral constituent, charcoal is an excellent tonic and corrective. Where the spring litters lack evidence of strong, bony structure, a mineral deficiency of the dam's ration during gestation is often responsible, where other probable causes are difficult to ascribe. Hairless pigs at birth, a phenomenon difficult to explain definitely, would seem to have as one of the several probable causative conditions, some mineral lack in the blood flow of the dam. Feeding the pregnant sow a mixture containing charcoal, ground rock-phosphate, slaked lime, wood ashes, and salt will frequently prevent the condition. These constituents are cheap and easily procurable. Aside from their value as a natural food in winter, roots supply much mineral constituents in themselves and in the earth which usually accompanies them.

For the Sucking Pig.—The winter farrowed litter should have access to earth, sods and ashes, as soon as they begin to run about. This with the milk of a properly-fed dam will usually suffice. Early spring litters should be similarly supplied and allowed to run outside at the first possible moment.

For the Fattening Pig.—Fattening hogs, particularly if pen-fed, should be supplied with a general mixture. A box kept filled, or a self-feeding device, will allow the hog to appease the demands of the system. Here, with the heavily-fed hog, charcoal in some form is particularly indicated both from the mineral and medicinal standpoint. Rock phosphate, bone meal, slaked lime and granulated charcoal would supply practically all of the necessary elements. Some doubt exists as to the necessity of salt for hogs. All domestic animals require it in greater or lesser quantities. With the hog it is preferable to allow free choice rather than to force the consumption of definite quantities. Salt, therefore, should be added to all mineral or corrective mixtures.

In most localities simple home-procured mineral foods, as mentioned, will prove sufficient. To the feeder who wishes to leave no stone unturned or in localities where there is evidence of a lack of necessary plant food a more diversified mixture would be indicated. The quantities consumed are so small, comparatively, that the cost will prove almost negligible. The growth and development of hogs, with rations so supplemented, cannot be injured and, in most cases, will likely be greatly benefitted.—Experimental Farms Note.

Sale Price of Prize Bullocks.

At the Fat Stock Show there is usually keen competition in the classes for individual bullocks ready for the block, and also in the car lots. It is considered a high honor to win a championship at such exhibitions as the International, Guelph Winter Fair, or the Toronto Fat Stock Show. To select a feeder that will do well, lay the flesh on smoothly, and be just prime at show time is an art as yet acquired by comparatively few men. To select a car-lot of feeders and fit them for competition requires even greater skill than preparing a single entry. The championship at such fairs as above mentioned not only carries honor, but a bullock or carload of bullocks, which is considered the best of all breeds in competition is eagerly sought after by the large abattoirs.

At the Chicago International a carload of yearling Herefords won the grand championship in competition with fifty-eight entries representing the three beef breeds and crosses thereof. They were a choice lot and were shown by a young man who had not become discouraged by defeats on former occasions. He always came back, and this year he reaped his reward. This carload of yearlings, averaging 1,126 pounds, was purchased for a packing house at fifty cents per pound. There is usually a keen rivalry between the packing houses for the grand champion steer, which has resulted in the price mounting higher each year. Fyvie Knight 2nd, the 1918 grand champion steer at Chicago brought \$2.50 per pound. The following table gives the prices paid for grand champion steers and car-lots for the past sixteen years, and also gives the breeding of the winners. It will be noticed that the Doddies are considerably ahead in both the car-lot and individual classes. While prices for champions at Canadian Fat Stock Shows do not equal those received at the International, they are remunerative and pay the breeder for the extra pains taken in selecting and fitting an animal to win a championship.

Individual Steers.

Year.	Name	Breed	Per lb.
1918	Fyvie Knight 2nd	Angus	\$ 2.50
1917	Merry Monarch	Shorthorn	2.10
1916	California Favorite	Here-Short.	1.75
1913	Glencarnock Victor II	Angus	Not sold
1912	Glencarnock Victor	Angus	.50
1911	Victor	Angus	.90
1910	Shamrock 2nd	Angus	.60
1909	King Ellsworth	Angus	.18

Year.	Name	Breed	Per lb.
1908	Fyvie Knight	Angus	.26 1/2
1907	Roan King	Shorthorn	.24
1906	Peerless Wilton 39th's Defender	Hereford	*
1905	Black Rock	Angus	.25
1904	Clear Lake Jute 2nd	Angus	.36
1903	Challenger	Mixed	.26
1902	Shamrock	Angus	.56
1901	Wood's Principal	Hereford	.50
1900	Advance	Angus	1.50

Carload Lots.

Year	Owner	Breed	Per cwt.
1918	J. W. Frazier	Hereford	\$50.00
1917	Ed. P. Hall	Angus	42.50
1916	Ed. P. Hall	Angus	28.00
1913	Escher & Ryan	Angus	13.25
1912	Ed. P. Hall	Angus	14.00
1911	Escher & Ryan	Angus	15.75
1910	Ed. P. Hall	Angus	13.50
1909	Oglesby & Keays	Shorthorn	15.00
1908	Funk Bros.	Angus	11.00
1907	G. Krambeck	Angus	8.00
1906	Funk Bros.	Angus	17.00
1905	Krambeck	Angus	8.65
1904	Krambeck	Angus	10.50
1903	Herrin	Hereford	8.35
1902	Escher	Angus	14.50
1901	Black	Hereford	12.00
1900	Kerrick	Angus	15.50

High-Priced Bulls and Cows.

The year 1918 will long be remembered for its exceptionally high prices for live stock. While in past years very satisfactory prices have been obtained, 1918 has eclipsed them all in this respect. No one breed enjoys all the popularity; practically every breed has been making history, and the sales are a gauge as to the extent of the popularity. The "Live Stock Journal," published in England, recently printed a list giving the names of the animals which have been topping the sales. Some of the animals date back as far as 1810. It is rather interesting to note the ups and downs in prices during a period of years. During the seventies remarkably high prices were paid for Shorthorn cows and bulls; in fact, some of the figures are very close to those received in 1918. The following list, taken from the "Journal" may be of interest to many of the breeders. Undoubtedly many more names could be added, but it gives an idea of the breeding of the animals which have been bringing top prices. Practically all the individuals were owned in England and Scotland, the home of our beef breeds. Comparatively few Aberdeen-Angus are mentioned. The prices are given in guineas and pounds. To reduce these to Canadian currency, a guinea or a pound is approximately five dollars.

Shorthorn Bulls.

Year	Bull	Price in Gs.
1810	Comet	1,000
1873	Second Duke of Oneida	2,400
1873	Fourth Duke of Oneida	1,520
1875	Duke of Connaught	4,500
1875	Third Duke of Hillhurst	3,000
1877	Seventh Duke of Gloucester	1,850
1878	Duke of Oxford 44th	1,650
1878	Duke of Oxford 45th	1,500
1905	Bapton Favorite	1,200
1906	Ruddington Prince Christian	1,100
1918	Rubicon	1,450
1918	Balnaben Gipsev Lad	2,000
1918	Cluny Sir Augustus	2,000
1918	Beaufort Snow King	1,650
1918	Thornby Premier*	2,000
1918	Pride of Millhills	3,100
1918	Proud Conqueror	3,200
1918	Fairlawne Air Raid	2,500
1918	Edgcote Magnet	1,300
1918	Collynie Royal Regent	4,200
1918	Collynie Sunrise	2,400
1918	Collynie Cavalier	2,500
1918	Notlaw Darnley	1,600
1918	Notlaw Nimrod	2,000
1918	Notlaw Nimrod	£4,364
1918	Rodney	£4,000
1918	Pearl Hunter 2nd	£8,000
1918	Moresby Fusilier	£1,000

*Dairy Shorthorn bull (yearling).

Shorthorn Cows.

Year	Cow	Price in Gs.
1873	Eighth Duchess of Geneva	8,120
1873	Thirteenth Duchess of Thorndale	3,000
1873	Tenth Duchess of Geneva	7,000
1873	First Duchess of Oneida	6,120
1873	Third Duchess of Oneida	3,120
1873	Fourth Duchess of Oneida	5,000
1873	Seventh Duchess of Oneida	3,800
1873	Eighth Duchess of Oneida	3,060
1873	Tenth Duchess of Oneida	5,400
1875	Red Rose of the Isles	1,950
1875	Oxford Duchess 2nd	1,000
1875	Marchioness of Oxford 3rd	1,810
1875	Red Rose of Balmoral	1,280
1875	Highland Flower	1,500
1875	Bright Spangue	1,055
1875	Bright Empress	2,160
1875	Bright Marchioness	1,135
1875	Riby Marchioness	1,260

Year.	Cow.	Price in Gs.
1877	Third Duchess of Hillhurst	4,100
1877	Fifth Duchess of Hillhurst	4,300
1877	Thirteenth Duchess of Airdrie	2,200
1877	Tenth Maid of Oxford	1,605
1877	Thirteenth Lady of Oxford	1,900
1877	Eleventh Maid of Oxford	1,400
1878	Grand Duchess of Oxford 21st	1,550
1878	Grand Duchess of Oxford 22nd	2,100
1878	Baroness Oxford 5th	2,660
1878	Grand Duchess of Oxford 38th	1,450
1878	Grand Duchess of Oxford 40th	1,600
1884	Grand Duchess 39th	1,060
1884	Grand Duchess 41st	1,005
1884	Grand Duchess 42nd	1,120
1918	Violet Crest	1,800
1918	Proud Duchess of Gloucester	1,550

Hereford Bulls.

Year	Bull	Price
1884	Lord Wilton*	3,800 gs.
1899	Sir Bredwell	£1,000
1900		£1,020
1900	Columbus	£1,500
1917	Quilmes Fanfare	£2,180
1902	Perfection	£1,800
1902	Crusader	£2,000
1918	Dillon	£4,364
1918	Ardmore	£6,200
1918	Ringer	£9,450
1918	Sir Sam	2,300 gs.
1918	America	1,150 gs.
1918	One Royal	3,500 gs.
1918	Resolute	8,000 gs.
1918	Xmas Gift 2nd	1,200 gs.
1918	Twyford Hampton	2,000 gs.
1918	Twyford Ringer	2,100 gs.
1918	Reformer	1,450 gs.
1918	Howard Dare	£1,200

*Knocked down at that price; purchase not completed; subsequently sold for 1,000 gs.

Hereford Cows.

Year	Cow	Price
1901	Dolly 2nd (with calf)	£1,000
1902	Miss Zenobia	£1,000
1918	Olive Iris 3rd	£2,770
1918	Disturber's Lassie 12th	£1,000
1918	Matron Donald	£1,400
1918	Maples Lass	£1,540
1918	Madame Donald 2nd	£1,420
1918	Wetmore Emerald	2,000 gs.
1918	Augusta	1,200 gs.
1918	Sheepcote Opal	1,150 gs.

Aberdeen-Angus Bulls.

Year	Bull	Price
1918	Eilenach of Harviestoun	1,400 gs.
1902	Prince Ito	£1,820
1913	Rubelate of Maisemore	£1,043
1916	Idart of Maisemore	£1,904
1917	Jolly Eric	£997 1/2
1918	Jerry of Theobalds	£908
1918	Imperialist of Charles	£874

Aberdeen-Angus Cow.

Year	Cow	Price
1902	Blackcap Judy	£1,260

THE FARM.

How to Calculate Gallons of Water in a Cistern.

EDITOR "THE FARMER'S ADVOCATE":

The following table contains the information that will be used in this article:

- A cubic foot contains 6 1/4 gallons.
- Thirty-two cubic feet of water weighs 1 ton.
- A gallon of water weighs 10 pounds.
- A barrel contains 31 1/2 gallons.

To find the number of gallons in a rectangular cistern or tank, multiply the length in feet by the width in feet by the depth in feet by 25, and divide by 4.

Example 1.—A cistern is 6 ft. wide, 8 ft. long and 10 ft. deep. Find the number of gallons of water it will hold.

Solution.—Multiplying 6 by 8 by 10 by 25, we get 12,000. Divide by 4, and the answer is 3,000 gallons.

Example 2.—A cistern 6 ft. wide, 8 ft. long and 10 ft. deep contains 2 ft. of water. How many gallons does it contain?

Solution.—Multiplying 6 by 8 by 2 by 25, we get 2,400. Divide by 4, and the answer is 600 gallons.

To find the number of gallons in round (cylinder-shaped) cisterns or tanks, multiply half the diameter by half the diameter by the depth by 275, and divide by 14.

Example 3.—A cylinder-shaped cistern is 7 ft. deep and its diameter is 8 ft. How many gallons of water will it hold?

Solution.—Multiplying 4 by 4 by 7 by 275, we get 30,800. Dividing by 14, the answer is 2,200 gallons.

A gallon of water weighs 10 pounds. Hence the weight of water in the cistern in example 2 is 600 multiplied by 10, or 6,000 pounds or 3 tons. Also, the weight of water in example 3 is 2,200 multiplied by 10 equals 22,000 pounds or 11 tons.

To find the number of barrels of water in a cistern,

multiply the number of gallons by 2 and divide by 63. In example 2, multiplying 600 gallons by 2 we get 1,200. Divide by 63 and the answer is about 19 barrels. By using this method in example 3 the number of barrels is found to be 70 nearly, (it lacks 5 gallons).
Ontario Co., Ont. NELSON McDOWELL.

A Plan to Secure Peace Without Going to War.

The Society of Friends or Quakers at Coldstream, Ontario, have expressed the sentiments embodied in the following paragraphs, and present them to the thinking people of the world as a basis for permanent peace:

"The world is sick of war. In this present conflict, as never before, it sees the utter folly of self-destruction. It is as if a man's arm should cut off his head through hate or envy. But man is one. So is the world one. And God designed that every part should help every part. Give the nations an assurance of security and they will never grasp the sword again. Even if a nation should desire to, she would 'be prohibited'; her arm would be powerless and there would be no sword to grasp.

Following the proposed plan, peace would work out automatically, and every nation, large or small, could rest secure in its legitimate pursuits, and follow unmolested its unselfish destiny. It would bring not a temporary armistice, but a never-ending inviolable peace.

"We sanction and advise the following, to take effect and be applied as a part of the stipulation in the readjustment of international relations at the conclusion of the present war:

"1. A 'World Federation' and 'Court' shall be established, composed of representatives from all nations.

"2. A universal system of arbitration, sanctioned by all nations, through their representatives.

"3. National and international disputes, not settled by other means, shall be submitted to local arbitration; failing decision there, appeal may be made to the 'World Court,' whose decision shall be final.

"4. International land, naval and aerial forces shall be created for police purposes, to be directed by the 'World Court,' internationally or nationally.

"5. The Government control, by each nation, of the manufacture of all articles that may be used in any way for such purposes.

"6. A simultaneous gradation to a final complete disarmament by all nations.

"7. Free exchange of legitimate commodities between nations. (Undesirable immigrants and harmful imports may be prohibited by the country of destination.)

"8. Free passage upon all natural international waterways for legitimate traffic.

"Every nation shall be represented by their Ambassadors and Consuls in every other nation, and it shall be part of their duties, and they shall be invested with the power, to see that no violation of any of the foregoing stipulations occur; and in case of such violation, they are to apprise their home Governments, when appeal can be made to the 'World Court,' which shall consider the case and pass judgment thereon. If the violation is still persisted in, as a final resort, said nation shall be penalized by withdrawing from it all trade on the part of the rest of the world, but in other respects friendly relations are to be maintained.

"We trust and pray that sufficient pressure may be brought to bear upon the authorities of all nations that such a consolidated international Council shall be formed, and laws provided for its guidance that shall speedily insure a lasting world peace."

What Are Our National Resources?

BY F. S. JACOBS.

It is one of the hopeful signs of the times that the Editor, of a paper so widely read and highly esteemed as the "Farmer's Advocate" should raise the question as to what actually are our "National Resources". More of us have heard the welkin ring as politicians and patriots declaimed upon our Natural Resources but "National Resources" are not just the same thing although they should receive as much attention. Natural resources have been flaunted before our eyes because they are forms of wealth in Nature that have been available for private gain and exploitation, but "National Resources" are those forms of wealth or human energy which the nation, the Federal Government, may use as it deems best.

In the past four years our National Government acting for the great majority of Canadian citizens has piled up a debt, by borrowing and spending upon war account, greater than we ever dreamed could be possible and now we are confronted with the necessity of paying interest upon this debt and reducing it. This raises the question "where is the money coming from?" and the answer is from "National Resources." So we as a people must take stock of our "National Resources." We must look over our assets and try and discover a way to make them balance our liabilities. Those who take an interest in public affairs are regaled annually with a budget speech or financial statement of the institution known as the Dominion of Canada. These statements generally tell us how much we have spent and how the money to meet the expenditures has been raised, but they have not, as with most business concerns, given a list and value of "National Resources" or the value of assets still left to carry on further functions of government. One reason for this is that some "National Resources"

cannot be valued in dollars and cents. For instance, a definite value cannot be placed upon the capacity of people to pay taxes. But let us see what these "National Resources" are.

First. Labor.—The industry of the people.

Second. Land Labor.—The fertility of the soil, the extent and value of lands, forests, mines and fisheries.

Third. Capital.—Wealth of all kinds that has been accumulated and that may be subject to taxation for purposes of revenue, or used to give service.

So we have land, labor and capital as the national storehouses of wealth from which we may draw or authorize our Government to draw to pay off the expenses of the war and carry on necessary work.

It has been the custom of Governments to use "National Resources" of labor (industry) to the very utmost in raising revenues. In Canada the method is to make a list of the things people buy from outside countries and to put a tax on these articles as they enter Canada.

When the people work hard and intelligently and crop conditions are favorable they have an increase of goods to send abroad and an increase, in the things they buy abroad and upon which they pay duty or taxes. This industry is taxed. And as the amounts that may be raised this way are by no means certain from year to year, we never get a national statement showing the cash value of this asset. Industry is taxed in many other ways, such as increase in postage, taxes on incomes, taxes on railway tickets, theatre tickets, etc. etc. The idea is to get money, where money is most in evidence.

In Canada "National Resources of the second kind, that is, land, using the term in its broad sense, are not used extensively to raise revenue. The people have an immense heritage in these natural resources. Great stretches of farming land have as yet not been acquired from the Government by homesteading or purchase or by free grant. Only superlatives of language can convey an idea of the wealth of timber, coal, metals, water power, fisheries, etc., that belong to the people as a whole. Yet very little revenue relatively, is derived from such sources. Also natural resources already acquired from the crown by private parties increase in value constantly by reason of the growing need for and demand for such resources. It is in neglecting to recover this value that governments have been most remiss in the past.

In dealing with the "National Resources" in land, the Canadian Government should value these and place them before the public by the most approved methods of salesmanship. Some of these, like water power, should so be handled as to prevent them being monopolized, others should be sold with the understanding that a substantial proportion of the increase in value should go to the Government. A broad progressive policy of development for the primary good of the nation should govern the administration of "National Resources" in land.

Just by way of showing how much wealth properly belonging to the people escapes from the public to private hands, under our present tax system recall how land values increased in Western Canada the last 18 years. In Winnipeg, Calgary, and Vancouver this increase in the years 1909 to 1914 was more than equal to our last Victory Loan. This value was created by all the people, yet it went into the hands of those only who "owned" the land.

In the matter of administering our mineral resources, there also has been the most lax and unscientific method. In 1914 when the Alberta oil boom flared up we had a demonstration of how our system works. When a man or company wished to drill for oil he or it paid the Government 25 cents per acre for mineral rights, but the "owner" of the land was paid any price at all to obtain the use of his land. The owner of the half section adjoining my place refused \$100 per acre. I cite these instances of land value increases going to enrich individuals and of the cheapness of oil or minerals belonging to the people to show that sources of "National" revenues from "land" offer a wide field for exploitation in the public interest.

I need not attempt here to answer all or any of the objections that are raised against the practice of taxing land values. There are objections to all forms of taxation, but the unfortunate fact remains that we must raise revenues and we should raise them by the most equitable and just means possible and as far as possible from land and capital rather than from human energy which has contributed so generously to the glorious chapters of Canadian History which closed on November 10.

Capital or the product of labor applied to land, that is used upon raw materials, requires so much energy and skill in its gathering that we seem to hold it in sort of sacred awe. We abuse labor and laborers, and dissipate our natural resources in a most prodigal manner, but capital we hoard and worship just as blindly and stupidly as did the Israelites the calf of gold that Aaron made them on the road from Egypt to Palestine.

Our "National Resources" in capital do not appear in the form of money only. They may be in the form of bonds about which the public has learned a lot the last few months, or they may be as stocks representing part ownership of railways, industrial plants, banks, mercantile institutions, or in many other forms. For public uses capital in these various forms may be taxed, that is a part of the increase which invariably accrues to capital and which is called profits may be taken by the Government. This "National Resource" is one that will probably be worked harder in the future than in the past for the reason that a large element of the population which laid its all on the altar of National duty will insist upon a large measure of conscription of wealth, of capital.

If we had a system of taxation by which we might levy toll at the point of the creation of capital, where

labor is applied to land, then we should not need to tax labor, land and capital in the round-about manner we now employ. What I mean is that we should have a system by which values which are created by reason of the combined industry of the people as a whole, using capital, would accrue to the National Government. The case of the rise in reality values in Western cities mentioned above, is an illustration of what I mean. Another illustration may be taken from the record of development of the C. P. R. This is an institution which is now valued at nearly a billion dollars. This value is not derived from the investment in the company of a billion, but by reason of fact, that an increasing population used the C. P. R. service and so increased the opportunity of the owners of the road to accumulate capital. If our Government had exercised its right to tax the C. P. R. right of way (land) it could have derived a very considerable portion of this value, which the public created for the purpose of public betterment.

In considering "National Resources" we must not overlook our capacity to deny ourselves some of the things we think we must have, or in other words the resources of public economy. In our days of expansion many municipalities insisted upon having large expenditures of public funds. Customs houses, post offices, harbors, armories, etc. etc. were virtually demanded from the Federal Government, as the price of political support. To state the case bluntly, a constituency which elected an able member to support the Government gave the Government to understand that this support had to be paid for with public buildings or works. Such methods, of course, are a dissipation of "National Resources" and in order that we may pay our war debt in reasonable time we must conserve as well as utilize our "National Resources."

Our national problem then is to know clearly all forms of "National Resources" and to proceed to realize upon them with the least possible drain upon human energy and the utmost possible use of inanimate forms of wealth.

Advises Returned Men Not to Hasten to the Land.

EDITOR "THE FARMER'S ADVOCATE":

On every hand there seems to be a widespread agitation to place as many as possible of our returned men on the land and, according to reports published recently, about 75 per cent. of the men themselves desire this. Our men are to be commended for their energy and keen desire to get back to productive work again, but it would be folly for them to rush blindly into farming on a wave of mere patriotic enthusiasm even if they have already had some practical experience in the work. During the past four years the farmers of Eastern Canada have enjoyed such a measure of well-merited prosperity as the present generation never before saw. The contrast between these and previous years is so great that naturally the casual observer sees in farming an excellent business opening for the returning soldiers.

A short time ago the writer had the opportunity of visiting the home of one of the most successful farmers in a certain rural district. On being shown over the farm we saw a group of modernly equipped buildings and a well-stocked farm representing an investment of at least \$25,000.00. The farmer himself was a comparatively young man, and a short conversation revealed the fact that he possessed more than the average amount of ability. Among other things, I inquired how he had secured help during the past season, and he told me he had been fortunate enough to obtain the services of one man in addition to the help of an elderly father and a younger brother. He seemed pleased we had called, and as we were leaving gave us a cordial invitation to drop in again when we could. This man, so I was informed, cleared \$1,000 from his farm last year, and the knowledge of his success added interest to my visit. Since that day though, I have been wondering just how much money he actually made. He and his neighbors believed he had made a straight thousand dollars, but viewed from a purely business standpoint, turn it around as I will, I can only see that the co-operation of the entire family enabled them to earn just a fair living and pay 4 per cent. on the capital invested. It would seem then that this is about the best an experienced man taking up mixed farming can expect to do under the most favorable conditions. What, then, can the average man expect when normal conditions are re-established?

Prior to 1915 the writer has seen first-class potatoes fed to live stock because the market price was only 25 cents per bushel; hay sold for \$8.00 per ton, little more than the value of the plant food it contained; finished hogs selling for less than the market price of the feed they had consumed. These are the possible conditions toward which we are hastening. It is frequently said that such a state of affairs will never again be seen, but in spite of all such assurances I am convinced that sooner or later, possibly not for a few years but eventually, we shall find the farmers in just as poor a financial state as ever unless they are organized and better prepared to protect their rights than they have been in the past.

I do not wish to deter any returned man from entering the ranks of "the noble sons of the plow" if his abilities and inclinations lead him in that direction. But I do think every man who considers taking up farming should carefully weigh the pros and cons before making his decision; and then if he decides that the free, out-of-door life is compensation enough to offset the long hours and prospect of short dividends, let him go into it whole-heartedly, ally himself with some

progressive farmer's organization and endeavor to make agriculture the keener, the most up-to-date and the most successful business in this country. If any man is not prepared to accept the idea he should not attempt to farm, for he will not be a financial success for himself nor a great asset to the country in which he lives.

Wellington Co., Ont.

E. L. EATON.

The Thirteenth Maritime Seed Fair.

EDITOR "THE FARMER'S ADVOCATE":

The quality of the exhibit at the thirteenth Maritime Seed Fair surpassed that of any former seed fair held in the Maritime Provinces. Such was the expression of opinion of many seed specialists who attended the Fair, and who have been in close touch with all seed fairs held in the Maritime Provinces. The Fair was held on December 11, 12 and 13, at Summerside, Prince Edward Island. In former years it was held in conjunction with the annual Fat Stock Show, at Amherst, N. S.

Many speakers at the various meetings made reference to the improvement from year to year in the quality of the seed exhibited. They said that at the seed fairs held many years ago at both Amherst and Summerside (fourteen annual Provincial Seed Fairs have been held at Summerside) there was a very marked difference between the quality of the seed capturing the first and of the last prizes, and that if the same quality of seed were shown to-day probably few prizes would be awarded. The exhibitor, they said, has been trained through the medium of seed fairs to know what good seed is and he now knows that it is useless to show anything of inferior quality. At the fair just ended the first prize seed was invariably excellent and the last prize not much inferior.

The Exhibits.

In certain sections the entries were not so numerous as on some former occasions. The grain exhibit was wonderfully free from weed seeds and from other varieties and kinds of grains. The entries of Banner oats, the variety most commonly grown in the Maritime Provinces, were numerous and the competition keen. Potatoes occupied a large space and they showed careful and intelligent selection. Several entries of timothy seed were of an exceptionally high quality. Wheat, barley, buckwheat, turnip, mangel, clover and other seeds were shown creditably. Only one entry of red clover and one of alsike were on exhibition.

The special sweepstakes trophy, awarded by The Steele Briggs Seed Company, Toronto, to the members of the Canadian Seed Growers' Association making the most creditable showing of not more than three varieties of selected seed was won by Richard Creed, Albion, P. E. I. Mr. Creed won the same trophy in 1914. The Silver Cup donated by S. J. Moore, Truro, N. S., for the best selected and best arranged group exhibit of white oats was won by Jas. E. Murphy, Augustine Cove, P. E. I.

The Attendance and Opening.

The attendance was not large. There were no side-shows or other attractions. It was quite evident, however, that all who attended wished to gain information and improve their knowledge regarding good seed. They were there for a common purpose and they exchanged ideas freely.

The fair was formally opened by the Hon. Murdock Mackinnon, Commissioner of Agriculture for Prince Edward Island, at noon on Wednesday. He made special reference to the unavoidable absence of the President Rev. Father Gauthier, who has always taken a very active part in the management of the seed fairs. The Commissioner was followed by Capt. Jos. Read, M. P., who called Prince Edward Island the seed granary of North America. He said that seed grain produced on Prince Edward Island gives better results than that produced in any other part of Canada, and he pointed out the importance of properly grading grain for seed.

New Spray Mixtures.

On Wednesday a very interesting address was given by C. E. Sanders, Field Office in charge of the Dominion Entomological Laboratory at Annapolis Royal, N. S., on "Sprays and Spraying". He claimed that arsenate of lime is the cheapest effective poison for the control of the potato beetle and other insects at the present time, and that a large sum of money had been saved by the farmers of the Annapolis Valley last season from the use of it in place of either Paris green or arsenate of lead. The unit of poison costs much less in the first than in the last two. Mr. Sanders has carried on some experiments in the control of the potato beetle with white arsenic. He has obtained some results in which this poison has had no injurious effects on the potato plant, and he expects to be able to recommend the use of it before long. At present prices twelve cents' worth of white arsenic is as effective as about one dollar and fifty cents' worth of Paris green.

He expects to be able to recommend, too, before long a dry Bordeaux mixture to be applied as a dust for the control of potato blight. The cost of it is no greater than that of the present Bordeaux mixture, and it is much easier to apply.

Demand for Registered Grain.

At a meeting of the members of the Canadian Seed Growers' Association, L. H. Newman, Ottawa, outlined the changes which had been made recently in the by-laws of the organization, and the benefits to be derived

therefrom. He said that the demand for registered seed was growing faster than the supply, and that the recent changes in the bylaws make it easier for one to become an operating member. Before leaving Ottawa, Mr. Newman had had an enquiry for twenty-five carloads of registered grain.

J. D. Thompson, Ottawa; S. J. Moore, Seed Inspector, Truro; F. L. Fuller, Truro; Stanley Logan, Amherst N. S.; W. H. McGregor, P. E. I.; J. L. Tennant and W. J. Reid, Department of Agriculture, P. E. I.; H. S. Cunningham, Department of Agriculture, N. S.; E. M. Taylor, Department of Agriculture, N. B., and others took part in the various discussions.

Prince Edward Island

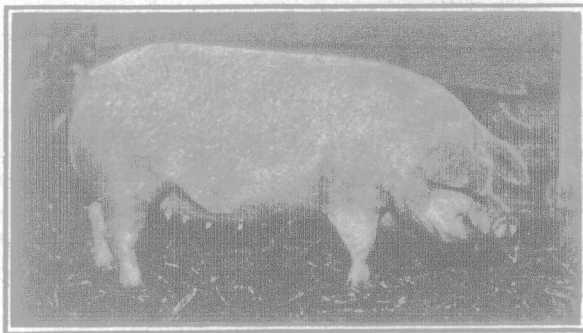
A. A. SCALES.

"Highways of Progress."

EDITOR "THE FARMER'S ADVOCATE":

No man in ancient or modern times has shown anything like the same keen insight into national weaknesses, but more particularly the relation of agriculture to national progress, than has the late Jas. Hill. We are inclined to reverse Shakespeare's dictum and say, that the good which men do, lives after them, the evil is oft interred with their bones.

Although published some time ago, I had not read Mr. Hill's book on "Highways of Progress" until recently. It is filled with aphorisms or wise modern sayings having an agricultural flavor for which Mr. Hill was noted. The following are a few of these: "The farms stretch out their hands in vain." "The country needs more workers on the soil." "The soil is the sole asset that does not perish, because it contains within itself, if not abused, the possibility of infinite renewal." "Genius has shunned the farm and expended itself upon mechanical appliances and commerce, and the manifold activities whose favorable reactions filter back but slowly to the plot of ground on which stands solidly the real master of himself and of his destiny." "No nation that does not throw its intensest interest and expend the bulk of its force upon the cultivation of the soil can become or remain permanently great." "We are robbing the soil, in an effort to get the largest cash returns from each acre of ground in the shortest possible time and with the least amount of labor." "Land is a first and indispensable human requirement. It is the main support and resource of man."



Champion Chester White Sow at Guelph.

Exhibited by W. E. Wright & Son, Glanworth, Ont.

Everyone of the foregoing is a text upon which a good farm sermon could be preached. We need more farm preachers with the vision of Mr. Hill. Why is it that so few of our commercial leaders have the spirit of the soil? Even among our leaders in agriculture it is the spirit that kills. Men who are in agricultural positions of responsibility chiefly because it is a "soft job" with "good pay," and requires but a slow "Government Gait," are a menace to the whole fabric of agriculture. What is needed in this reconstruction period in Canada are men who love the farm and who are prepared to make sacrifices to promote farming and the interests of farmers. Our national aspirations need a new leading along the line as suggested by Mr. Hill. Hear him! "There must be a national revolt against the worship of manufacture and trade as the only forms of progressive activity, and the false notion that wealth built upon these, at the sacrifice of the fundamental form of wealth production, can endure. A clear recognition on the part of the whole people, from the highest down to the lowest, that the tillage of soil is the natural and most desirable occupation for man, to which every other is subsidiary, to which all else must in the end yield, is the first requisite." This is good reasoning and sound sense. Our modern economists, financiers, and sociologist should study the works of this Railway-Farmer more, and less those of the Greenhouse-culture type, found in modern works on political economy, finance and sociology.

Note further—"A profitable husbandry is the very foundation from which all other occupations flow and by which they are nourished in strength." Yet what do we find even in the Province of Ontario where is to be found the finest stretches of good land upon which the sun shines?—urban population increasing at an alarming rate and people living in cities like rats, while the rural population is steadily declining. As Mr. Hill says, "The farms stretch out their hands in vain."

He goes on to say—"Land without population is a wilderness and population without land is a mob.—The first act in the progress of any civilization is to provide homes for those who desire to sit under their own vine and fig-tree.—A prosperous agricultural interest is to a nation what good digestion is to a man. The farm is the basis of all industry.

Our author realizes that there is and must be a

close relation between business interests apart from farming, and agricultural interests. He says—"The greater the number of prosperous farmers, the greater will be the prosperity of every business man." In order to obtain this, "The man must be encouraged to go to the farm. The man on the farm must be considered first in all our policies, because he is the keystone of the national arch. When he has produced the share of natural wealth that corresponds to his best effort, he must be able to find a purchaser at prices that will enable him to live in comfort and enjoy at least a moderate degree of prosperity." Right here, Mr. Hill has touched on the most important question in the realm of agriculture. Our farmers in Canada are not asking to be made millionaires. There is no class so easily satisfied on the score of wealth, as are farmers. In fact, if we might be allowed to say so, they are too easily satisfied. Too many are inclined to agree with that damnable economic doctrine expressed in a rhyme contained in a schoolbook of earlier days:

"Honest John Tompkins the hedger and ditcher,
Although he was poor, did not want to be richer."

Away with such false philosophy!

He realizes also that there is a close connection between prosperous farmers and live-stock. No doubt he had in mind the great wheat-growing section of Western United States and Canada. "The farmer and his land cannot prosper until stock-raising becomes an inseparable part of agriculture." Those farmers who are dazzled by the present high prices of grain and are inclined to sell their live-stock, should take note of what this far-visions farmer-economist says on this point.

Taking a wider sweep of the whole problem, he of Canadian birth, but who went to the United States for an opportunity to expand his genius, says: "There is not one sound objection, on the side of either Canada or the United States, to unrestricted intercourse. Whatever men may think of the policy of protection as a general principle, it has no meaning and no excuse for being, as applied by either of these countries against the other."—"Both countries should put away selfish greed and selfish fear, and join in the creation of a great zone wherein trade as well as men may be free."—"That commerce must eventually move unrestrained between these two peoples is self-evident. Trade will go her own way even though she must walk in legions." Is this prophetic? We think it is. If no other good results from the great war just closed, than the bringing together of the peoples of Great Britain, the United States and Canada, it will have been worth the money sacrificed. There is a wonderful improvement in the feeling among the peoples of these three countries in the last two years. Where before was jealousy, enmity and strife, now the "dove of peace" rests. Is it too much to expect that closer trade relations will follow? We think not.

As a means to accomplish this desired and desirable result he says: "The beginning of all reform or progress in public policies under a republic is the creation of an intelligent public opinion." However, he warns us by saying—"Almost every improvement that helps the many brings injury to individuals here and there."

As railways are much in the public mind at present, it is worth while to hear what Mr. Hill has to say about a subject on which he is an undoubted authority. "If there are two lines (of railway) where one would suffice the added burden falls on the public. A railroad must either earn money to operate it, or borrow. In either case the people foot the bills." Here we have the whole financial problem of railways stated in a few words. He comments further—"Good service can be given only by a road that is making money." In order to enable the railways to make money, the following principle is stated—"The principle of consolidation in business within proper limitations and safeguards is a permanent addition to the forward-moving forces of the world." Canada, we are glad to say, is moving along these lines at present.

On practical railway problems he lays down a few rules—"Low rates can be made only if cars moving in each direction are loaded."—"In the long run transportation adopts the line of least resistance. The rivers mark the direction." "The average run of all freight cars, the country over, is less than twenty-five miles a day." Rate wars or rates below the reasonable level, simply run up bills for the people to pay. For all charges of every sort, are, in the end, paid by the people." These points are worth careful consideration by railway managers, but more particularly by the people, who, as Mr. Hill says, have to "foot the bills."

Regarding high prices—"Waste, idleness, and rising wages are the three most powerful forces in the world to raise prices.—High wages and high prices work in a circle. Every rise of one is reflected in the rise of the other."

He lays down finally a broad, general principle to guide along the "Highways of Progress": No State need ever borrow again if it is wisely and honestly governed." He would seem to be opposed to the principle of borrowing by the state. It may be presumed that he refers to peace conditions and would probably change his dictum under present circumstances, and during the past four years. But his policy, in ordinary times, is a sound one. Large sums of money at the command of the masters of finance, tend to breed financial carelessness and extravagance. The huge sums which have recently been borrowed in both Canada and the United States may become a source of financial danger, rather than an aid to development, unless the people of both countries maintain close watch on the spending of their savings.

H. H. DEAN.

Automobiles, Farm Machinery and Farm Motors

Experiences With a Tractor.

EDITOR "THE FARMER'S ADVOCATE":

In the spring of 1917 there was purchased for our farm a 9-18 tractor with a set of plows and tandem discs. There was a demonstration held at the farm of plowing and discing and the impression on the farmers was generally favorable. The machine works well and in two seasons of use the only repairs put in were new brake linings and new spark plugs and the engine thoroughly cleaned. We can plow seven acres of land and disc eighteen per day. The fuel required for one day is eight gallons of coal oil and half a gallon of gasoline and one gallon of cylinder oil. In the past season we only used five gallons of transmission oil. Of course you have to take into consideration the land you are working but on the average the above mentioned amount of fuel and oil is sufficient for a day's work.

There are lugs to put on the driving wheels and as the machine weighs little more than a good team we have no trouble with packing or miring. If in case of miring badly on a soft or wet piece of ground we put a post under the driving wheels and start the engine slowly until the wheels catch and as this gives them a footing it will bring the machine out.

Turning gets to be easy with practise and the small strip of land left at each end is not hard to bring in after the field is finished. In a field that has very good drainage we plow all around working toward the centre and this does away with turning and one is plowing all the time. We plow three furrows at once and can plow deep enough for ordinary work but if very deep plowing is required we lift one plow and set the other two to the depth required. In regard stones the plows are hitched to the tractor with a drawbar which is held with wooden plug and on striking anything the plug breaks and leaves the plows behind undamaged. When discing we use a tandem disc. Plain cutters in front eight knives on each side of the pole and cutaways behind followed by a smoothing harrow. With this arrangement we can disc nine feet at once and all the soil is well pulverized, and makes a fine seed bed.

The machine is fitted with a pulley which will do all belt work and in late fall and winter when not in use for cultivating it can be used for threshing and sawing wood.

On this farm the machine is a necessity and is one of our most important factors in labor saving and in getting the land prepared to insure getting all seeding done in good season. Of course in the case of a farmer who can do all his work with a couple or perhaps one team this would be a very poor investment indeed and he would be sure to lose money.

In a case like that wouldn't it be better if five or six neighbors bought one jointly and by doing away with one team on each place could, with very little added to the amount so derived, make the purchase and have the benefits of a tractor. I don't see how an arrangement like that would interfere with getting a larger crop in each season and getting it harvested too, as pointed out by one of your readers some time ago. That was a rather poor argument to use against the tractor. These are just a few words about our experiences. We are not trying to influence anyone about this means of cultivating as every farmer knows his own requirements best and what would save money for one might be a losing position for another, but we certainly hope to continue doing as much of our cultivating as possible with a tractor.

Quebec.

J. C. REID.

Cost of Electric Power on the Farm.

EDITOR "THE FARMER'S ADVOCATE":

I will give you a brief outline of what hydro power has cost on the 130-acre farm of T. S. Shantz. We have kept close account of the cost of everything for one year.

Light for house and barn and one-horse motor for pumping water for stock, threshing and chopping, everything included.....	\$40.50
Service charges.....	30.00
Total.....	\$70.50

The installing part is one of the biggest items, but after that it is a cheap and reliable power. We are close to the power line, which is a branch line from Waterloo to Elmira, and when the additional power plant is completed with 30,000 horse-power it will certainly be an opportune time for the farmers to get it, and as the war is over the chances are that material will take a drop in price.

Will also give all readers a sketch of what the installing part cost us:

Wiring house.....	\$120
Wiring barn.....	107
Fixtures for house.....	30
One horse-power motor for pumping water.....	114
Twenty horse-power motor for threshing and chopping, 6 farmers in syndicate.....	235
Total.....	\$606

There are twelve farmers on this line, within three miles from town. It is divided into two sections, each

section having a twenty-horse motor, which is mounted on a truck. Any farmer interested in hydro power is welcome to see it work at any time.
Waterloo Co., Ontario.

E. E. S.

Battery Care.

Cars are being run during the winter months by a greater percentage of people than ever before. Last winter the thermometer kept jumping below zero all over Eastern Canada, but nevertheless it is safe to say a larger percentage of machines were in operation than

to store it away, keep adding water to the cells of the battery so that it will always be thoroughly mixed with the electrolyte. This filling water must either be distilled, or a melted artificial ice, or fresh rain water. Never keep the water in any kind of a vessel that has metal parts, a can, bucket or a pail. The water must be held in a bottle. The purpose of all this is to keep metal particles out of the batteries. If you should use spring water there is always a chance that it may contain mineral materials that will sooner or later cause trouble. It would be a good idea for you to purchase the necessary water from a garage, a druggist or an ice plant. You should make it a point to continually

assure yourself that there is enough water in the battery and then also make it an essential that the specific gravity of the electrolyte shall run from 1275 to 1300. If care is given to these two details your battery should not be in danger of freezing. We may say for your information that the specific gravity of water is 1000, and that it freezes at 32 degrees Fahrenheit above zero.

There are a number of other cautions that we must bring to your attention in so far as your battery is concerned. It would be well to run the engine of the car every two months in order that the battery may be charged. Should this be found impossible it is an easy matter to have a charge run through the battery at some electrical plant attached to an industrial enterprise or a garage. In the event of these arrangements being impossible do not fail to keep the specific gravity of the electrolyte between 1275 to 1300. Even at the expense of some in-

convenience and a little money we recommend that the battery be charged periodically through the medium of the engine or some outside source.

If you should spill some of the electrolyte from a cell in the battery see that new electrolyte is installed, then run the motor, or charge the battery in some other way. Remember that the electrolyte which you add to the battery should be of the same specific gravity as that which it already contains. You can easily decide this by using a hydrometer syringe. Let us warn you never to add acid or electrolyte to the cells of the battery except to replace loss. Remember also that acid must always be poured slowly into the water and not the water into the acid. Manufacturers are so insistent upon this point that they enlarge upon it in their instruction books, and so you cannot well afford to disregard its importance. Sometimes a sediment gathers in the bottom of the battery jars. This should be taken away before it reaches the bottom of the plates as it is extremely injurious. You can generally tell that the sediment is forming, because the battery will show a failing in energy, or excessive evaporation of the electrolyte, or perhaps it may heat too rapidly when charging.

If your battery has been laid away for some time and you intend to again put it into service give it a very close inspection and add what distilled water seems necessary. In the event that periodical charges have not taken place it might be well to give it a long, steady charge before putting it into use again. You should also be very careful that the terminals are not corroded and that the wires carry good connections.

A great deal of carelessness is frequently shown by motorists when they are putting water into a battery. Under ordinary circumstances it is not necessary to add a great deal of liquid. On many occasions only a few tablespoonfuls are necessary. Of course, when the weather is extremely hot the evaporation is excessive, but in the moderate temperatures there is not a great deal of water. What should always be borne in mind is the fact that the plugs, if not tightly replaced, may allow the electrolyte to get out of the cells when the battery is being charged. Never keep a broken plug in use and do not attempt to provide a substitute or you may invite trouble that will cause a considerable expenditure of time and money.

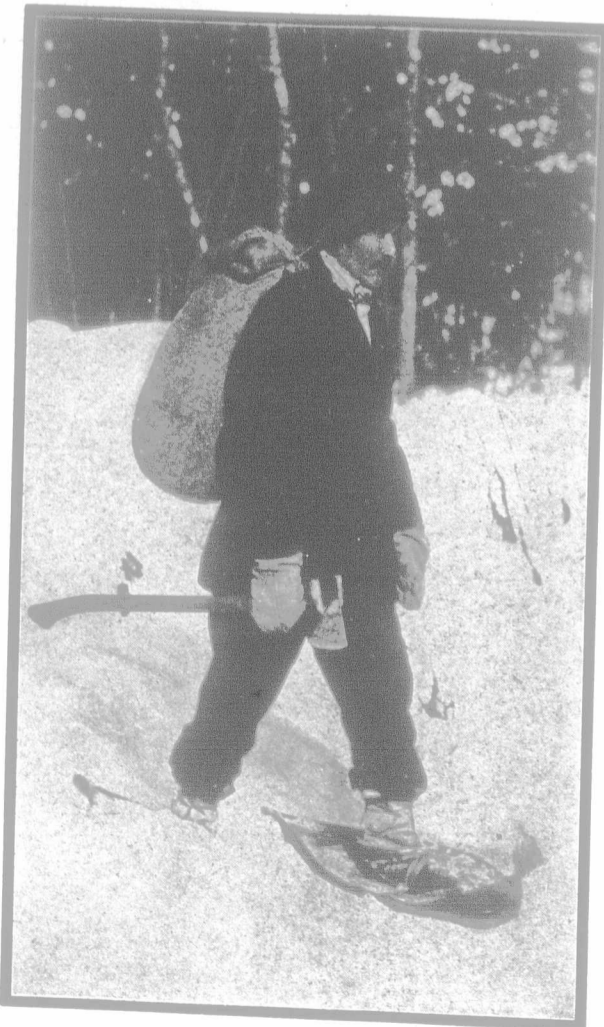
AUTO.

Some very high prices have lately been paid for apples, probably as a result of the keen demand in England for what surplus could be shipped across the ocean. When \$3.50 per barrel, orchard run, is paid by dealers for such varieties as Ben Davis, apples are in some demand. There is a strong tendency in situations like the present to allow too little for quality, and varieties of exceptional flavor rarely command a correspondingly high price.



In the Scottish Hills.

during the previous season. It now seems that we are to have a mild winter. At any rate we have experienced so far higher temperatures than the average at this time in 1917. A very small percentage of cars have already been laid away, but it is true that there are some that are only being used occasionally. To the owners of these cars we would most emphatically urge that the batteries be looked over with meticulous care. If you intend only to use your car occasionally during the next four or five months, or if you have determined



Hitting the Trail.

THE DAIRY.

Niagara Peninsula Holstein Sale.

At the second annual sale, held by the Niagara Peninsula Holstein-Friesian Association at Dunnville, on Wednesday, December 11, a general average of \$172.70 was secured for 37 head. Thirty-one females averaged \$184.83, a very fair average for a consignment sale. 4 males averaged \$133.75, one of them, Llenroc Pontiac Champion, a March calf, selling for \$310. He was consigned by W. C. Houck, Black Creek, and sold to W. S. H. McDonagh, Welland. The high price of the sale was \$410, paid by Jno. Warner, Cayuga, for Bessie Posch Sylvia, an 8-year-old cow, consigned by J. N. Moote, Canboro. The total sales were \$6,390, and the list of individual sales for \$100 or over is as follows:

Females.	
Willowbanks Canary Korndyke, P. S. Moote, Dunnville.....	\$285
Llenroc Pontiac Korndyke, S. A. Best, Cayuga.....	350
Perfection Pontiac, E. Hanna, Dunnville.....	200
Willowbanks Bewunde Korndyke, E. Durham, Smithville.....	280
Hengerveld Inka De Kol, G. Lawrence, Dunnville.....	130
Inka Hengerveld of Woodslee, J. Miller, Stevensville.....	165
Woodslee De Kol Ormsby, C. Lymburner, Dunnville.....	135
Woodslee Hengerveld Burke, W. C. Houck, Black Creek.....	170
Woodslee Inka Burke, H. Richardson, Humberstone.....	165
Woodslee Nig Burke, S. Root, Burnaby.....	100
Woodslee Ormsby De Kol, A. McKay, Low Banks.....	160
Inka Artis Burke 3rd, Wm. S. H. McDonagh, Welland.....	225
Inka Louise Korndyke, W. Henderson, Niagara Falls.....	180
Bessie Posch Sylvia, John Warner, Cayuga.....	410
Butter Queen May, T. Wilcox, Smithville.....	305
Hulda De Kol of Canboro, Mrs. Kelly, Dunnville.....	250
Countess Helbun De Kol, S. Root, Burnaby.....	140
Inka De Kol Queen, C. Dolan, Dunnville.....	140
Lady May Seneca, J. Hunsberger, Dunnville.....	190
Ransay Duchess, E. Seit, Humberstone.....	200
Evergreen's Rex, H. Stoner, S. Cayuga.....	175
Lizzie Pietertje De Kol, C. Weaver, Dunnville.....	190
Snow Ball Segis Beets, W. C. Houck.....	105
Canboro Erie Queen, C. Coleman, St. Catharines.....	145
Substitute for lot 38, Wm. Dichart, Dunnville.....	145
Substitute for lot 39, C. Coleman.....	185
Winnie Win's Gem 3rd, J. Karner, Fonthill.....	150
Lady Calamity Pauline 4th, H. MacLeod, Niagara Falls.....	210

Males.	
Llenroc Pontiac Champion, Wm. S. H. McDonagh.....	310

Southern Counties' Ayrshire Sale.

A high price of \$375 was reached at the recent sale of Ayrshires, held by the Southern Counties Ayrshire Club at Woodstock, on Thursday, December 19. Scotch Lassie, 5th, a five-year-old consigned by Jno. A. Morrison, sold for this figure to E. V. Smith, St. Thomas. Her sister topped the sale in 1917. There was a fair crowd of about 200, and bidding was good on the quality stuff. There was no demand for bulls, and it was quite apparent that inferior or unfitted animals have no place in a sale-ring. The following is a list of sales for \$100 and over:

Females.	
White Rose 4th, W. J. Connoley, Strathroy.....	\$180.00
Flora 2nd, B. Thurston, Strathroy.....	105.00
Trout Run Lady Aggie, C. M. Ross, Nanticoke.....	155.00
Lady Kerr, Geo. Whaley, Ostrander.....	105.00
Selwood Flower Girl, P. Cairns, Brantford.....	150.00
Mabelle, J. Caruthers, Tilsonburg.....	165.00
Garlaugh Annie, W. F. Burnes, Beachville.....	250.00
Frosty of Houghton, J. H. Forden, Beachville.....	130.00
Butter Alice, D. Ashworth, Denfield.....	255.00
Floss of Level Lea, J. W. Millington, Beachville.....	105.00
Frosty of Montrose, P. Cairns.....	125.00
Amelia 6th, A. Armour, Dorchester.....	230.00
Beauty 2nd, A. Saddler, Mossley.....	165.00
Trout Run Grace Darling, D. A. Ashworth.....	135.00
White Rose, J. G. German, Embro.....	150.00
Princess Rose, A. E. Chowen, Thamesford.....	100.00
Garlaugh Star 2nd, J. W. Millington.....	220.00
Selwood Snowdrop, F. Hallock, Woodstock.....	120.00
Madame Patti of Sunny Acres, G. Whaley.....	125.00
Madame Patti 3rd of Sunny Acres, A. Saddler.....	100.00
Trout Run Queen Mary, R. J. A. Smith, Hatchley Station.....	200.00
Scotch Lassie 5th, C. V. Smith, St. Thomas.....	375.00
Trout Run Queen Flirt, T. Beaudoir, Broughton Stn., Que.....	230.00
Sunnybrook Miss Dentz, J. Ferguson, Camlachie.....	125.00
Selwood Blossom 3rd, S. A. Saunders.....	100.00
Brighton Brae Lady Drummond 2nd, B. G. Palmer, Norwich.....	275.00
May, A. E. Saddler.....	117.50
Sarah of Trout Run, McVicker Bros., Belmont.....	127.50
Beauty of Beachville 2nd, W. Ward, Woodstock.....	150.00

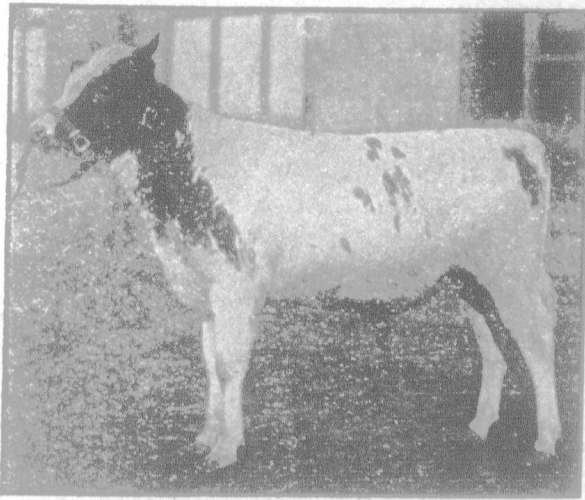
Males.	
Caulbrook Prince, R. T. Redman, Innerkip.....	165.00
Selwood Champion, J. Ferguson.....	125.00

Standards of Grade and Quality for Dairy Products.

In response to a request from the Dominion Analyst, the recent Dominion Dairy Conference held at Ottawa, Nov. 25 to 28, took up the question of legal standards, with the result that the following recommended standards constitute the work of a special committee whose work was ratified by all the delegates assembled:

Standards of Quality.

1. MILK, unless otherwise specified, is the fresh, natural, clean product, obtained by the complete, uninterrupted milking, under proper sanitary conditions, of one or more healthy cows, properly fed and kept, excluding that obtained within two weeks before and one week after calving, and contains not less than



Robinhood of Springbank.

First prize junior Ayrshire bull calf at the Ontario Provincial Winter Fair, Guelph. Owned by A. S. Turner & Sons, Ryckman's Corners.

three and one-quarter (3.25) per cent. of milk fat, and not less than eleven and three-quarters (11.75) per cent. of total milk solids.

2. SKIM-MILK, is milk from which a part or all of the cream has been removed, and contains not less than eight and one-half (8.50) per cent. of non-fat milk solids.

3. PASTEURIZED MILK is milk that has been heated to a temperature of one hundred and forty (140) degrees Fahrenheit to one hundred and forty-five (145) degrees Fahrenheit and held at this temperature under agitation for a period of twenty (20) to thirty (30) minutes, and immediately cooled to forty-five (45) degrees Fahrenheit or lower, and shall be at a temperature not above fifty-five (55) degrees Fahrenheit when delivered to the consumer, at which time it shall not contain more than one hundred thousand (100,000) bacteria per cubic centimetre.

4. STERILIZED MILK is non-concentrated milk that has been heated to the temperature of boiling water or higher for a length of time sufficient to kill all organisms

to May, inclusive. (c) It shall be free from blood, pus, or disease-producing organisms. (d) It shall be free from disagreeable odor or taste. (e) It shall have undergone no pasteurization, and be free from chemical preservatives. (f) It shall have been cooled to 45 degrees F., within half an hour after milking, and kept at that temperature until delivered to the consumer. (g) It shall contain 12 to 13 per cent. of milk solids, of which at least 3.5 per cent. is fat. (h) It shall be from a farm whose herd is inspected monthly by the veterinarian, and whose employees are examined monthly by a physician.

6. EVAPORATED MILK is milk from which a portion of the water has been evaporated and contains not less than twenty-five and one-half (25.5) per cent. of milk solids, and not less than seven and eight-tenths (7.8) per cent. of milk fat.

7. SWEETENED CONDENSED MILK is milk from which a portion of the water has been evaporated, and to which sugar has been added. It contains not less than twenty-eight (28) per cent. of milk solids and not less than eight (8) per cent. of milk fat.

8. EVAPORATED SKIM-MILK, CONCENTRATED SKIM-MILK, CONDENSED SKIM-MILK, is skim-milk from which a considerable portion of water has been evaporated, and contains not less than twenty (20) per cent. of milk solids.

8a. SWEETENED CONDENSED SKIM-MILK, SWEETENED CONCENTRATED SKIM-MILK, SWEETENED EVAPORATED SKIM-MILK, is skim-milk from which a considerable portion of water has been evaporated, and to which sugar has been added and contains not less than twenty-five (25) per cent. of milk solids.

9. BUTTER MILK is the product that remains when butter is separated from ripened or unripened cream, by the usual churning processes; or a similar product, made by the appropriate treatment of skimmed milk.

10. GOAT'S MILK, EWE'S MILK, ETC., are the fresh, clean, lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conform in name to the species of animals from which they are obtained.

Cream.

1. CREAM is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force, is fresh and clean, and contains (unless otherwise specified) not less than eighteen (18) per cent. of milk fat.

2. WHEN GUARANTEED TO CONTAIN another percentage of milk fat than eighteen (18) per cent., it must conform to such guarantee.

3. CREAM must be entirely free from gelatine, sucrate of lime, gums or other substances added with a view to give density, consistency or apparent thickness to the article.

4. CREAM must contain no preservatives of any kind, nor any coloring matter, other than is natural to milk.

5. EVAPORATED CREAM, CLOTTED CREAM, CONDENSED CREAM or any other preparation purporting to be a special cream, except ice-cream, must conform to the definition of cream, and must contain at least twenty-five (25) per cent. of milk fat.

Milk Fat or Butter-fat.

1. MILK FAT, BUTTER-FAT, is the fat of milk and has a Reichert - Meissl number not less than twenty-four (24) and a specific gravity not less than 0.905 (40°C)

Butter.

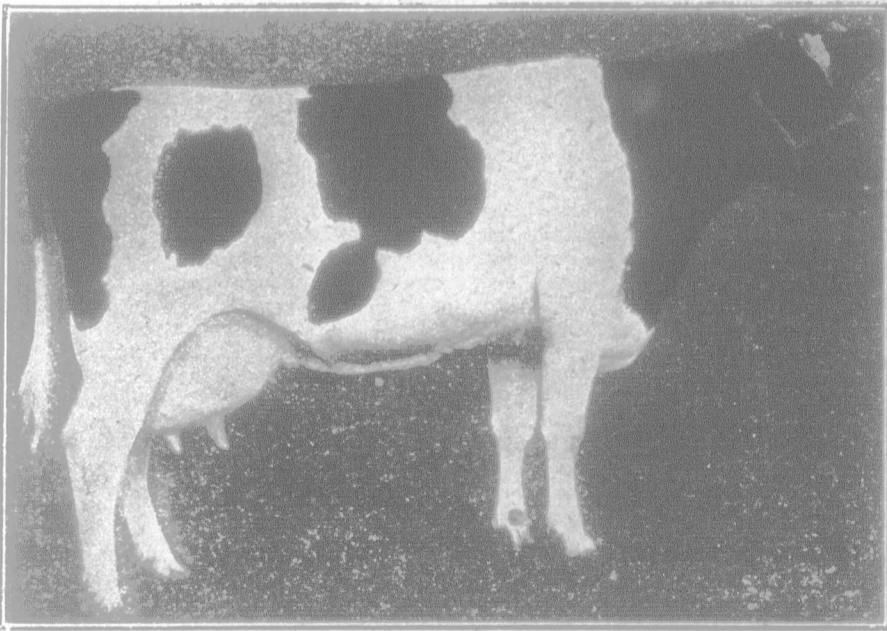
1. BUTTER is the clean, non-rancid product made by gathering in any manner the fat of fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt, and contains not less than eighty (80) per cent. milk fat, and not more than sixteen (16) per cent. of water. Butter may also contain added coloring matter of harmless character.

Cheese.

1. CHEESE is the sound, solid, and ripened product made from milk or cream by coagulating the casein thereof with rennet or pepsin, with or without the addition of ripening ferments and seasoning, and contains, in the water-free substance, not less than forty-five per cent. of milk fat. Cheese may also contain added coloring matter of harmless character.

2. SKIM-MILK CHEESE is the sound, solid and ripened product made from or by the use of milk commonly known as skim-milk, or milk from which any cream has been removed, or milk to which skim-milk has been added; or cheese containing in the water-free substance less than 45 per cent. of milk fat.

3. GOAT'S MILK CHEESE, EWE'S MILK CHEESE, ETC., are the sound, ripened products made from the milks of the animals specified, by coagulating the casein



Hedge Fronkje II.

This Holstein cow sold recently in England for £3,000.

present, and must be delivered to the consumer in a sterile condition and shall contain not less than three and one-quarter (3.25) per cent. of milk fat and eleven and three-quarters (11.75) per cent. of total milk solids. Sterilized milk shall not be sold or offered for sale except in hermetically closed containers bearing the words, "This milk should be used within twelve (12) hours after opening the containers."

5. CERTIFIED MILK. Milk sold as certified milk shall comply with the following requirements: (a) It shall be taken from cows semi-annually subjected to the tuberculin test, and found without reaction. (b) It shall contain not more than 10,000 bacteria per cubic centimetre from June to September; and not more than 5,000 bacteria per cubic centimetre from October

thereof with rennet or lactic acid with or without the addition of ripening ferments and seasoning.

Ice-cream.

1. ICE-CREAM is a frozen, sweetened dairy product with or without harmless flavoring and coloring matter, with or without gelatine gum tragacanth, or other harmless stiffening materials, in amount less than two (2) per cent.; and contains not less than seven (7) per cent. of milk fat.

Miscellaneous Milk Products.

1. WHEY is the product remaining after the removal of fat and casein from milk in the process of cheese-making.
2. KUMISS is the product made by the alcoholic fermentation of mare's milk or cow's milk.
3. MILK POWDER is the soluble powder product made from milk and contains, unless otherwise specified, not less than ninety-five (95) per cent. of milk solids, and not less than twenty-six (26) per cent. of milk fat.
4. SKIM-MILK POWDER is the soluble powder product made from skim-milk, and contains not less than ninety-five (95) per cent. of milk solids.

Riders.

1. Your Committee recommends that the Dairy Branch of the Dominion Department of Agriculture obtain analytical data of dairy products manufactured and sold throughout Canada with a view to its use in future revision of dairy standards.
2. Your Committee recommends that the Federal standards for dairy products be recognized and adopted by all Canadian municipalities which are engaged in the work of food inspection.

Grade Standards.

Universal score-cards for all Canada were also advocated by some of the delegates, and the following resolution was passed relative to score-cards for cheese and butter as well as grade standards for butter, cheese and cream and grade certificates:

WHEREAS there is a lack of uniformity in the scoring of butter and cheese throughout Canada,

AND WHEREAS the adoption of uniform score-cards and certificates would benefit the Dairy Industry,

BE IT THEREFORE RESOLVED that the following Canadian Score-cards and Grade Standards be adopted for general use throughout the Dominion, and that all score-cards of this form bear the heading, Canadian Score-card for Butter or Cheese, respectively.

Scale of Points for Scoring Cheese.

FLAVOR—(45)	TEXTURE—(25)	CLOSENESS—(15)
Acid	Stiff	Loose
Fruity	Corky	Ragged Holes
Rancid	Mealy	Gas or Pin Holes
Tainted	Coarse	Swiss Holes
Cow	Weak	
Weedy	Lumpy	
Bitter	Pasty	
Grassy		
Heated		
COLOR—(10)	FINISH—(5)	
Streaky	Rough Edges	
Wavy	Crooked Ends	
Mottled	Soft Rinds	
Acid Cut	Mouldy	
High	Dirty	
Light	Box	Total, 100 points

Grades for Cheese.

SPECIAL GRADE.—Score 94 to 100 points. Minimum for flavor 41 points. First Grade: Score 92 and under 94 points. Minimum for flavor, 39 points. Second Grade: Score 87 and under 92 points. Minimum for flavor, 37 points. Off Grades: Score under 87 points and under 37 points for flavor.

Cheese Standards.

SPECIAL GRADE.—Flavor: Clean, sound and pure. Texture: Close, firm and silky. Color: Good and uniform. Finish: Even in size, smoothly finished, sound and clean surfaces, straight and square. Boxes: Strong, clean, well made, close fitting; if made of wood, ends to be of seasoned timber. Weights stencilled or marked with rubber stamp.

FIRST GRADE.—Flavor: Not quite clean. Texture: Slightly weak or open. Color: Uniform. Finish: Fairly even in size, well finished, sound surfaces. Boxes: Strong, clean, well made, close fitting; if made of wood, ends to be of seasoned timber. Weights stencilled or marked with rubber stamp.

SECOND GRADE.—Flavor: "Fruity," not clean, "turnipy," or other objectionable flavor. Texture: Weak, open, loose, "acid," too soft, too dry. Color: Uneven, mottled, or objectionable shade. Finish: Very uneven in size, showing rough corners, black mould, dirty or cracked surfaces, soft rinds. Boxes: Too large in diameter; top edge of box more than 1/2 an inch below the top of the cheese. Made of light material. Ends made of improperly seasoned material.

OFF GRADE.—Flavor: Rancid, badly "off," anything inferior to second grade. Texture: Very weak, very open, showing pin holes, or porous, very "acid," very soft or very dry. Color: Badly mottled, or very objectionable shade. Finish: Anything worse than second grade. Boxes: No question of boxes sufficient to make third grade if other qualities are good.

Scale of Points for Scoring Butter.

FLAVOR—(45)	TEXTURE—(15)	INCORPORATION OF MOISTURE—(10)
Flat	Weak	Leaky
Heated	Salvy	Free Moisture
Weedy	Greasy	Milky Brine
Sour	Brittle	
Stale	Overworked	
Metallic		
COLOR—(10)	SALTING—(10)	PACKING—(10)
Too Light	Too Light	Poorly Packed
Too High	Too Heavy	Poorly Printed
Uneven	Undissolved	Poorly Wrapped
		Poorly Nailed
		Poorly Finished
		Dirty

Grades for Butter.

SPECIAL GRADE: Score 94 to 100 points; minimum for flavor, 41 points. FIRST GRADE: Score 92 and under 94 points; minimum for flavor, 39 points. SECOND GRADE: Score 87 and under 92 points; minimum for flavor, 37 points. OFF GRADE: Score under 87 points and under 37 points for flavor.

The Committee recommends that Official Grade Certificates shall be issued only on butter made from effectively pasteurized cream.

Standards for Grading Butter.

In order that creamery butter may qualify for "Special" grade certificates, it must have been made from pasteurized cream and otherwise closely conform to the following description, which represents in a general way the requirements of the export or best Canadian markets. Flavor: Fine, sweet, mild and clean. Texture: Firm and fine. Incorporation of Moisture: clear, but not excessive free moisture. Color: uniform and of a pale straw shade. Salting: Not more than 3 per cent., and thoroughly incorporated.

Grade Standards and Grade Descriptions of Cream.

TABLE CREAM.—This grade shall include any lot of sweet, clean-flavored cream bought for re-sale for household use. The acidity of this cream shall not be more than .18 per cent. at the time of grading. The term "Table Cream" may be supplemented by the terms "Inspected" or "Extra Special," as the initial purchaser may in each case uniformly adopt.

SPECIAL GRADE.—This grade shall include any lot of cream which is fresh and clean in flavor, of a uniform consistency and fit for making into Special Grade butter. The acidity of cream in this grade shall be not more than .3 per cent. (three-tenths of one per cent.) at the time of being graded at the creamery where it is to be manufactured into butter.

FIRST GRADE.—This grade shall include any lot of cream which is reasonably fresh and clean in flavor, of a uniform consistency and fit for making into butter of this grade without the addition of acid neutralizing agents. Its acidity shall not be more than .5 per cent. (five-tenths of one per cent.) at the time of grading at the creamery where it is to be manufactured into butter.

SECOND GRADE.—This grade shall include any lot of cream that does not meet the requirements specified for the next higher grade, which is bitter, stale, musty, metallic or otherwise unclean in flavor.

The Brant County Sale.

On Wednesday, December 18, in the City of Brantford, the Brant County District Breeders held their sixth annual sale of pure-bred Holsteins. In all 45 females and 5 young bulls passed through the sale-ring, and realized the sum of \$7,925, an average of \$158.50. This average, it will be noticed, is considerably below the splendid averages made by this Club in former years, but there were in this year's offering far too many animals that were brought forward in thin condition, the majority of which should never have seen a public sale-ring. There were also, however, a goodly number of desirable animals listed and without exception these went off at fast bidding for sound prices. A seven-months son of Laura Bell Posch, a 106-lb.-per-day cow, consigned by E. C. Chambers, reached the top price for the day, going to W. J. McCormack, of Hatchley, at \$335, a figure which was well below his value. Houwtje Johanna Pet, at \$330, was the highest priced female and also looked exceptionally reasonable at the figure. She went to W. C. Houck, of Chippawa. The 30 cows, three years old and upwards, made an average of \$185.30. The sales for \$100 or over are as follows:

Females.

Black Lass, Wm. Forbes, St. George	\$130
Allgood Mabel De Kol, J. W. Drake, Cainsville	110
Elcho Mercedes De Kol, J. W. Drake	100
Katie Veeman Ormsby, Wm. Jones, Mt. Elgin	195
Countess Korndyke Segis, J. Bryden, Galt	135
Grace De Kol Fayne, D. J. Orr, Brantford	190
Elva Colantha, Wm. Jones	300
Bessie Johanna, C. Howey, Scotland	135
Eileen Nober Queen, H. H. Edmonson, Brantford	260
Pandora Cornucopia Lass, Elgin Wood, Norwich	175
Flora Fayne, Bruce Mason, Cainsville	300
Houwtje Johanna Korndyke, Thos. A. Barron, Brantford	130
Tidy Johanna Scott, C. Kettle, Wilsonville	135
Houwtje Johanna Pet, W. C. Houck, Chippawa	330
Aggie Celestia Scott, Thos. A. Barron	100
Pasma Abbekerk 2nd, C. Howey	125
Schilling Pontiac Jewel	105
Willowbanks Butter Girl, R. Robb, Branchton	180
Pauline Farforit Schilling, W. W. Easterbrook, Aldershot	245
Rideau Princess of Wood Haze, A. F. Norrie, Cainsville	280

Estelle of Rowan River, Wm. Lamb, Brantford	170
Johanna Korndyke Posch, J. S. Whaley, Caledonia	165
Houwtje Belle Brook, H. H. Edmonson	310
Rosa De Kol Spink, J. Davis, Thorold	160
Lady Spot, Geo. Clark, Brantford	180
Braeside Molly Segis, John A. Fonthill	145
Maggie Artalisa, E. Wood, Norwich	180
Floss Pauline Brook, J. D. Gale, Guelph	200
Medina Korndyke, Wm. Tuttle, Cainsville	160
Johanna Calamity, T. A. Barron	130
Johanna De Kol Pet, W. C. Houck	200
Mechthilde Kate 2nd, D. Hand, Brantford	165
Eva De Kol Schilling, Jas. Davis	250
Gussie Posch, H. L. Wood, Brantford	135
Belle Segis Star, Jas. Davis	185
Molly O., J. D. Gale, Guelph	185

Males.

Pat Ormsby Deboer, Robt. Scunk, Brantford	100
Bull, W. J. McCormack, Hatchley	335

POULTRY.

Winter Feeding for Egg Production.

BY F. N. MARCELLUS, POULTRY DEPARTMENT, O. A. C.

The present high price of feed has resulted in a number of farmers either curtailing their poultry activities or discontinuing them altogether, believing that there is no possibility of getting profitable returns on money expended. The fact of the matter is there never were greater possibilities for making a good profit from eggs produced for market than at the present time. It requires, however, strict attention to the essentials in care, feeding and management, if the hen is to lay. The high producer is very similar to a high speed motor in that it requires very little to clog the mechanism. For example, a slight cold will usually result in from three to four weeks of non-production. The hen is not like the dairy cow, which may give five to ten pounds less milk to-day than she did yesterday because of some lack of attention on the part of the owner; the hen either lays an egg or doesn't; never a half.

In feeding for winter eggs it should be the object of the feeder to provide summer conditions as nearly as possible. This does not simply mean supplying plenty of grain and water. Necessary as these are, they do not form a complete ration for winter feeding. Succulent or green food and animal food are just as essential; and grit and shell should always be in front of the birds.

Corn is perhaps one of the best grains available for winter feeding. It is heating and may form the bulk of the whole grain fed. Up to fifty per cent. of the grain ration may be corn. If feeding it in combination with other grains it is best to have it coarsely cracked. Buckwheat is another grain which is valuable as winter feed on account of its heat producing qualities. A good mixture of grains for winter feeding could be made up as follows: 200 lbs. cracked corn, 100 lbs. buckwheat, 75 lbs. barley, 75 lbs. heavy oats, and 50 lbs. of feed wheat. Many of the large milling companies now have for sale prepared scratch feeds for hens, which for the most part are quite satisfactory. The farmer, however, has most of these grains at first cost and he will find it cheaper, as a rule, to mix them himself.

The successful feeding of these grains is an art. The practice of throwing a pailful of the grain into the pen as one feels inclined will not get results. The feeder must watch his birds and regulate the amount of feed given according to the keenness of the birds' appetite. Grain is fed twice per day, morning and evening. The morning feed should be thrown into the litter, while the evening meal is supplied so the birds may obtain quickly all they can eat. It is neither possible nor wise to recommend any different amount of grain to be given as it will depend on the condition of the birds. It will be found to vary from time to time. A good guide to follow is to feed all the birds will clean up readily from day to day; never allow grain to remain in the litter from one day until the next.

There is considerable difference of opinion as to what is the best kind of mash to feed to produce eggs. During the past fall we have been using the Standard Hog Mash at the Poultry Department of the College, as a mash for laying hens. It is made up of tankage, wheat, shorts, oil meal, and ground barley or corn or both, and is fed in the dry state from hoppers which are open to the birds all the time. Where one desires to utilize kitchen waste as a part of the hens' feed it may be cooked and dried off to a crumbly condition with the mash mentioned above or with shorts, oat or barley chop. It is now generally considered that the more mash feed the hens can be induced to eat the greater will be their production. There is, therefore, much to recommend the practice of keeping a hopper of dry mash before the birds and at the same time giving a light feed of moist mash about mid-day.

Many people neglect to supply their birds with animal food during the winter and they wonder why the hens do not lay. Animal matter is just as necessary for the laying hen as grain. High grade tankage or beef scrap are frequently used to supply this particular food, mixing them with the mash. They are fed at the rate of ten to fifteen percent. with most breeds, except such as Leghorns. The latter will satisfactorily utilize up to twenty per cent. of the prepared meat foods. While scrap and tankage are quite suitable to use they are not so valuable as a source of animal food as butter-milk or sour skimmed milk. The milks have the two-fold value of supplying animal food and drink at the same time. The following will illustrate clearly the importance

Animal food used	Pounds whole grain	Pounds dry mash	Pounds animal food	Total cost	Total eggs laid
1. Buttermilk.....	785	319	1,453	\$19.46	1,508
2. Beef scrap.....	750	205	81	16.76	1,158
3. No animal food.....	925	126		15.77	602

of supplying animal food to laying hens in the form of 'A' buttermilk, 'B' beef scrap in hopper, as compared with birds receiving no animal food.

The birds used in the above trial were White Leghorns. The figures indicate fairly closely the difference between animal food and no animal food. The food costs are figured at pre-war prices.

Hens to lay well must be kept healthy. This can only be done by feeding generously with green feed. It keeps the whole system of the bird in good working order, thereby increasing its disease resisting power, which is so vital with the heavy layer during the winter. The rate of production will be increased considerably if the birds get a supply daily. Cabbage, sprouted oats, mangels, or sugar beets, are quite satisfactory to use. When starting in to feed any of these, care should be exercised as they are laxative in their action on the bowels and might cause scouring. After the birds become accustomed to eating them, they may be fed quite freely. It is surprising the quantity they will eat. For example, a flock of one hundred birds will consume daily a peck of sprouted oats.

The hen must have teeth to grind her feed with, so do not neglect to supply her with some. While it may be possible for the bird to secure plenty of grit while out on the land it is impossible for her to secure any while confined to the pen in winter. Without grit she cannot grind her grain. Grain which is not well ground is not thoroughly digested and is wasted. You can avoid this waste by supplying grit.

Eggs to ship to market without breakage require strong, firm shells. There is not sufficient lime in the cereals given hens from which to make egg shells. The result is thin shells or eggs without shells, which are a loss as a rule. This may be avoided by giving the birds crushed oyster clam shells or some material containing a high percentage of lime. The laying of eggs by the hen corresponds to the act of reproduction in animals and successful reproduction is absolutely dependent on the health and comfort of the parents. It is therefore, absolutely necessary that the pens be kept clean and the birds comfortable and contented. Renew the litter frequently enough to insure a loose, open condition, thus permitting the grain to disappear quickly when scattered on the straw. A wet, heavy litter is decidedly unhealthy for the birds, and, besides, they will not scratch in it. Avoid frightening the birds, for every time a flock of hens is disturbed in this way, it means a drop of anywhere from five to thirty per cent. in the egg production. Provide plenty of room, as an overcrowded pen will result in low production and high mortality from disease.

HORTICULTURE.

Status of Fruit Growing in Quebec.

EDITOR "THE FARMER'S ADVOCATE":

Quebec is in a peculiar position as regards apple growing, as it is impossible to grow the standard winter varieties on a large commercial basis. The province has been noted in the past for its Fameuse orchards, particularly those on the Island of Montreal, but many of these orchards have gone out through old age, neglect, or to make room for dwellings. In addition to the Fameuse, many other varieties have been largely grown, including some of the early summer Russian varieties for which there is a very limited demand—Transparent, Duchess, St. Lawrence, Wealthy, Alexander and McIntosh. The great bulk of the apples are consumed within the province, largely in Montreal and in Quebec.

The past winter has witnessed the most severe injury to the fruit trees of the province within memory of the oldest growers and the loss is probably somewhere between 15 and 25 per cent., but fortunately is largely among those varieties of least value. Optimism seems to be the key note among those fruit growers who have taken the best care of their orchards and where careful thought had been given to the choice of varieties in the beginning. Considerable planting has been done during the past ten years, and some quite large areas of from a thousand to two thousand trees have been set out. Several of these large plantings were made this past spring, and several more will be made next spring.

The Quebec Department of Agriculture has done some good work in the distribution of apple trees through the various horticultural societies and over 16,000 trees were sent out in 1918, but mostly in small lots. Optimism prevails at the home of Mr. Joseph Waddell, of Hemmingford, Que., where, from 100 Fameuse trees, approximately 700 barrels of apples were picked running over 75 per cent. No. 1, and for which an offer of \$5.50 per barrel No. 1 f.o.b. shipping station was accepted.

There is much land in Quebec, particularly in Huntingdon, Rouville, Chateauguay and Two Mountain Counties that is well adapted to growing apples, and there is a large home market and the best of facilities for an export trade. The great difficulty in the past has been that the bulk of the orchards have been small and fruit growing has been a side line, with the result that the trees are too often neglected, but with the

ruling good prices lately prevailing and the great success in the results accomplished in several demonstration orchards, more men are giving their attention to the apple. McIntosh and Fameuse, with Wealthy, Duchess and possibly Transparent as the main fillers, should predominate in future planting, and where care is shown in the selection of a site and good orchard practice is followed, success is sure to follow.

Now that the export market is again opened up, it is quite likely there will not be enough apples to supply this demand. During the past few years there has been a big falling off in production in Canada and the United States, with a large number of orchards killed out, and others so neglected that they will probably never again figure as heavy producers, at least for some years. In spite of the embargo on exports of apples and due to this falling off in production, prices have ruled above pre-war figures, and where fruit growers have continued to take good care of the orchards crops have resulted with consequent high returns.

It has been estimated that not more than 25 to 35 per cent. of the apple trees planted come into profitable bearing, and with this in mind there should be a splendid opportunity where one has a good orchard situation to plant now for future production. The home market has never been developed as it could be, and our consumption of apples is far too small per capita. The export market is also capable of greater development. The question of varieties is probably of greatest importance in the future further development of our markets. The inferior and indifferent varieties should be eliminated as far as possible, and only those well-known quality apples that increase demand and consumption should be encouraged and planted. New and promising varieties should be tried out with caution, and only after they have demonstrated their worth should they be planted in a commercial way.

To the fruit grower who has continued to care for his orchard in spite of the many difficulties, the future was never brighter and holds splendid prospects for new plantings that may be made now or shortly after the conclusion of peace.

Macdonald College, Que. Prof. T. G. Bunting

Fruit Conditions in the Annapolis Valley.

EDITOR "THE FARMER'S ADVOCATE":

Fruit growing in the Annapolis Valley is confined principally to the apple. It is estimated that the orchards planted should produce 1 1/2 million barrels annually. During the past three years the orchards have not received the cultivation and fertilization of former years. This was not because growers had any doubts as to the future of apple growing as a profitable industry, but because of the desire to help produce more essential products, turning their energies and fertilizers into other crops. The really neglected orchards are very few, and in general about as much spraying has been done during the past three years as formerly. Orchardists felt they could not afford to neglect their orchards and did their best to keep them fertilized and sprayed. Probably of all orchard operations the cultivation has been the most neglected, and, fortunately owing to abundant moisture during the past three years, lack of cultivation, except on very sandy areas and young trees, has not caused much deterioration.

Nova Scotia growers look with confidence to the future, feeling that they have advantages in their nearness to the European markets, and that they will always be able to dispose of their fruit profitably. They feel that European markets are not likely to be oversupplied for some years, and that they can dispose of their fruits on that market with profit when growers less favorably situated cannot do so. Marketing of the crop does not present difficulties met with in some places, as the fruit is either handled by agents of English fruit firms, by the co-operative companies, or by direct consignment.

The great drawback which presents itself now is lack of efficient orchard help. The orchard work is such that it can be carried on without much permanent help, but at certain times without additional temporary help it is difficult to overtake the work, particularly during harvest time. To secure temporary help is yearly becoming more difficult. With power spraying outfits and light tractors for plowing and cultivating, less permanent help than formerly will be required, and more and better work will be done than in the past. The average orchardist is inclined to specialize and would rather confine his operations to the orchard, employing as little permanent help as possible. We believe, as a consequence, there will be a large increase in power machinery for orchard cultivation. Past experience has shown that it is not wise to confine one's operations to one line only, and while this fact is realized, yet there is a desire to avoid the hired help problem, and the tendency is to do one's work within himself as far as possible, trusting that the temporary help required will somehow be obtainable when needed. This tendency will change only when the temporary help cannot be secured, and then the system will have to be modified somewhat, and provision made either through dairying or otherwise for the carrying of more permanent help.

There is no reason why our farms should not employ double the permanent help they do, but to do this means a large outlay in housing facilities, much more responsibility, and if the wages demanded are paid, the profit in the undertaking is pretty well all used up, and the man with the investment no better off than he would have been had he produced less and not employed the additional labor. This is not to say that the permanent help shouldn't have the wages he demands if he is to live as he should, but it does not seem to be well understood that every increase in wages paid in other industries makes it just that much more costly for the farmer to produce, and the result is the wage earner is no better off for he must pay more for what he eats or else it will not be produced. Farmers and orchardists apparently are pretty well past the time when they will produce at a loss, and the after the war tendency is to get along with less, rather than more help, thinking that even with the increased prices obtained they are not making any more out of their investment than formerly. The fact is that in orchard work, as in all branches of agriculture, the work is carried on too extensively to get the highest quality of product. Many are adopting the more intensive method, but the great majority have more orchard to handle than they can properly manage, with the help they employ, to secure the quality of fruit they should. It would seem, therefore, that the thing to do is to outline best methods, and do everything that can be done to show up the advantages of giving more attention to smaller areas, or employ more help to manage the larger ones. The capacity of the man and his ability to make use of his help will determine the size of orchard he may handle to profit. Another factor is the other lines of agriculture carried on, so it is very difficult to say just what orchard area a man may handle to advantage.

Community co-operation should be encouraged, particularly with regard to work. Not that several farmers should combine in doing their work, but that they should, by combining, encourage men to do certain agricultural operations. For instance, one dusting outfit properly handled could do the work on 10 farms. A tractor cultivator could do the same, and the same with plowing. There is no good reason why 10 up-to-date potato spraying outfits should be in a community if one will do the work if properly handled. Could this feature not be worked out? Why not take a group of 10 farmers and place at their disposal, a spraying outfit, a tractor plow and cultivator, a spraying outfit, corn cutter and binder, and a two row cultivator, placing these machines in the hands of efficient men and demonstrate what can be done. Throw upon the farmers the responsibility of arranging for the best use of these, on the penalty of them being removed. We hear a lot about the farm not lending itself to such organization, but it does if conducted as outlined above by having one man to handle and look after the machinery to be operated.

Through this method community co-operation would be fostered. The community would take on new life and a class of permanent help made available for the community that cannot be obtained in any other way. This would encourage a spirit of friendly rivalry between communities, without which rural sections cannot do their best. I am a greater believer in community co-operation. There is a place for larger co-operation, but the co-operation in large matters cannot be a success until we learn to co-operate in smaller things. Communities should be encouraged to attend to their own affairs and develop an individuality of their own. Responsibility develops a good type of citizen and probably our greatest failure in agricultural matters has been that the farmer has not had responsibility thrust upon him. He will hesitate to assume responsibility, but why not ask him to do certain things and help to carry them through. Show him how his community will be bettered by the individuals of the community getting together in the handling of their affairs, and take enough interest in the matter to get these individuals together and encourage them to effort by outlining definite things which can be done.

Kentville, N.S.

W. S. BLAIR.

Forcing Rhubarb in Winter.

Rhubarb can be forced very easily during the winter. As the crowns or plants, from which the stalks are to be forced, have received the necessary nourishment during the season just passed, it is not necessary to plant them in soil when being forced, although soil may be found the most convenient material in which to put the plants, as the roots must be kept moist for best results.

The plants are dug just before winter sets in, and before being put in the cellar they are left on the surface of the ground and allowed to freeze solid. An exposure to frost for from ten days to two weeks is desirable, as they afterwards force more quickly. The plants are now put close together in the cellar for forcing, either in soil in boxes or on the floor of the cellar. They may remain in total darkness while being forced, yet the forced rhubarb will be of an attractive shade of red and not light in color as might be supposed.

The best temperature for forcing is between 50 and 60 degrees Fahrenheit, though rhubarb will force at even lower temperatures. It will be ready for use either early or late in January, depending on the temperature of the cellar and will keep throwing up fresh stalks until the roots are exhausted, which will not be for two months or more. A few good-sized crowns cut off the plants in the garden will furnish enough stalks for family needs.—Experimental Farms Note.

FARM BULLETIN.

Lloyd-George Victorious in British Elections.

Never since the time of the younger Pitt has one man stood in such popular favor in Britain as does Lloyd-George. In the recent elections the Prime Minister was returned with a parliamentary majority of around 248. H. H. Asquith was defeated for the first time in thirty-two years, and his party suffered complete rout. At time of going to press the new Parliament is made up something as follows: Coalition Unionists, 334; Coalition Liberals, 127; Coalition Laborites, 10; Unionists, 46; Asquithian Liberals, 37; Laborites, 65; National Party, 2; Independents, 5; Socialists, 1; Sinn Feiners, 73; Irish Nationalists, 7. All the Coalitions with the Unionists and National Party may roughly be regarded as supporting Lloyd-George. His opposition will be found in the Asquithian Liberals, Laborites and Independents. Sinn Feiners refused to sit at Westminster. The latter element swept Ireland and gained their seats with enormous

majorities. John Dillon, the Nationalist leader, was defeated by E. De Valera, Sinn Feiner for East Mayo.

Not only did former Premier Asquith go down to defeat, but some of his most prominent lieutenants suffered the same fate. Throughout the United Kingdom 130 candidates, representing several parties, lost their deposits because they did not obtain one-eighth of the votes polled in the constituency. Out of 14 women candidates, only one was elected, namely, Countess Markievicz, who is a Sinn Feiner and will not sit in the British House of Commons, hence the coming Parliament will consist wholly of males as formerly.

Directors for the Canadian Sheep and Swine Breeders' Associations.

The official record of the mail vote for the election of directors for the Canadian Sheep Breeders' Association for 1919 is as follows: Maritime Provinces—W. B. Bishop, 85 St. Germain St., St. John, N.B.; Quebec—Jas. Bryson, Brysonville; Victor Sylvestre, St. Hyacinthe; Arsene Denis, St. Norbert Station; Manitoba—W. H. English, Harding; Saskatchewan—F. T. Skinner, Indian

Head; Alberta—R. Knight, R. R. 1, Calgary; British Columbia—Dr. S. F. Tolmie, Victoria.

The result of the mail vote for the 1919 directors for the Canadian Swine Breeders' Association is as follows: Maritime Provinces—Peter Brodie, Little York, P.E.I.; Quebec—Frank Byrne, Charlesbourg, and M. W. Miller, Brome Centre; Manitoba—W. H. English, Harding; Saskatchewan—S. V. Tomecko, Lipton; Alberta—G. H. Hutton, Lecombe; British Columbia—Dr. S. F. Tolmie, Victoria.

Live Stock May Again be Imported From Great Britain.

The "foot-and-mouth" outbreak in England has abated, and Ottawa now reports thus:

"No further outbreaks of foot-and-mouth disease having been reported in Great Britain since October 9, and assurances having been received by the Board of Agriculture and Fisheries that no reasons, on the ground of health conditions, exist why the importation of animals from Great Britain to Canada should not be allowed, the issue of permits on and after January 1 next for the importation of cattle, sheep, other ruminants and swine from Great Britain will be resumed."

Toronto, Montreal, Buffalo, and Other Leading Markets

Toronto Produce.

Live-stock receipts at the Union Stock Yards, West Toronto, for Monday's market, December 30, consisted of 96 cars, 1,777 cattle, 87 calves, 782 hogs, 1,029 sheep and lambs.

Trade steady for good butchers. Good cows and canners, strong. In-between grades of cows hard to sell. Bulls steady. Lambs, \$1 higher; tops, \$16 per hundred. Sheep strong, tops \$10.50 per hundred; calves steady. Hogs, \$18.25 to \$18.50, fed and watered.

During the past week there was only one market day at the Union Stock Yards, and that was on Monday, when 1,518 cattle, 118 calves, 3,047 hogs and 707 sheep and lambs were on sale. For the balance of the week a total of 11 carloads of all kinds of stock were received and the bulk of these were hogs consigned to packing houses.

On Monday the general quality of the butcher's steers and heifers was poor, and only a small number of good cattle was to be found in the offering. There was a strong demand for choice steers and heifers and prices averaged around 25c. per cwt. higher, while the common to medium class sold steady. Nine steers average weight 1,050 lbs. each sold at \$12.75 per cwt., and 17 steers weighing 1,065 lbs. each sold at \$12.50 per cwt.; the balance of the best cattle selling at from \$11 to \$12 per cwt.

Choice butchers were quoted at \$12 to \$12.75; good at \$11 to \$11.50; medium at \$10 to \$10.50, and common at \$8 to \$9 per cwt.

The light Eastern steers and heifers selling at \$6.25 to \$7.50 per cwt.

Choice cows were also a strong trade at prices 25c. per cwt. higher. They sold at \$10 to \$10.50; a few at \$11 to \$11.50 per cwt. The bulk of the offering was of the canner class which sold at \$5.50 to \$6; a few lots at \$6.10 per cwt. Common to medium cows sold at \$6.50 to \$8.50 per cwt. There was no change in the market for bulls, and all classes sold at prices steady with the previous week. Choice at \$10 to \$10.50; good at \$9 to \$9.75; medium, \$7.50 to \$8.50, and common at \$6.50 to \$7.25 per cwt.

There was a strong demand for choice stockers and feeders at prices steady to 25c. per cwt. higher, but there was only a limited number of this class on sale. The common kind were fairly plentiful, but the call for this class was small. Milch cows and springers were a slow trade. The best cows selling at \$90 to \$130, and common to medium cows at \$50 to \$80 each.

Choice calves sold at \$16 to \$17. Medium veal at \$12 to \$14, and common at \$5 to \$8 per cwt.

Choice sheep at \$8.50 to \$9.50. Heavy fat and bucks at \$7 to \$8, and common at \$5 to \$6 per cwt. Choice lambs sold at \$14 to \$14.50. The bulk at \$14.25 to \$14.40 per cwt., and common lambs at \$10 to \$11 per cwt. Fed and watered hogs sold at \$18.25 to \$18.50; a few lots at \$18.75 per cwt, weighed off cars; hogs sold at \$18.50 to \$18.75 per cwt.

Breadstuffs.

Wheat.—Ontario f.o.b. shipping points, (according to freights). No. 1 winter, per car lot, \$2.14 to \$2.22; No. 2 winter, per car lot, \$2.11 to \$2.19; No. 3 winter, per car lot, \$2.07 to \$2.15; No. 1 spring, per car lot, \$2.09 to \$2.17; No. 2 spring,

per car lot, \$2.06 to \$2.14; No. 3 spring, per car lot, \$2.02 to \$2.10. Manitoba wheat, (in store, Fort William, not including war tax)—No. 1 northern, \$2.24½; No. 2 northern, \$2.21½; No. 3 northern, \$2.17½; No. 4 wheat, \$2.11½. Oats.—Manitoba (in store, Fort William), No. 2 C. W., 73¼c.; No. 3 C. W., 70c.; extra No. 1 feed, 70c.; No. 1 feed, 69¼c.

Oats.—Ontario, (new crop), according to freights outside; No. 2 white, 71c. to 74c.; No. 3 white, 70c. to 73c.

Corn.—American, (track, Toronto, Jan. shipment) No. 3, yellow, \$1.65; No. 4 yellow, \$1.60; sample, \$1.45 to \$1.50.

Canadian corn, track, Toronto, sample feed, \$1.40 to \$1.55.

Barley (according to freights outside)—new crop, malting, 90c. to 95c.

Buckwheat (according to freights outside)—No. 2, \$1.36.

Flour.—Ontario (prompt shipment). War quality, (old crop), \$10.25, Montreal and Toronto. Manitoba flour, Toronto, war quality, \$11.35.

Rye (according to freights outside)—No. 2, \$1.54, nominal.

Peas (according to freights outside)—No. 2, \$2.

Hay and Millfeed.

Hay.—No. 1, per ton, car lots, \$23 to \$24; mixed, per ton, \$20 to \$21.

Straw.—Car lots, per ton, \$10.50 to \$11. Bran.—Per ton, \$37.25; shorts, per ton, \$42.25.

Hides and Wool.

Prices delivered, Toronto:

City Hides.—City butcher hides, green, flat, 18c.; calf skins, green, flat, 30c.; veal kip, 20c.; horse hides, city take off, \$6 to \$7; sheep, \$3.50 to \$4.

Country Markets.—Beef hides, flat, cured, 18c. to 20c.; green, 16c. to 17c.; deacon or bob calf, \$2.00 to \$2.75; horse hides, country take off, No. 1, \$6 to \$7; No. 2, \$5 to \$6; No. 1 sheep skins, \$2.50 to \$4. Horse hair, farmers' stock, \$28.

Tallow.—City rendered, solids, in barrels, 14c. to 16c.; country solids in barrels, No. 1, 14c. to 16c.; cakes, No. 1, 18c. to 19c.

Wool.—Unwashed fleece wool, as to quality, fine, 50c. to 55c.; washed wool, 75c. to 80c.

Country Produce.

Butter.—Butter prices remained stationary on the wholesales, selling as follows. Creamery, fresh-made lb. squares, 56c. to 57c. per lb.; creamery cut solids, 53c. to 54c. per lb.; dairy, 45c. to 50c. per pound.

Oleomargarine kept stationary in price, selling at 33c. to 34c. per lb.

Eggs.—New-laid eggs were very scarce the few offered bringing 70c. per dozen, in cartons, 75c. per dozen wholesale; cold storage selling at 53c. to 54c. per dozen, and selects at 58c. per dozen.

Cheese.—New, 28c. per lb.; twins, 28¼c. per lb.

Honey.—Honey prices kept firm on the wholesales, being quoted as follows: 5, 10 and 60-lb. pails, 28c. per lb.; comb sections, 30c. to 40c. each.

Wholesale Fruits and Vegetables.

Apples.—Prices kept stationary and trade was only fairly active during the past week. Ontarios selling at \$1.50 to \$3 per box and \$3.50 to \$8 per bbl.; Westerns at \$2.50 to \$4 per box.

Cranberries.—The Cranberry market advanced sharply owing to their scarcity

Late Keepers selling at \$18 to \$20 per bbl.

Grapes.—Choice quality Malagas sold well at \$12 to \$15 per keg.

Lemons declined selling at \$4.50 to \$5.50 per case.

Oranges kept stationary, Navals selling at \$4.50 to \$7.50 per case; Floridas at \$5 to \$6 per case.

Grapefruit had a firming tendency selling at \$5 to \$6 per case.

Tomatoes.—Hot-house tomatoes were extremely scarce with an active demand—advancing to 40c. per lb. for choice No. 1 stock—poor ones selling at 35c. per lb. and No. 2's at 25c. per lb.

Vegetables.—There was no change in vegetables, and trade continued to be very dull and draggy at the following prices.

Beets, 90c. to \$1 per bag.

Cabbage, \$1 to \$1.50 per bbl.

Carrots, 60c. to 75c. per bag.

Celery, \$7 to \$8 per case.

Potatoes.—Ontarios, \$1.50 to \$1.60 per bag; New Brunswick Delawares at \$1.85 to \$2 per bag.

Onions.—Onions, \$1.75 to \$2 per 100-lb. sack; \$1 to \$1.25 per 75-lb. sack.

Buffalo.

Cattle.—Receipts were light and the cattle market was high at Buffalo last week. Supply of Canadians dropped to only twelve or fifteen cars for the week.

There were not exceeding eight to ten loads of steers suitable for shipping demand, and these ruled a full quarter to half a dollar higher than for the previous week. Best steers offered reached \$15.50, but were only of a fair kind. In the handy steer and butchering heifer line, offerings also ran largely to the medium and fair grades, very little in this line reaching above \$10.50, some few lots reaching \$11.75, but were very good.

Better grades of butchering steers and heifers sold a full quarter higher, with fat cows generally landing at weak to lower prices, except canners and cutters, which ruled a quarter above the preceding week.

At the close of the week even fat cows of any class brought stronger prices than for the previous week. Bulls sold steady generally, some light, stocker grades possibly lower. Milk cow and springer trade, with the supply light, was strong, except for the medium and common kinds, which sold at beef prices.

Receipts for the week totaled 3,500 head, as against 6,000 for the previous week, and as compared with 4,025 head for the corresponding week last year. Quotations:

Shipping Steers, Natives.—Choice to prime, \$17 to \$17.50; fair to good, \$15.25 to \$16; plain and medium, \$11.25 to \$12; coarse and common, \$10 to \$11.

Shipping Steers, Canadians.—Best heavy, \$15.25 to \$15.75; fair to good, \$13 to \$14.75; medium weight, \$12 to \$12.75; common and plain, \$10.50 to \$10.75.

Butchering Steers.—Choice heavy, \$15.50 to \$16; fair to good, \$13.75 to \$14.50; best handy, \$11.75 to \$12.25; fair to good, \$11 to \$11.50; light and common, \$9 to \$10; yearlings, choice to prime, \$16 to \$18; medium to good, \$12 to \$15.50.

Cows and Heifers.—Best heavy heifers, \$11.25 to \$12; fair to good, \$10.50 to \$11; good butchering heifers, \$10 to \$10.50; fair butchering heifers, \$8 to \$9; light common, \$5 to \$7; very fancy fat cows, \$10 to \$11; best heavy fat cows, \$9 to \$10; good butchering cows, \$8.25 to

\$8.50; medium to fair, \$7.50 to \$8; cutters, \$6 to \$6.25; good canners, \$5.25 to \$5.90.

Bulls.—Best heavy, \$10 to \$11; good butchering, \$10 to \$10.50; sausage, \$7.50 to \$8; light bulls, \$6.50 to \$7.50.

Stockers and Feeders.—Best feeders, \$10.50 to \$11; common to fair, \$8 to \$9.50; best stockers, \$8.75 to \$9.25; fair to good, \$8.25 to \$8.75; common, \$5 to \$7.

Milchers and Springers.—Good to best, small lots, \$100 to \$135; in carloads, \$90 to \$100; medium to fair, small lots, \$80 to \$85; in carloads, \$70 to \$75; common, \$50 to \$55.

Hogs.—Buffalo had an over-supply of hogs last week, and as a result an embargo was placed on shipments from Thursday to Sunday. Demand was light and this, together with the big supply, resulted in a goodly number being carried over from day to day. Generally speaking, it was a two-priced market all week, better weight grades selling at the minimum price of \$17.70, and the underweights or throwouts, which took in hogs weighing less than 150 pounds, landed mostly at \$17. Good throwout roughs brought around \$15.25 and \$15.50, and stags ranged from \$12.50 down. Receipts for the past week reached approximately 56,200 head, as compared with 42,816 head for the week before, and 22,800 head for the same week a year ago.

Sheep and Lambs.—A rather moderate supply was offered last week and market occupied a very favorable position, a good clearance being made from day to day. Monday best lambs sold at \$15.50; Tuesday's trade was steady; Thursday tops brought up to \$15.75, and Friday the best lots reached \$16.25 and \$16.35. Cull lambs the fore part of the week sold from \$13.50 down, and before the week was out prices on these ruled as much as a dollar higher. Sheep were steady all week. Top for yearlings was \$12.50, best wether sheep were quoted from \$9.50 to \$10, good ewes sold largely at \$8.50, and cull sheep ranged from \$5.50 down. Supply for the past week aggregated 14,500 head, being against 18,991 head for the week preceding, and 14,000 head for the corresponding week a year ago.

Calves.—Demand last week was strong and a good active trade was had from day to day. Monday and Tuesday tops sold at \$20.25; Thursday the bulk moved at \$20, and Friday tops reached \$21 and \$21.50. Cull grades brought up to \$18, but it took a very desirable kind to bring above \$17. Weighty rough calves were slow all week, and grassy kinds also proved rather unsatisfactory sale. For the week receipts totaled 1,950 head, as compared with 2,214 head for the week previous, and 1,700 head for the same week a year ago.

Chicago.

Hogs.—Butchers', \$17.65 to \$17.90; light, \$16.85 to \$17.90; packing, \$16.80 to \$17.65; throwouts, \$15.60 to \$16.75; pigs, good to choice, \$14.25 to \$15.25.

Cattle.—Beef steers and butcher stock mostly 75c. to \$1.25 higher; bulls and canners, 50c. to 75c. higher. Veal calves and best feeders, 50c. higher; common stockers steady.

Sheep.—Killing lambs, 85c. to \$1.10 higher; wethers and yearlings, \$1 to \$1.25 higher; ewes, 50c. to 75c. higher.

THE ROYAL BANK OF CANADA

Capital Authorized . . . \$ 25,000,000
 Capital Paid up . . . 14,000,000
 Reserve Funds . . . 15,000,000
 Total Assets . . . 393,800,000

HEAD OFFICE: MONTREAL

Branches throughout every Province of the Dominion of Canada.

ACCOUNTS OF FARMERS INVITED. SALE NOTES COLLECTED.

SAVINGS DEPARTMENT AT ALL BRANCHES

Montreal

Following the Christmas trade, it is not generally expected that live stock markets will show any activity worthy of mention. This was pretty much the situation this year. Prices did not show any very marked advance for the Christmas trade, this year, so far as the general run of prices were concerned. Offerings immediately following Christmas were on the light side and prices held fairly steady, choice steers selling at 12½c. to 13c. for the most part and carloads of good to choice, in straight lots, at 11½c. to 12c. per lb. Common cows sold as low as 6c. and good at 9c. to 10c. while the canning stock went as low as 5c. Canning bulls sold at 6c. to 7c. The tone of the market for sheep and lambs was on the weak side with sales taking place below the recent high. Ontario lambs brought from 13c. to 13½c. per lb. and Quebecs sold at the usual range of a cent under Ontarios. Culls were being picked up at 11c. in some cases. Along with easiness in the market for lambs, went a similar trend in the market for sheep and prices ranged from 8c. to 9c. per lb. with culls available at 6c. Calves continued in good demand and the supply was fairly large. Sales took place at 5c. to 9c. for ordinary and up to 11c. and 14c. for choice, milk-fed animals. Packers were bidding good prices for hogs, the range being around 18½c. for selects, weighed off cars.

Horses.—No attention was being paid to the horse market last week. Trade was dull right along but during Christmas week it was worse. Prices showed no change, being \$250 to \$300 each for heavy draft, weighing from 1,500 to 1,700 lbs. each; \$200 to \$250 for light draft, weighing from 1,400 to 1,500 lbs.; \$125 to \$175 for light horses; \$50 to \$75 for culls and \$175 to \$250 for fine saddle and carriage animals.

Dressed Hogs.—Supplies of dressed hogs were rather in excess of demand and the weather was somewhat against trade. The tone of the market was on the easy side and abattoir dressed were quoted at 24½c. to 25½c. per lb. Country dressed were ranging around 21c. to 22c. per lb.

Poultry.—Turkeys ran up to high record prices at Christmas time, for the very choice. Quotations still were 40c. to 41c. per lb. for choice, and from this down to 32c. for common grades. Milk-fed chickens sold at 32c. to 33c. and ordinary as low as 24c. Fowl were 24c. to 28c., cheese 25c. to 26c. and ducks 32c. to 34c. lb.

Potatoes.—Prices hold very steady from week to week and Green Mountains were still quoted at \$1.80 per 90 lbs., carloads, ex-track, Quebec whites being \$1.40 to \$1.50. About 25c. is added to these prices for smaller lots, ex-store. The weather continued very favorable to this trade, being moderate.

Eggs.—Eggs continued to advance in price. Stocks are apparently light and demand is good. Quotations were 73c. to 75c. per doz. for fancy new laid, 70c. for new laid, 55c. for select fresh, 54c. for cold storage selects and 50c. for No. 1 cold store.

Butter.—Christmas trade was good this year and a large quantity of butter went into consumption, notwithstanding high prices. Quotations were unchanged, being 52½c. to 53½c. per lb. for finest

Borrow to Buy Cattle



12

THE MERCHANTS BANK

Head Office: Montreal, OF CANADA Established 1864.
 with its 102 Branches in Ontario, 32 Branches in Quebec, 19 Branches in Manitoba, 21 Branches in Saskatchewan, 53 Branches in Alberta, and 8 Branches in British Columbia serves Rural Canada most effectively.
 WRITE OR CALL AT NEAREST BRANCH.

"Mixed Farming" is the big money-maker today. Of course, grain and fruit and vegetables pay well—but beef and bacon, butter and cheese, are piling up the profits for the farmer.

Milk more cows—fatten more cattle—raise more hogs. If you need money to do it, come to The Merchants Bank. We are glad to assist all up-to-date farmers.

creamery, 51½c. to 52c. for fine, and 40c. to 45c. for dairies.

Cheese.—The Commission still quoted 25c. per lb. for No. 1 cheese, 24½c. for No. 2 and 24c. for No. 3.

Grain.—A decline took place in the market for oats, quotations being now 87½c. per bus. for No. 3 Can. Western, 88c. for No. 1 feed, 81½c. for No. 2 feed, 78½c. for heated No. 1 feed, 86c. for Ont. No. 2 white and 85½c. for No. 3 white, ex-store. Ont. Extra No. 3 barley was \$1.16; No. 3 was \$1.15 and Manitoba sample \$1.05 per bushel, ex-store. Carlots of No. 2 buckwheat were \$1.65 per bushel.

Flour.—Manitoba spring wheat, Government standard was steady at \$11.25 per bbl., in bags, Montreal freights and delivered to city bakers 10c. being allowed off for spot cash. Ontario winter wheat patents were \$11.10 per bbl., in new cotton bags, in broken lots, ex-store. Rye flour was \$11 to \$11.50, oat flour was \$11.20, barley flour was \$9.20, white corn flour was \$9 and mixed, \$8.

Millfeed.—Bran advanced in the United States owing to the relaxation of Government regulations. Up to the present, prices were fairly steady here, at \$37.25 per ton for bran, \$42.25 for shorts, carloads, ex-track, with 25c. off for spot cash. Mouille was \$68 to \$70 for pure grain and \$68 for pure oat, barley being \$54 to \$60, mixed mouille \$48 and dairy feed \$42.

Hay.—Baled hay continued in good demand, with carlots of No. 1 timothy at \$21 to \$22; No. 1 light clover mixed, and No. 2 timothy, \$20 to \$21; No. 2 clover mixed, \$19 to \$20; No. 3 timothy, \$18 to \$19 per ton, ex-track.

Hides.—The price of hides was 1c. per lb. lower, with cows 17c. per lb., bulls 15c. and steers 21c. per lb., flat. Vealskins were steady, at 25c. per lb. for grassers, 20c. for kips and 35c. for veals. Lambskins were down, at \$2.25 each. Horsehides were \$5 to \$6.75 each. Rough tallow was 3½c. per lb., abattoir fat 8c. and rendered 16c. to 16½c. per lb.

Gossip.

The Barron Sale on Jan. 15.

On Wednesday, January 15, at the farm four miles south of the city of Brantford, G. J. Barron is selling his entire herd of pure-bred Holsteins by public auction. The herd comprises 10 cows, nearly all of which will be fresh or near freshening at sale time; 6 two-year-old heifers; two just fresh, and others calving in February and March; a number of 1918 heifers and four bull calves. Breeders will note on receiving the catalogue issued for the sale that there has been little or no official testing done in the herd, but they will also note that the private records given in the foot notes of nearly all of the mature cows are exceptionally pleasing and are an indication of the worth of these cows should they go to a herd where official testing is carried on. The bulls in use in the herd include several well-known sires and bring in a lot of Ontario's heaviest producing blood, which should add considerable to the value of the offering throughout. For further particulars see advertisement elsewhere in this issue, and write now for catalogue. Address G. J. Barron, R. R. 3, Brantford, and mention this paper.

A Correction.

A typographical error in the answer to a question regarding "cement fence" in our issue of December 19, page 2109, conveys wrong information. As printed, a 15-inch fence is recommended when it should have read, "5-inch". A 5 or 6-inch concrete fence made with a reasonably strong mixture and reinforced with old wire, etc., should give all the service required of it.

Coming Events.

Jan. 9-10.—Dairymen's Association of Eastern Ontario, Belleville, Ont.
 Jan. 14-15.—Ontario Agricultural and Experimental Union, O. A. C., Guelph.
 Jan. 14-17.—Ottawa Winter Fair Ottawa.
 Jan. 14-March 29.—Short Courses at Ontario Agricultural College.
 Jan. 15-16.—Dairymen's Association of Western Ontario, London, Ont.
 February (First Week).—Live Stock Breeders' Meetings, Toronto.

Sale Dates.

Jan. 15, 1919.—Executors of A. C. Hallman Estate, Dreslau, Ont.—Holsteins.
 Jan. 15, 1919.—Geo. J. Barron, R. R. 3, Brantford, Ont.—Holsteins.
 Jan. 28, 1919.—Victoria County Pure-Bred Stock Association.—Lindsay, Ont.
 Jan. 30, 1919.—Peterboro County Shorthorn Breeders' Association, Peterboro, Ont.
 Feb. 5, 1919.—John Miller, Ashburn, Ont.—Shorthorns.
 Feb. 6, 1919.—Thos. L. Mercer, Markdale, Ont.—Shorthorns.
 Feb. 7, 1919.—J. J. Elliott, R. R. 4, Guelph, Ont.—Shorthorns.
 March 5, 1919.—Guelph Fat Stock Club, Guelph, Ont.—Pure-bred stock. J. M. Duff, Secretary.

Ontario Department of Agriculture—Report of Farm Conditions

The following is a summary of reports made by Agricultural Representatives to the Ontario Department of Agriculture:

The Dufferin Representative describes the situation not only for his own district but for the province generally when he says: "This country goes into winter quarters in much better shape than usual. Fall work is well completed. There is a tendency with some to sell grain rather than to feed, and some unfinished stuff is going out."

The fear that the price of beef may drop is also causing some to crowd their animals on the market, but the bulk of stockmen are acting more steadily, and are feeding most of their grain and fodder as usual.

Dundas reports that \$3.40 per cwt. is being paid for milk shipped from Morrisburgh to Montreal. Dairy cows are selling at auction sales in Brant at from \$100 to \$150.

Hogs are thriving, owing to the abundance of coarse grains, but little pigs are now selling as low as \$12 a pair. Bacon animals bring from \$17.25 to \$18.50 a cwt. During November six clubs in Victoria marketed 823 hogs.

Hay has a wide range of prices, which

INCORPORATED 1855

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invites farmers to discuss their financial requirements at any of their many branches.

If reasonable accommodation will enable them to increase production, they should apply to the local manager for it.

Saving Department at every Branch.

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run from \$16 to \$25 a ton. This class of fodder is now reported to be very scarce.

Haldimand states that ready sales are being made of red and alsike clover and blue grass seed. Alfalfa seed is going a little slower at prices ranging at from \$18 a bushel to \$1 a pound.

The Dundas Representative reports that there is not so large a supply of silage on hand as is usual in that county, as owing to unfavorable weather some of the corn grown for the silo was not harvested.

Apples vary greatly in price. Simcoe reports winter apples as selling at from \$3.50 to \$5.50 a barrel, depending on quality. In Prince Edward the figures range from \$4.50 to \$7.50, while Greenings bring \$5.50, and Spies \$7 in Grey.

Fall wheat is in excellent condition except on very low land. Even late-planted fields have a fair top, and the young plants are said to be well rooted.

The late fall weather was most favorable for plowing, and an unusually large acreage was done. Haldimand reports that many farmers in that county have summer-fallows plowed for next year.

Cheese Markets.

New York, specials, 37c. to 37½c.; average run, 35½c. to 36½c.; Montreal, finest Easterns, 24c. to 25c.

His Difficulty.

"Going to plant potatoes in your garden this spring?"

"I thought I would, but when I looked up the way to do it I found that potatoes have to be planted in hills, and our yard is perfectly flat."

Not Dry Literature.

It was after prohibition had reached a certain town in Ontario that an express agent telephoned a man prominent in the town. This was the message: "Please tell Mr. X. we have a package of books for him, and we wish he would arrange to get them at once as they are leaking badly."

Doctor's Only Chance.

Wife—"Hello! Dr. Bunyon? Yes? Come right away. Mr. Little has another one of his spells."

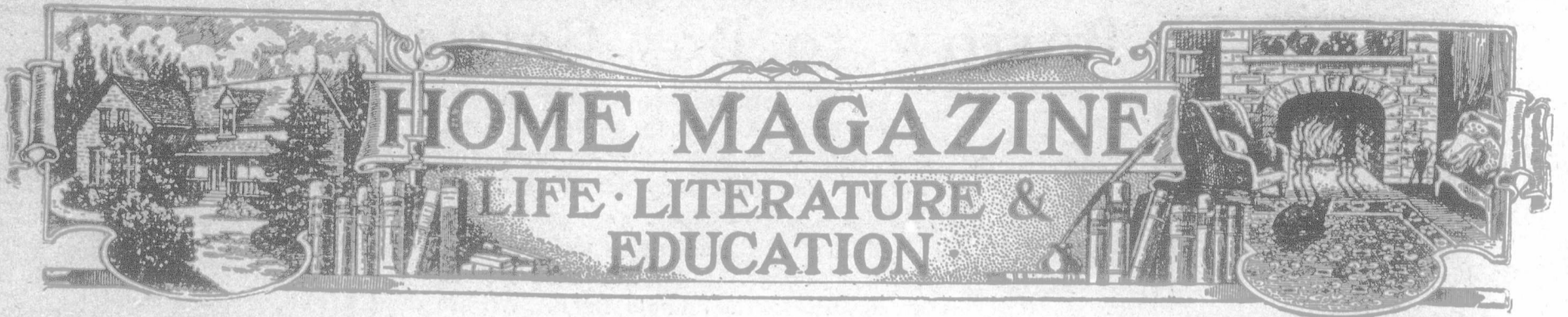
Doctor (half-hour later)—"Why didn't you send for me sooner? You should not have waited until your husband was unconscious."

Wife—"Well, so long as he had his senses he wouldn't let me send for you."

A Sure Sign.

A traveler who believed himself to be the sole survivor of a shipwreck upon a cannibal island hid for three days, in terror of his life. Driven out by hunger, he discovered a thin wisp of smoke rising from a clump of bushes inland, and crawled carefully to study the type of savages about it. Just as he reached the clump he heard a voice say:

"Why in thunder did you play that card?" He dropped on his knees and, devoutly raising his hands, cried: "Thank the Lord they are Christians!"



Miss Agnes Borthwick.

The Glad New Year.

BY RUTH RAYMOND.

Hail, hail the New Year! Ring the bells
Till music echoes o'er the dells,
Play merry tunes, sing merry songs,
For joy to this New Year belongs.
Let every grief and every fear
Be banished with the sad Old Year.

Rejoice, rejoice, forgive, forget;
There is not time for vain regret
Or sorrows o'er the past and gone;
Rose tinted is the bright first dawn
Of this New Year; and Hope a-wing
Speeds on her way some bliss to bring,
While Faith and Love come very near
As thus we hail the glad New Year.

Friendship Better Than Alliance.

(THE "TRANSCRIPT," BOSTON.)

GENERAL Jan Christian Smuts, who fought against England bravely and brilliantly in the Boer War, but has been fighting as bravely and prominently for her in this, unfolded to a group of American editors the other night, in London, an idea regarding Anglo-American relations which could hardly offend an Anglophobe. He said that America and Great Britain had it in their power to "organize the world against hunger". This suggests an economic basis of understanding founded on a duty of the possessors of the chief resources of the world, which transcends politics and puts aside all the contrempts of history. "The co-operation of Great Britain and America," said General Smuts, "henceforth will form the best guarantee for the peaceful development of civilization."

"Co-operation" is a word which involves much or little, according to the nature of the co-operation. We may co-operate only as we did in a thousand business ways before the war, with interlinking British and American control of an infinite number of enterprises, or we may co-operate as we are doing now, with our fleets and our armies commingling. Great Britain and America co-operated before the war around scores of directors' tables, and they also co-operated at Cambrai and in the great submarine hunt all over the Atlantic

Ocean and about the British isles. And the cheerful part of whatever future co-operating they may have to do, as in that of the present and the past, is that it is all free, all untrammelled by bonds or obligations. It might come to an end at any time, so far as the official ties that bind are concerned. But it does not come to an end and is not likely to come to an end, because it is founded on mutual interest and mutual understanding.

"Understanding" is the word that our recent times have brought in to conjure within the affairs of really great nations. The victory over Germany, Austria, Bulgaria and Turkey is the triumph of the Understanding, the Entente, over the 'Bund'—the Quadruple Alliance. It began with the understanding of England and France—a free understanding which replaced old rivalry and distrust. It developed into the association of half the world for the overthrow of a combination which was the very reverse of all that is free.

So far as the United States is concerned, its Government still insists officially that even now it is not in "alliance" with anybody, but only in "association." Whether or not there is any juggling with words here, there can be no doubt that the spontaneous and untrammelled nature of the association is the best guarantee of its permanence. Great Britain and America are together, we may say, by the power not of an iron band forged about them, but by the force of internal molecular attraction.

However, there is now and must remain in this association a more keenly welding force than of economic interest. The fusion of service, the sentiment of the long, hard, valiant fight together, are things above counting-houses and directors' table. And this blending of soldiers' and sailors' lives and deaths in battle is really a new thing in the history of Great Britain and America.

The seal of much blood shed together in a common cause has been put upon the joint relation. Our heroes have been in British waters. This is a sentimental entanglement that cannot really be disentangled. It is a sentiment that blends well with the "organization against hunger," nor will the blood-brotherhood that has been pledged on the battlefield and in the camp hospital interfere at all with the spontaneity of the great understanding.

The English Women Who Helped "The Boys."

TO the "long-faced" among us, concerts and "shows" may seem a very trivial part of life, something to be patronized only by the light-headed folk who can find nothing better to do. Investigators in psychology, however, have discovered that relaxation of some kind is absolutely necessary to all human beings. Given a certain amount of "play" folk do their other work better; hence the value of visiting, hobbies, golf, travelling, concerts, plays and all the games which are so essential to the young. One person may adopt one kind of relaxation, others different kinds, but no one who is wise will attempt to live without any at all, no matter how old he or she may be. By taking enough amusement as one goes, one finds the temper sweetened, the mind brightened, and the whole outlook on life better. For this reason it is necessary that provision be made everywhere, even in the most remote rural sections, for entertainment of the very best quality—a thing that we have not yet achieved sufficiently in all parts of Canada.

EARLY in the war this idea, in regard to the soldiers in the trenches, took hold in the fertile brain of Miss Lena Ashwell, a popular actress and entertainer in England. It seemed to her the giving of good concerts and plays behind the lines would do something towards keeping up the morale of the armies, so in February, 1915, she tried the experiment by taking a concert-company to France.

The boys were delighted. Every base, every camp, every hospital sent requests for "concerts." The demand had to be met, and so concert-company after concert-company was brought out, until the "Lena Ashwell" entertainers were known everywhere along the Western front and even at points in the far-away East. Always the "very best" kind of entertainment was provided for "The Boys." Harry Lauder was among the first to proffer his services, and was very popular, as he always is, but "heavier" entertainment met with full appreciation also. Usually a concert-party consisted of a quartette of singers, a violinist or 'cellest, a pianist and a reciter or conjurer, but often plays were given, Miss Ashwell



Miss Lena Ashwell, O. B. E.

herself acting in *Macbeth*, *The School for Scandal*, and some short modern plays.

"We gave *The School for Scandal*," she says, "in a wood, with half our audience on the grass, the other half dangerously overcrowding the branches of the nearest trees. *Macbeth* was given in a great hanger, with army blankets for the walls of the banqueting hall, and a sugar-box for a throne. *Macbeth* was an enormous success. Its reception was wonderful. We gave it to vast audiences; they listened breathlessly in absolute silence, and then cheered, and cheered, and cheered. There were never such audiences in the world before—so keen, so appreciative, so grateful."

Often the concert parties went right into the front-line trenches, but only men were permitted to make up these, Y. M. C. A. motor cars taking them up. Quite frequently concerts were given under shell-fire. "Some of the most successful," says one who knows, "were those for men just leaving the trenches after days of fighting, and here perhaps, the music has had its most wonderful effect. It seemed to act like magic on the exhausted men, strained almost beyond endurance by the ordeals they had had to face. The spell of horror was broken and their minds turned away from all they had suffered to thoughts of beauty and happiness."

Many stories are told of the appreciation of the men, of how they would miss a meal rather than miss a concert, and of how they would wait in the rain for hours to get a "place." Once when an entertainment was given in the Sinai Desert, some soldiers in a camp ten miles away, unable to obtain leave, were so much disappointed that they induced the Royal Engineers to lay some telephone wires by which they could listen to the music.

All of the work of the Lena Ashwell companies was carried on by voluntary contribution, Miss Ashwell herself meeting the inevitable expenses by addressing meetings and making known the work. During the War she received innumerable letters from officers, chaplains and privates thanking her for the pleasure her parties carried to them.

Perhaps this little sketch may be appropriately closed by a few stanzas written by one whom the concerts inspired to poesy, Siegfried Sassoon. The poem is entitled *Concert-Party*, and appeared first in the *New Statesman*, London.



Chief Supt. M. S. Allen, Commandant, Damer Dawson, and Inspector Goldingham.

They are gathering round
 Out of the twilight; over the grey-blue
 sand,
 Shoals of low-jargoning men drift inward
 to the sound,—
 The jangle and throb of a piano. . .
 tum-ti-tum
 Drawn by a lamp, they come
 Out of the glimmering lines of their tents,
 over the shuffling sand.

O sing us the songs, the songs of our own
 land,
 You warbling ladies in white.
 Dimness conceals the hunger in our
 faces,
 This wall of faces risen out of the night,
 These eyes that keep their memories of
 the places—
 So long beyond their sight.

Jaded and gay, the ladies sing; and the
 chap in brown
 Tilts his grey hat; jaunty and lean and
 pale,
 He rattles the keys . . . some actor-
 bloke from town . . .
 "God send you home;" and then "A long,
 long trail;"
 "I hear you calling me;" and "Dixieland."
 Sing slowly. . . now the chorus. . .
 one by one,
 We hear them, drink them; till the
 concert's done.
 Silent, I watch the shadowy mass of
 soldiers stand.
 Silent, they drift away, over the glimmer-
 ing sand.
 Written at Kantara, April, 1918.

THE second portrait shown is of
 a very remarkable young woman,
 Miss Agnes Borthwick, who by the
 end of the second year of the War, al-
 though only 26 years of age, was manager
 of a huge munitions plant that employed
 4,000 girls and a few men engineers and
 mechanical experts. By the end of the
 War the shops of the factory were 130
 in number, covering an acreage 5 miles
 in circumference, the work everywhere
 being labelled "dangerous," since it
 consisted chiefly of filling and packing
 finished shells.

Miss Borthwick was born in Scotland
 where, in 1912, she took an honors
 M. A. degree at Glasgow University.
 Subsequently, she spent 2 years studying
 in America, taking courses at Columbia
 University, New York; Radcliffe College,
 Cambridge, Mass.; and Bryn Mawr
 College, where she held a research scholar-
 ship.

She was in New York when the War
 broke out, but at once returned to England
 and soon began a course of training in
 shell and cartridge filling at Woolwich, ob-
 taining, at the end of 5 weeks, an "ex-
 cellent" certificate.

Her first shop employed but 24 girls;
 from that grew the immense concern
 which has been described.

Miss Borthwick is described as a girl
 with a very quiet manner which suggests
 a great reserve-force of resolution and
 energy.

THE third illustration is of the three
 pioneers in the women's police force
 of Great Britain, Commandant
 Damer Dawson, Supt. M. S. Allen,
 and Inspector Goldingham.

These women originated the extensive
 women's police service whose members,
 long before the end of the War, were
 to be found, trim and quiet, in all parts
 of London and other cities, patrolling
 the streets, supervising music and dancing
 halls and movie theatres, inspecting
 lodging houses, and preserving order
 about munitions plants, etc. Incidentally
 these women released hundreds of men
 for the front. So efficient has been their
 work that, doubtless the services of many
 of them will be retained in special de-
 partments of police work.

Old Caesar, according to the Columbia
 State, thought he knew something about
 the tented field, having followed his
 master as body servant through the war
 between the states, but Camp Jackson
 was a revelation to him.

"Yer mean Maus' Jeems" he cross-
 examined his young maussa "dat dese
 young gem'n can't drink nothin' stronger'n
 spring water?"

"That's all."
 "And no frolickin' wid de gals?"
 "None whatever."
 "An' no swearin' at de mules?"
 "Against regulations."
 "Lor' Maus' Jeems- disher ain't no
 camp. Disher's a camp meetin'!"

What My Neighborhood Needs for Its Advancement.

A Letter From Quebec.

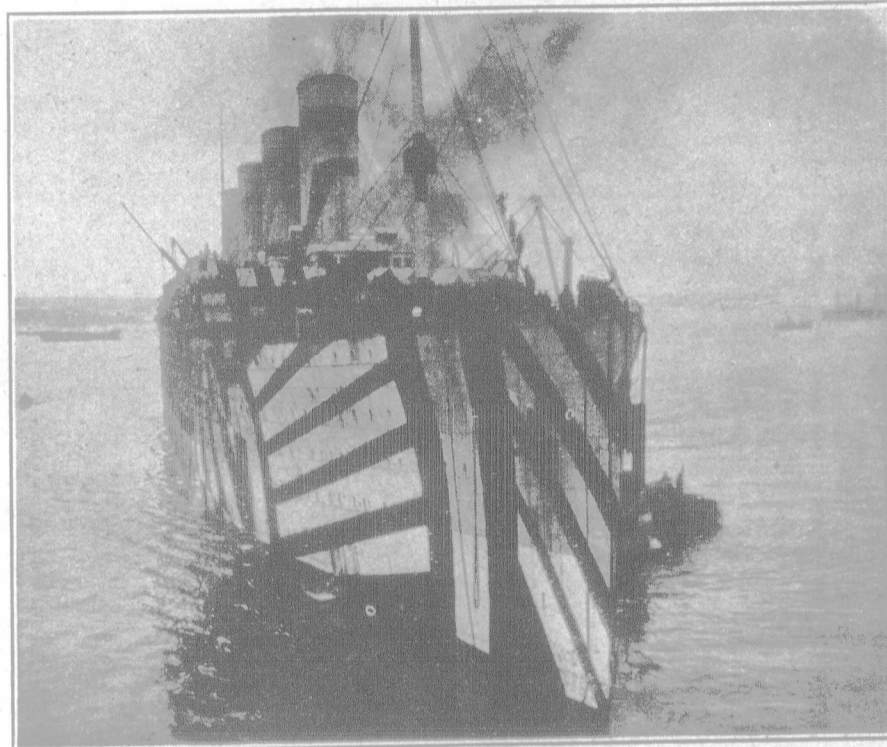
BY MAC DRUMMOND, MONTIAC CO.

AS has been well said, a thing is just as
 it is made, and the world is just like
 the people who inhabit its surface.
 The theory has been too often advanced
 that all things, including success and
 advancement, come to those that wait.
 However, those who are at all observant
 cannot help but remark that the man or
 woman, boy or girl who takes off his or her
 coat, as it were, and gets to work, ac-
 complishes far more than the other
 style of chap who stands by looking on.

We have altogether too large a number
 of the latter class in the world to-day;
 people who are looking for a soft snap,
 something for nothing, as it were, and
 it is a noteworthy fact that that some-
 thing rarely ever comes, and in most
 cases, the expectations generally far
 exceed the realizations. A young man
 once asked Henry Ward Beecher to
 find him an easy berth, and the great
 preacher replied somewhat as follows:
 "If you wish an easy berth do not be an
 editor. Do not try the law. Do not
 think of the ministry. Avoid school-
 teaching. Abhor politics. Do not prac-
 tice medicine. Be not a farmer or mechanic

are trained, or rather train themselves,
 to the highest possible standard. But
 there will always be those whose natural
 ambition and inclination and acquired
 ability fit them for leadership; those
 who might properly be termed "talent
 men". Such people are an abso-
 lute necessity in every neighborhood,
 and the more of them in any community
 the better the chances of that neighbor-
 hood for rapid growth and development.
 It is a wonderful, although not at all strange,
 coincidence that every community is
 vested with capable leaders. The United
 States in a large sense affords a striking
 example of the importance of efficient
 leadership, and her people have been
 fortunate in having such great leaders
 as Washington and Wilson to lead them
 during their times of greatest crisis.
 However, it is not alone in affairs of state
 that leaders are needed. Every industry
 requires its own special heads, outstanding
 figures in their respective callings, who,
 by force of example are a great aid to their
 fellowmen. There is always plenty of
 room at the top of the ladder because the
 majority either become scared or fall
 before reaching the last rung.

This time I intend to emphasize farming
 conditions, and consequent needs, be-



The Camouflaged "Olympic."

The good old steamship "Olympic" completing her nineteenth voyage from British ports to Halifax. She brought the largest number of returning soldiers that has come to any Atlantic port, nearly 6,000 of "The Boys", their duty well done, glad to get back home.—Of the 70,000 Canadian soldiers carried from Canada to England not one was lost at sea.

neither a soldier nor a sailor. Don't
 work. Don't study. Don't think. None
 of these are easy. I know of but one easy
 place in this world, and that is the grave."

It is the man who is always looking for
 something more to do who is helping
 to advance the nation as well as his own
 personal interests. It is far safer to
 pray for what you want, and then apply
 yourself diligently while waiting for your
 prayers to be answered. The latter
 method has and will invariably prove
 the more satisfactory.

ACCORDING to history there has
 been a steady gradual advance-
 ment of civilization as the world
 grows older. At times, progress seemed to
 delay for some reason; then would follow
 a period of rapid development, it would
 appear that everybody was satisfied
 under existing conditions, until some
 ambitious genius came forth to prove
 himself an exception to the rule, and to
 open up a new sphere for nation-wide
 use.

In my own neighborhood (and I feel
 quite satisfied that it is universally the
 case), the few do the thinking for the
 many. According to past records it has
 proven an established fact that the
 minority are generally right while the
 majority require considerable time before
 it can be convinced. This condition
 seems perfectly natural, and, so far as I
 can see, will remain so until the majority

cause mine is largely a farming district;
 but I might just express the opinion while
 speaking about leadership, that agri-
 culture was never in such dire need of
 capable leaders as at the present. During
 the last few years, particularly since the
 outbreak of the World War, agricultural
 communities are rapidly coming into
 their own; the importance of the farming
 industry has been realized by many who
 formerly took little or no interest in
 rural affairs. Many have found them-
 selves, not only partly dependent but
 absolutely at the mercy of the faithful
 tiller of the soil. As a consequence, the
 agricultural industry has received a
 decided impetus from all quarters, and
 those engaged in the occupation are
 beginning to be recognized as they should
 have been long ere now.

This world-wide realization of farming
 as the basic industry is in itself I believe
 the surest sign of advancement. This
 development is a result of the peculiar
 compulsory education hastened on by the
 war, but it is destined to become a great
 factor in agriculture the world over, and
 particularly in Canada, which is distinctly
 an agricultural country. The standard
 of farming must necessarily rise, and,
 of course, before that, the standard of the
 farmer himself. Till comparatively re-
 cently, unfortunately, main strength
 and ignorance were considered the only
 necessary qualifications of the successful
 farmer. There is an account recorded

of the method employed by the heads of
 the old Scotch families in choosing the
 careers for the respective boys of their
 families. If there was one chap who
 seemed, in their opinion, markedly
 intellectual, he was destined to be a
 lawyer; the next sharpest was educated for
 a doctor; the next in order would very
 likely be chosen for a preacher, while if
 there was, as they say, a black-sheep
 in the family who didn't appear capable
 of anything in particular, they would
 mark him down for a farmer. That was
 the last resort. You will perhaps think
 that I am exaggerating, but the example
 will illustrate what I am driving at.
 This method of selection has unfortunately
 been too closely followed in our own
 country, much to the detriment of Cana-
 dian agriculture.

Our neighborhood here, like others, has
 become sadly depleted of its best young
 people who have almost, without exception,
 gone to urban centres. There have been
 many and sundry reasons advanced in
 explanation of this "from country to
 city" movement, all of which are partly
 correct and subordinate to the main
 reason. Farming in the past has proven
 less remunerative financially than some
 city occupations. Of course, we must all
 admit that the majority of the leaders in
 every sphere of life have originally come
 from the farm, and for this reason most
 people now agree that the farm is the
 almost ideal place to raise a family, be-
 cause the environment provides most
 naturally for the most complete develop-
 ment. This fact alone should compensate
 considerably for any financial advantages
 the city may offer. Mark you, I am not
 convinced but that when all figures are
 counted up, the average city occupation
 has very little to brag about in this re-
 spect. We must teach our neighbors that
 there are other things enjoyed by country
 life which money cannot purchase. How-
 ever, money is a very important article,
 and if any business, farming included,
 fails to return sufficient dividends, that
 business must sooner or later cease to
 attract interest. I believe this to be
 the real fundamental reason why so many
 young people have and are leaving the
 farm. The farmer's reward is not all
 paid in cold cash, and this latter article
 naturally appeals very strongly to the
 youthful individual. It has been said
 that money makes the man, while others
 maintain that man makes the money.
 This is a wide subject for debate in itself,
 but, at any rate, we must allow that
 money is a very useful commodity these
 days.

Along with the necessary wages, our
 farmers, and more particularly their
 families, must have their allotted share of
 city and town advantages. Without
 them young people cannot be expected to
 be interested in or content with their
 occupation; and when any person, young
 or old, loses interest in his work, there is
 small likelihood of his making a marked
 success of it. So we must try to promote
 every influence in our neighborhood that
 will interest its citizens. They must
 be afforded an opportunity of developing
 themselves intellectually, morally and
 socially. (As a general rule the physical
 development follows automatically on
 the farm.) We should not have any
 lop-sided men or women, but should strive
 towards the all-round development.

Now, as matters are at present, it
 seems impracticable for us to follow
 such a plan for the simple reason that
 labor has come to be considered the all-
 important part of living, and our people
 have no time to stop to enjoy life or to
 realize what they are living for. Of course,
 some few take their pleasure and enjoy-
 ment while at their work, and such people
 must really enjoy living. It is a great
 pity that each and all of our citizens could
 not find out early in life what occupation
 attracts their interest most, and then
 follow that up. There is surely nothing
 more distressing than to see a man or
 woman compelled to spend an entire life-
 time at something for which there is
 little or no liking. What great advance-
 ments would take place in every line
 of endeavor if every one engaged was
 actually interested in the work, and took
 pleasure in doing it, or even better, in
 doing it well. But, as I said, there are
 comparatively few who really are privile-
 ged to enjoy their work. I think the
 majority look upon it as a form of
 drudgery which was invented for all
 mortals. When people are, as many of
 our rural people to-day, compelled to
 labor continually at something which
 they regard more as a punishment
 than a privilege and pleasure, without

intellectual or social recreation, discontent is sure to follow. Such a state of affairs cannot long exist, and eventually a radical change must take place.

TO begin with, our agricultural industry needs fuller representation in Parliament, so that its interests may be fully respected and its needs cared for. Gradually, as the necessity becomes clearer, this inequality is being remedied, but even yet we are told that seventy per cent. of our Federal members of Parliament are members of the legal profession, for the most part little conversant with farming conditions. I cannot see any logical reason why farmers as a class could not, if united, control their industry equally as effectively as any other class; yes, more effectively because they are in superior numbers. "United we stand; divided we fall". But to unite, our people must be of one mind, and here again arises the need for fuller education. I claim that the primary requisite for our people is a higher, sounder, broader, more universal education than has heretofore been sought after, and once that has been achieved, our people will have a more intensive, as well as extensive, interest not only in their own small locality, but in the world at large. In consequence, they will look at things from a broader standpoint, and when that is done, they will soon see to it that all insufficiencies are remedied. The time is coming slowly but none the less surely.

Every community has always plenty of room for expansion and advancement. As yet, we know of very few that have come anywhere near the perfection mark. What that mark may be we can only vaguely imagine. I might suggest plenty of things necessary for the development of my own neighborhood—better roads; more intensive farming; a ready home market and better marketing methods; increased railway, mail, telephone facilities, etc.; more clubs for both men and women; and, as a recently-arrived citizen proposed the other day, "the formation of a board of trade and the installation of a township-wide system of electric light and power supply." These things are all more or less necessary to the modern advancement of this and other neighborhoods, but the first requirement, in my opinion, is to educate the mass of our citizens more thoroughly, and to endeavor to stimulate their interest along every line of human effort and progress; and then each and every one of these lesser requirements will follow naturally. They are all merely incidental to the main issue.

[Will "Mac Drummond" kindly send us his real name, and his address as soon as possible? Unfortunately, his letter has been mislaid.—Ed.]

The Problems of New Ontario.

BY W. H. BROWN, THORNLOE.

IN New Ontario what one neighborhood needs for its advancement all neighborhoods need. Our lot is common. To enumerate our needs would be impossible. We need every thing from a wheelbarrow up.

Seeing our needs are so many I am going to deal with but one,—Our need of the dairy cow.

It has only been about three years since the settlers began to realize how very, very much they needed this kind of live stock.

In the past, we thought we needed implements. Consequently by the time we had ten or twelve acres cleared, many of us had machinery enough to work two hundred acres of land. The reason that we thought we needed these things was because we could get two or three years in which to pay for them. At least that was one reason we had for buying these implements. It is hard for one who is not acquainted with this country to realize how great an inducement this is. The desire to be farming is so great, and the terms of purchase are so liberal, that few have resisted the temptation to buy. It was not long before we found that we were doomed to disappointment.

We first learned that small farming did not pay. The next lesson we got was that three years was as yesterday when it was past. The notes came due, and many a farm had to be mortgaged to pay off implement notes. This has greatly retarded the progress of the country.

The pendulum has swung, and people are taking a sane view of their needs.

They are now staking their hope on live stock and especially on the dairy cow. She has proved herself the friend of the settler from the time he has his first acre cleared until he has become a fullfledged farmer.

She takes the place of implements. All that the settler need to start with is a scythe, later a mower and horse rake. Where grain has to be grown, oats or oats and peas should be sown and cut for hay. More money is squandered over threshing small crops of grain than on any other feature of small farming.

In this kind of farming oxen answer all purposes as beasts of burden until twenty-five or thirty acres have been cleaned, and are much more economical than horses, as they are easier to feed, and can be turned to beef when horses are introduced.

The place that the cow plays in the economy of the settler's home during those first few years must not be overlooked. She supplies them with milk and butter and enables them to raise their own pork.

It is an established fact that the settler needs the cow, but it has not been established how the cow is to be got. The settler comes to this country penniless and remains penniless until he has fifty to seventy-five acres cleared; after that money comes to him more freely. With a family to keep, land to clean, fences to build and buildings to erect, he is always hard-pressed for money. Although during the past two years cattle dealers have been selling cattle on six or eight months notes, the quality of the cattle has been so poor, and the time so short, that it is little better than cash. In 1917 the Ontario Government was induced to build a creamery in New Liskeard. They were also asked to bring in and sell to the settlers on the instalment plan good dairy cows. It was suggested that the Government take a lien on the cows, bind the purchaser to sell his cream to the Government creamery, and deduct half monthly on the notes. The Government did not see its way clear to have that kind of dealing with the settler, and as there was a great deal of misgiving as to what success the creamery would have the matter was dropped for that season.

The creamery was an unqualified success, and again in 1918 the matter was brought up with the same results.

The Government did not want to have direct dealings with farmers. They said it would be impossible to get cows enough to meet the demand. Then there was the "dead-beat" who would be the first man to appear.

NOW the first and the last of these difficulties could be overcome by having an organization of the settlers in each township to work jointly with the Government officials, and with the co-operation of the farmers organizations in old Ontario the other difficulty could be overcome.

It would offer the people of old Ontario a good market for years to come for good dairy cows. But bear in mind they must be good. Send your culls to the soup kitchens.

Without doubt, a well-thought-out policy of loaning money for the purpose of purchasing dairy cows would be the greatest move that could be made for the advancement of this community.

Plan for Women's Institute Council.

THE almost phenomenal growth of The Women's Institute and similar organizations throughout Canada, has made further organization necessary, so far as its administrative power is concerned. For some time this has been in mind, and recently the following plan was submitted by Supt. Geo. A. Putnam to the Superintendents of the Women's Institute or similar organizations in each province for suggestions and approval.

That a Council be formed, composed of 2 representatives from each province, with additional representation upon the following basis:

One representative for 100 and less than 200 branches.

One representative for 200 and less than 350 branches.

One representative for each 150 branches in excess of 200.

Government officials will not be eligible for election.

The representation from the various provinces upon the above basis is set forth in the table given below:

Representatives from Provinces.

	No. of Branches	No. of Members	Foundation Board	Additional Representatives	Total Representation
British Columbia.....	61	2,700	2		2
Alberta.....	230	9,000	2	2	4
Saskatchewan.....	150	6,000	2	1	3
Manitoba.....	120	4,500	2	1	3
Ontario.....	898	28,991	2	6	8
Quebec.....	40	830	2		2
Nova Scotia.....	52	1,700	2		2
New Brunswick.....	102	2,800	2	1	3
Prince Edward.....	53	700	2		2
					29

The representatives, as indicated above, will elect from among themselves a president and a vice-president. One of these, the President or the Vice-President, and four members of the executive living in Eastern Canada will form an Eastern executive; and the other, the President or the Vice-President, with the three members of the executive living in Western Canada, will form a Western executive. The Eastern executive will report its proceedings to the Western executive, and the Western executive will report its proceedings to the Eastern Executive. When matters of mutual interest are under discussion, the two executives will meet at the same time and communicate by wire. The whole executive of 9 shall be notified to meet at the same time and place when any three members so request, or it is thought advisable by the President.

A meeting of the Council shall be held between Jan. 1st and March 31st each year, and at such other times as shall be determined by a two-thirds vote of the executive.

At the first meeting of the Council the following matters should be decided upon:

1. Name.
2. Aims and Objects.
3. Powers.
4. Administration.
5. Basis for Provincial and National Conventions.
6. What shall constitute an Institute or other local organization.
7. The powers of the executive.
8. Finance.
9. Resolutions, nominations, elections, etc.
10. A clearing house for Institute news and publications.

An advisory committee composed of the Superintendent or Directors of Women's Institutes and similar organizations should be held at the same time and place, and a basis of co-operation with the Council and its executive decided upon.

Hope's Quiet Hour.

The Secret of Health.

If we confess our sins, He is faithful and just to forgive us our sins, and to cleanse us from all unrighteousness.—I S. John 1: 9.

He that covereth his sins shall not prosper: but whoso confesseth and forsaketh them shall have mercy.—Pro. 28: 13.

On one occasion a paralysed man was brought to Christ for physical healing, and the Good Physician went straight to the root of the trouble, saying: "Son, be of good cheer; thy sins be forgiven thee." When the sickness of soul was healed it was an easy thing to strengthen the unfeebled body, and say, "Arise, take up thy bed, and go unto thine house."

Disease is the result of sin, and weakness of body is the natural consequence of spiritual disease. Do not mistake my meaning, dear friends of Christ, who are bravely enduring bodily suffering for His sake. Your pain may not be the result of your own sin, for we are so closely bound together that if one member of the body breaks God's laws of health the other members suffer. Your weakened body may have to bear the consequences of other people's sins, for no man liveth to himself or can entirely separate himself from the other members of God's family.

But, when I set out to talk about the secret of health, I was thinking especially of the health of the soul. Although the Good Physician understands each patient perfectly—the confession is not needed to help Him in His diagnosis—it is a necessary part of our cure.

It has been said: "The believer has Christ between him and his sins; but the unbeliever has his sins between him and Christ". If our unacknowledged sins are held up as a barrier to separate us from our Saviour, we need not expect to be healed. Though forgiveness and help are freely offered to all who hate their sins, they are never forced upon those who have no desire to be made whole. The Healer still asks the searching question: "Wilt thou be made whole?" and it is no use trying to deceive Him with words. He is looking at the desires of the secret heart, and those desires may be very unlike the words which the lips utter.

This morning I heard a woman say, —she was discussing the question about trade relations with Germany,— "I wouldn't mind, if only they were really sorry for what they had done." Of course they are sorry for the terrible consequences, which have brought ruin and misery upon themselves; but only God can tell whether they are really humbly penitent for the injustice and cruelty of the years that have passed.

But I don't want to talk of the sins of stricken Germany. God grant that the utter collapse of her ambition to rule over all the nations may burn out the sins which were eating like a cancer into the heart of that unhappy nation.

We are all inclined to cover up our sins, but that is a very poor way of curing them. When David had broken the Seventh Commandment he tried to hide his sin by breaking the Sixth,—but he soon discovered that he was only making matters worse. Then he threw away the cloak of concealment and frankly acknowledged his sin, accepting his punishment humbly, and thankfully-receiving God's forgiveness. So the guilt was put away—God alone can cure the disease of sin—and, instead of his sins standing between him and God, his Divine Saviour stepped between him and his sins.

If we confess our sins—with sincere purpose of amendment—God is faithful and just to forgive us our sins; but, if we refuse to own that we have done wrong, His forgiveness is shut out of our hearts. If He were to pass over our sins, in easy good-nature, the disease of the soul would be made worse. Such forgiveness would only make us comfortable in wrong-doing; and —looking at God as He revealed Himself in Christ—it is plain that He has no intention of making the way of transgressors easy and comfortable.

The tendency to excuse oneself, instead of confessing the wrong done, was shown very early in the history of mankind. Adam knew he had disobeyed God's command, but he said not a word about his own sin, and threw all the blame upon Eve; while Eve lost no time in trying to shift the responsibility for her conduct upon the Tempter.

There is a story told of a city in the south which had a most disreputable row of houses. Dirt and squalor reigned unheeded for years. But the President of the United States was about to pass that way, and it was felt that something must be done in preparation for his visit.

Did the arrangement committee clean up the festering spot? Not at all. A fence was hurriedly built to hide all unsightliness from the eyes of the distinguished visitor; and things were made worse than before, because the filthy buildings were no longer an eyesore, pleading for improvement. They could be ignored and dropped out of mind, as soon as they were hidden out of sight.

Sometimes a soul acts in that criminal fashion. There is some ugly, deliberate sin, which is poisoning the springs of life. Instead of seeking the Good Physician, humbly acknowledging the sin and faithfully obeying His commands, a fence of reserve is built up. Other sins

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are frankly confessed, perhaps; but this particular one is a shame and disgrace. Besides, the sinner is not quite ready yet to give up. He is like the man who pleaded: "Lord, make me pure—but not yet." Or, he would like to be freed from the misery caused by the secret sin, but is not brave enough to face the consequences of confession.

It may be a sin against man, as well as against God; and it is easier to confess to God—who knows all about the sin already—than to endure the humiliation of confessing the matter to the men who have a right to know.

It is so easy to make excuses for oneself, to refuse to look honestly at the ugly, festering spot.

Perhaps a man has told a lie which is injuring someone else. He really hates lying, and has a reputation as a very truthful person to maintain; so he makes his truthfulness an excuse for refusing to right the wrong. The matter can't be set right without lowering him in the respect of his neighbors. So he builds a fence in front of the ugly lie, and does his very best to forget it himself. Yet it is not cured. It is a festering sore, which makes his soul weak. He dares not kneel at the feet of Christ and say: "Lord, what wilt Thou have me to do?" for he knows that if the order should be given to right the wrong—as far as he is able—he is not prepared to obey that order. The sin he hates is standing between him and his Saviour. He can't find rest and healing for his soul unless the sin is uncovered before God, and—if that is necessary—confessed humbly to men.

The publican in the Temple was justified because he frankly confessed his sin. The penitent thief owned that he justly deserved the dreadful punishment of crucifixion. These men offered no excuses but they did not—like some open sinners—defiantly and shamelessly acknowledge their sins. They did not say—like some modern publicans—"I am not a canting hypocrite like those self-righteous church-people," and so refuse the help of the Good Physician. It is mockery to acknowledge our sins without intending to fight against them.

"The sinner, who was ashamed to lift his eyes to heaven, lifted his heart, there, and the Lord drew near the humble one."

Too many lives are wrecked or sadly weakened by old sins which have never been honestly opened up to the Good Physician. Those who treat an earthly physician so insincerely can hardly gain much help from his skill. When a cancer is destroying the body it is not hidden from one who may be able to cure it. Do we care less about diseases of the priceless soul? The body will be worn out in a few years, anyway, but the soul will go on living. Can we endure to be diseased in soul, and make excuses to hide our condition from Him who still has power on earth to forgive sins?

Outward respectability may be a sham in His eyes, like whitewashed sepulchres full of all uncleanness. No fence of excuses can deceive the Divine Lover. He will tear it down so that the shamed soul may come to Him and be healed. Even if the new beginning is made only at the last hour of this life—as in the case of the dying thief—it is a real beginning, not an ending.

"This world is not conclusion:
A sequel lies beyond."

DORA FARNCOMB.

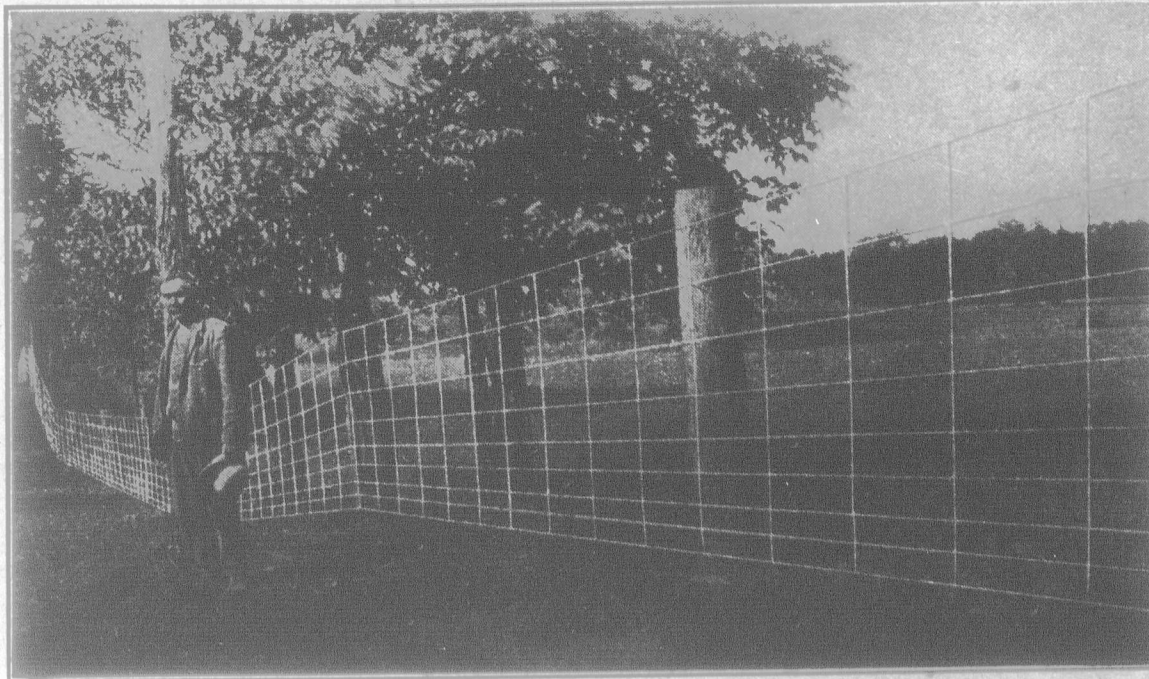
The Windrow.

Count Hohenzollern, the ex-Kaiser, is said to be writing his biography and a history of his reign.

In Bombay City, India, the recent Flu ravage claimed 15,000 victims out of a population of 1,000,000. In many places in India the death rate was twice that.

In Canada during the War 360 ships were built. Of these 22 were built through the Imperial Munitions Board for the British Government.

1,400,000 French soldiers were killed during the War, and 2,000,000 Germans. Of the Russians 1,700,000 were killed, 1,450,000 disabled, and 2,500,000 were taken prisoners. Of the Italians 500,000 lost their lives because of the fighting, besides 300,000 who died of disease.



It's Easy to Erect PAGE Fencing EVEN OVER HILLY GROUND

The superior weight of Page Wire Fence is not a matter of theory—you can prove it on a set of Platform Scales.

When it comes to a question of galvanizing you will have to take our word for it that the galvanized coating is the best on the market, and the best that money will buy. This statement can be vouched for by the fact of thirty years of honest dealings with Canadian farmers.

But the question of uniform weave, is also of great importance, because it has a direct bearing on the ease of erecting the fence, and its appearance and utility when it is erected.

A poorly woven fence will show its defects quickly when erected on uneven ground. Going over a hill, it will be tight on top, and saggy at the bottom, while going through a ravine, the bottom will be tight, and the top will be flabby. Insure against this trouble by using Page Wire Fence, at the same time, remembering

that a fence which is adapted to hills and difficult places, is also the best on the level.

How Page Fencing looks on uneven ground is shown in the above illustration, taken from an actual photograph. Notice how straight and tight every strand appears. Then there is another thing about Page Wire Fencing that is important to the purchaser. Our exclusive process results in the wire in Page Fencing being coiled instead of merely waved. This gives great elasticity and strength. A Page Fence may be buried in a heavy drift of snow and ice during the Winter, yet when the snow melts in the Spring, it will tighten up, and practically renew its original shape.

You take no chances when you buy Page Fencing. Made of genuine No. 9 wire, every step in its manufacture is designed to add strength and staying power.

Good live Agents wanted in every town and district. If there is no Agent in your town write to our nearest branch for full particulars.

THE PAGE WIRE FENCE COMPANY OF CANADA, Limited

MONTREAL TORONTO WALKERVILLE ST. JOHN WINNIPEG

KEITH'S SEEDS
THE FARMER'S SEEDSMAN FIFTY-TWO YEARS SERVICE
1866 1918

CORN
For 1919 Sowing
Specially priced for early shipment. Carefully selected, strong, vigorous seed. Recent tests show 95 to 98 per cent. germination

ON COB		Per Bus.
		70 lbs.
Longfellow	.....	\$4.50
White Cap	.....	3.75
Golden Glow	.....	3.75
Wisconsin No. 7	.....	3.75
Balle	.....	3.75
Improved Leaming	.....	3.75

Orders of 5 bushels or more, we will pay freight in Ontario and Quebec. Write at once for our ADVANCE PRICE LIST and compare our prices with others. We sell direct to farmers. No Middlemen's profits.

BARGAIN IN BAGS
Second hand bags strongly patched by machinery. Cotton first quality, \$6.00 per dozen. Cotton, second quality, \$5.00 per dozen; third quality, \$3.50. Jute sugar bags, \$1.65 per dozen. Jute flour bags, \$2.00 per dozen. Write for our Poultry catalogue.

GEO. KEITH & SONS
124 KING ST. E. TORONTO

DO YOU NEED FURNITURE

Write for our large, photo illustrated Catalogue No. 7—It's free to you.
THE ADAMS FURNITURE CO., Limited
Toronto, Ontario

Beaver Hill Aberdeen-Angus and Oxforda—Cows with calves at foot. Females all ages. Bulls of serviceable age. Ram lambs and a few shearing ewes.
Alex. McKinney, R.R. No. 1, Erin, Ontario

The Ingle Nook

[Rules for correspondence in this and other Departments: (1) Kindly write on one side of paper only. (2) Always send name and address with communications. If pen name is also given, the real name will not be published. (3) When enclosing a letter to be forwarded to anyone, place it in stamped envelope ready to be sent on. (4) Allow one month in this Department for answers to questions to appear.]

The Flu Up to Date.

DEAR Ingle Nook Friends.—I trust you will forgive me for coming back again to this subject. I do so only because I have heard of the breaking out of the disease again in so many places, and of so many people taking it a second time; also because a great many doctors are of the opinion that it may renew itself in the spring with redoubled force. The theory is this: Cold weather it appears, invariably acts as a check on it, the unusual mildness of the winter up to the time of writing (Dec. 20) being the reason for its widespread ravages so far since real winter weather should have set in. Between this and spring there is likely to be cold weather, but whether there is or not, the greater mildness and dampness that are to be expected as March gives way to April will likely act as a rejuvenator to the Flu. Enough cases are likely to hang over to set it going then. Moreover, soldiers and others will be constantly returning from Europe, the hot-bed in which the disease was generated, and where it still stalks with ghastly tread. Indeed, the belief gains to-day that the "Flu" is none other than the old-fashioned "plague" that has always followed upon the heels of war, arising from the corruption of battlefields. Recently I heard a doctor say, "Never before in the world was there so great a mass of bodies of men and horses buried in the same space—and insufficiently at that—as now lie in the fields

FEEDS

Save Time and Money

Order by mail from this old-established and reliable feed house. Our prices on Linseed Oil Cake Meal, Corn Oil Cake Meal, Gluten Feed (93% Protein), Bran, Shorts, Feeding Corn Meal, Digestive Tankage, Wheat Screenings, Corn, Cracked Corn, Beef and Bone Scrap, etc., are the lowest obtainable. Ask for prices on car lots, of Linseed Oil Cake Meal

WE BUY—Hay, Straw, Oats, Barley, Buckwheat, Mixed Grain, Potatoes in car lots or less. State quantity and send sample.

Canada Food Board License:
No. 3-170, 9-1917, 9-1779

CRAMPSEY & KELLEY
BOVERCOURT ROAD, • TORONTO

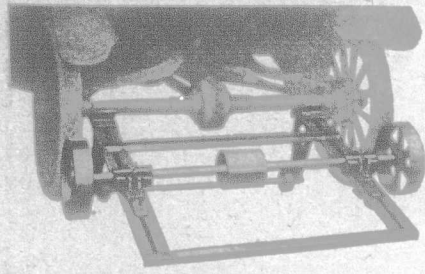
REES & SHRUBS BROWN BROTHERS Co. BROWNS NURSERIES, ONT.

For Sale: Essex Seed Corn

Grown from native seed, and germination guaranteed—Bailey White Cap Leaming and Wisconsin. Special prices for clubs.
A. G. BILLING, R. R. No. 1, Essex, Ontario

SEED CORN

A quantity of choice White Cap Yellow Dent (an early strain) for sale, at \$4.50 for 75 lbs., f. o. b. Highgate. Bags free.
J. F. STONE, Kent Co., Highgate, Ontario



GET a Handy Power Plant

The best and cheapest car power you can get. We have an opening for a few live dealers.

Price \$44 f. o. b. Toronto.

WEBBER MACHINE CO.
848 Dupont St., Toronto.

WANTS & FOR SALE

Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock.
TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

Creamery or Cheese factory to operate for Season 1919 or yearly. Sixteen years experience. A 1 reference with diploma. Write I. B. Chandler, 165 Sandwich St., E., Windsor, Ontario.

HERDSMAN, MARRIED, OR FARM SUPER-INTENDENT, or rent 100 acres; life experience; two sons, good milkers; wife dairy and poultry woman, by first of March. State particulars first letter. Box H, Farmer's Advocate, London, Ont.

PUPS FOR SALE—BLACK AND WHITE. Bred from excellent cattle drivers. Males \$5. Females \$4. Esra Stock, Woodstock, Ont.

WANTED—AT ONCE, A SINGLE MAN, about forty years of age who understands working on a farm and looking after cattle; a Scotchman preferred. Please state wages by year. Apply to A. J. Fox, Harrow P.O., Ont., R. R. No. 3.

WANTED—Single man by year for farm work. 100 acres all cleared, not much stock. State wages. F. MERRILL, St. Thomas, Ont.

WANTED farmers, farmers' sons or Agricultural Implement Dealers to represent a large manufacturing firm, with thirty years of success behind it, as salesmen in their localities to solicit orders for Feeds, Calf Meal, Stock Tonics and Veterinary Preparations. Person having selling ability and familiar with live stock conditions preferred. Substantial commissions and permanent positions can be had by high-class men. Apply giving information, age, etc. Box 10, Farmers Advocate, London, Ontario.

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 50 cents.

BARRED ROCK SPECIALIST TWENTY years. "Winter layers, heavy weighers." Choice cockerels \$3.00 each. Earl Bedal, Brighton.

Large Toulouse Geese, Farm Indian Runner, Drakes, Houdan Cockerels, Choice Stock. E. E. McCombs, Fenwick, Ont.

Offering a few White Wyandotte Cockerels of good type, at \$5 each, Approval. Frank Morrison, Jordan, Ontario.

WANTED Crate-fed Chickens

(Dressed)
Also LARGE FOWL (Alive)
Write for Price List.
WALLER'S, 702 Spadina Ave., Toronto

Dyke's Automobile and Gasoline Engine Encyclopedia

A standard text of over 900 pages adopted by the United States Government. Money refunded if dissatisfied. Every automobile and tractor owner should have one. Send \$4.50 for postpaid copy to Dept. B, Dominion Text Book Co., Calgary, Alta.

NONE-SUCH SEED CORN

Golden Glow—Wis. No. 7—White Cap. I furnish a good new cotton bag and pay charges to your nearest station, also guarantee that if not satisfied in ten days return corn at my expense and money will be refunded. Write for prices and particulars to R. A. Jackson, R.R. No. 1, Cottam, Ont.

of France and Flanders. The air above during the past four years must have reeked with germs and poisonous gas. It stands to reason that from this started the plague." He expressed it as his opinion also, that the whole ocean of air surrounding the earth may have become charged with the germs, and, in support of the theory, referred to the fact that the infection has found its way to Indians of far-away Alaska and other places who have had no intercourse with the outer world. In the spring, he thinks, the thawing ground of the burial-places in Europe, will again liberate germs and poison-gases, now held dormant by the frost, and so a renewal of the epidemic may be expected.

All these opinions may be right, or they may not;—scientists seem to be still experimenting with the Flu and failing to understand it perfectly. As a rule, it is known; most disease germs live only a short time after passing from the body,—in bright sunlight only 20 minutes; it may prove, however, that the plague germ has more vitality and is more persistent, and may even carry in the "ocean of air."

The Flu may break out in the spring again, or it may not. That remains to be seen.—The point is, that it is not over yet, that it is said to be spreading out over the farms everywhere, and that it can return a second time, even within a few weeks, to areas over which it has once passed.

WHAT shall we do then?

In the first place we must rest on our oars and let things slide. Already this epidemic has killed more people than were killed in the War, and if we remain as careless as the most of us seem to be at present as many more lives must pay the price. Ceaseless vigilance along scientific lines is our only means of stamping out this terrible plague,—and municipal and private vigilance should go hand in hand.

Some places in Canada may have taken all the steps possible to take publicly. In the little town of Warton, Ont., for instance, every house in which there was a case of Flu has been placarded and quarantined. To-day (Dec. 20) the papers say St. Thomas, Ont., is beginning to take the same step. There may be other places doing similarly. But such precautions have been all too rare, and the efforts of those sections which have taken them have been nullified to a great extent by the carelessness of surrounding places, and the constant circulation of people therefrom.

The chief trouble has been lack of persistence. In most places immediately after the first outbreak there was a great flare-up for two or three weeks. Schools, churches and theatres were closed, meetings were forbidden, emergency hospitals were opened, and some sort of attempt made to secure systematic distribution of nurses and V. A. D's. As a result, of course, the number of cases and deaths decreased. Immediately every precaution petered out. The public allowed itself to be lulled into a feeling of safety, "business as usual," became the slogan, the lights again flared from theatre and "movie" doors, concerts began again, "all went merry as a marriage-bell," tra la! . . . But in the meantime the Flu, insidious as ever, was taking hold again. Nor, in the great majority of cases, was any real effort made to stem it again. It was only incidentally that one heard that the hospitals were filling up again, and that still people were dropping off, here and there, from the Flu.

—Not one step further taken to isolate recovering people still discharging germs, from mingling with others.—Not one step to teach people how to avoid taking the disease or how to treat members of the family taken down with it!

—This condition may not, at time of writing, be universal in Canada, but it is all too general.

As a result, even yet very few people except those who have had a taste of it, realize the real nature and danger of the so-called Spanish Influenza. It is a great pity that it was ever called "the Flu." That was such a good handle to make a joke of.—"Have you had the Flu yet?" people say, even yet,—and laugh. Had the epidemic been called "the plague" right from the beginning, there might have been more seriousness, and, perhaps, a more determined and concerted effort to stamp it out. Of course, that may all have been because at first even the doctors did not realize the seriousness of the disease. To begin with they took it

for something of the nature of the old-time gripe. . . . Then they became puzzled. . . . Then baffled. . . . Now any one of them, who is honest, admits that he has come up against one of the worst diseases in the whole range of his experience.

WELL, but what shall we do, then?

In the first place, if the disease is epidemic, or threatens to become so, in your district, don't kick against, or act contrary to any health orders that are in force or have been advocated by your Medical Health Officer. . . . If no public measures are being taken, *agitate for them*. Find out why your M. H. O. is doing nothing, and let him know what he is there for.

If he orders every meeting-place closed, clap him on the back for it. If he orders everyone to wear a mask, get your mask in short order and wear it. If he orders your house placarded and quarantined in case the disease appears in it, commend him for it. None of these things is pleasant to conform to, but, in case of an epidemic such as this, their enforcement marks the efficient M. H. O.

In Italy, by Royal Proclamation, everyone is wearing a mask. . . . The famous New York physician, Dr. Woods Hutchinson, stated recently that "masks and vaccine have been found, so far, the most successful means of combating the epidemic." As one example he tells that in San Francisco, where the matter was taken up with determination and these two preventives generally resorted to, the deaths were in 6 days reduced from 2,300 a day to 300 a day, statistics also showing that among the 81,000 people first vaccinated in that city there were almost no deaths. He says also that the masks were found very effective in checking an epidemic of chicken-pox, and states his belief that they should be as useful also against other diseases, such as scarlet fever and diphtheria. (One of the leading doctors in this city, by the way, has just told us that the masks may be made of cheesecloth, 8 to 10 layers, without any chemical preparation whatever.—Easy enough to prepare, surely).

Now such precautions do not seem very impracticable do they? They have been tested in Italy and San Francisco and some other places, even in our own country. . . . A recent picture of the Board of Trade in Winnipeg shows every man but two wearing a mask. In most of our hospitals the doctors and nurses in the Flu wards invariably wear the same decoration. . . . Vaccination, too, is receiving more attention of late. The other day the Colonel of a big military headquarters told me he intends to have "every man about the place," also his own family inoculated.—If such methods are useful among part of our people why are they not generally adopted?

THE foregoing all applies, more specifically, to measures that may, and should be put in force by the authorities (some may object to the inoculation) in any place where the plague threatens to become epidemic. But there are also measures that people can and should take "on their own."

In the first place unless the call comes directly to you to help someone already ill, avoid taking the Flu if you can, and keep your children away from it.—It may be to a certain extent "in the air," but we know that one is much more likely to get it if one comes in contact with people who have it or have just recovered from it and are still discharging germs.—Keep away from crowds and keep your body in first-class condition. Breathe the best air you can find; take sufficient rest and sleep; wear light, warm clothing and keep your feet dry—to avoid colds; eat good nourishing food, and enough of it. All this will help to keep the body well and strong, and a well, strong body is always more resistant to any kind of disease, than a weak, poorly-nourished one.

When obliged to go out to do shopping, etc., don't let your face come too close to the faces of others; they may be still discharging germs after the Flu, or one of them may chance to be one of those mysterious persons called "disease-carriers."—This is not likely but it is possible. . . . If you want to be very careful, wear one of the "Flu-veils" now sold in the most progressive stores; they have medicated gauze stitched on the part that comes over the mouth and nose.

If the call comes to you to nurse someone taken down with the disease *don't*

Why worry about Fuel

WHEN YOU CAN PUT

Oliver Oil-Gas Burner

in your Range, Heater or Hot Air Furnace; 15% more heat. Over 200,000 users in the U.S. Like Gas—purer, better baking, Roasts and cooking. No ashes to carry or sift. Write for circular.

Petroleum Products Co.

ST. CATHARINES, ONT.

Agents wanted Everywhere

Annual Live Stock Sale

The Provincial auction sale of pure-bred stock (Beef Breed) under the auspices of the

Ontario Live Stock Department

and the management of the Guelph Fat Stock Club will be held in the Winter Fair Building, Guelph, on

Wednesday, 5th March, 1919

Entries close 25th, January, 1919.

For further particulars apply to

C. L. NELLES, President.

J. M. DUFF, Secretary.

Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

313 WILSON EAR DRUM CO., Incorporated
Inter-Southern Bldg. LOUISVILLE, KY.

SEED CORN

Carefully selected and rack-cured. Won 1st. prize at Elgin Corn Show for this variety. Golden Glow Yellow Dent. High quality—\$5 per bushel of 70 lbs. Bags free. Special price on 5 and 10 bushel orders. J. L. Watterworth, Wardsville, Ont.

be afraid. If you wear a mask and wash your hands *always*, after coming in contact with the patient or anything he can infect, there will be very little danger for you. It is *carelessness* that makes danger. Feed the patient digestible and very nourishing food—chicken broth with bread, custards, etc.,—remembering always that the Flu makes especial demands on the blood, thinning it and leaving the patient anaemic and so non-resistant to the ravages of the disease germs in his body. Good food is necessary to combat this. The disease is also hard on the heart, hence keep the patient on his back; do not let him sit up. . . . Put the plate, bowl, spoon, etc., that he has used at once in boiling water and sterilize, and keep a few dishes for his especial use. If you don't do all this someone else may be given the disease.

Be sure to carry out *exactly* the directions of the doctor. By this time he ought to be up to his business and know all there is to be known about Flu. . . . And, last of all, don't let the patient get up too soon. Even after he seems to be better keep him in bed a week or two. To let him up too soon is to invite danger of relapse and pneumonia.

Re Cheese.

Answered by Prof. H. H. Dean, O.A.C. Guelph.

Replying to yours of December 9th regarding enquiry of "A Farmer's

about Fuel

AN PUT

s Burner

Water or Hot
more heat.
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better baking,
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Ears require no
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Won 1st. prize
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H. Dean,

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Farmer's



*Feed Them
Sugar Beet Meal*

The minute you place Sugar Beet Meal before your animals, you will know that it is good for them, because they will devour it with such evident relish. A feed that cattle obviously enjoy, is usually a feed to be depended upon, and, if you consult the leading authorities on stock raising, you will find them to be unanimous in praising Sugar Beet Meal for the production of growth in young steers, and milk in dairy cows.

In all the leading Agricultural Colleges today, special emphasis is being placed on the value of "net energy" in feed stuffs. In this respect, Sugar Beet Meal ranks very high, containing 76 lbs. in each 100 lbs. as compared with standard wheat midds of 59, wheat flour midds of 75, wheat bran of 53 etc.

In a balanced ration feed, Sugar Beet Meal is valuable because it makes the entire ration succulent and palatable, and has laxative and mineral properties.

Another desirable feature of Sugar Beet Meal lies in its bulk properties. A balanced ration feed should weigh not over 4 pounds to a 4-quart measure, and, at the same time, should have approximately 20% crude protein or better. The only way this bulk can be

secured is by the use of some such feed as Sugar Beet Meal, in the ration.

Cut out some of the highly concentrated feed that is so rich in "nutriment", and balance the ration with succulent, appetizing Sugar Beet Meal. You will not only reduce your feed bill, but will get quicker results from your beef steers and more milk from your dairy cows.

GUARANTEED ANALYSIS OF SUGAR BEET MEAL:	
Protein, not less than.....	8%
Crude fat, not less than.....	5%
Crude fibre, not over.....	23%
Sugar and Starch (Carbohydrate), not over.....	60%

In former years most of our Sugar Beet Meal production was sold in the United States, where farmers have learned to appreciate it highly.

This year, in order to help out the feed situation in Canada, the Canada Food Board have asked us to introduce Sugar Beet Meal to Canadian Farmers. We have been offered as high as \$45 per ton for

our output by U. S. interest, but, to make Canadian Stockmen acquainted with this splendid feed, we have decided to fix a special price of \$35 per ton f. o. b. Factory—containers to be returned to us.

Write for our new booklet which fully describes the value of Sugar Beet Meal, and explains how to obtain it and how to use it.

DOMINION SUGAR COMPANY, LIMITED,

Head Office: CHATHAM, ONT.

WILLIAMS
New *Scale* **PIANOS**



THE Pure, rich, mellow tone, and the sensitive responsiveness of this famous instrument combine to lift it high above the commonplace. It is a piano that will maintain its enduring charm for generations.

Georgian Model, \$550.00
THE WILLIAMS PIANO CO., LIMITED, OSHAWA, ONT.
Canada's Oldest and Largest Piano Makers

**CREAM PAYS WELL
THESE DAYS**

**WE PAY EXPRESS AND
SUPPLY CANS**

**SHIP YOUR CREAM TO
LINDSAY CREAMERY, LTD.
LINDSAY, ONT.**

Ottawa Winter Fair
OTTAWA, ONTARIO
January 14, 15, 16, 17, 1919.
ENTRIES CLOSE JANUARY 3rd.
Write the Secretary for Prize List.
Reduced rates on all Railway fares and one-third for round trip.

WM. SMITH, M.P., President
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GRAND TRUNK RAILWAY SYSTEM

**TIME TABLE
CHANGES**

A change of time will be made on
JANUARY 5th, 1919

Information now in Agents' hands.

We Buy Raw Furs

It stands to reason that we, being manufacturers, can give you
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Daughter," regarding length of time the cheese should be kept at a temperature of 94 to 96 degrees, would say that this temperature should be maintained for about three hours, or until the curd is quite firm. This is determined by squeezing some of the curd in the hand when, if the particles fall apart readily, the curd is properly cooked; if they remain soft, and stick together, then the curd is not properly cooked and it must be either heated to a higher temperature or be cooked longer.

English readers are gradually becoming acquainted with the poetry of China and Mr. Arthur Waley's translation "A Hundred and Seventy Chinese Poems" will assist familiarity. Mr. Waley has an excellent method of giving all the point of Chinese satire without apparent artifice. Here is a poem by Su Tung-p'o of the eleventh century on the birth of his son:—

Families when a child is born.
Want it to be intelligent.
I through intelligence
Having wrecked my whole life
Only hope the baby will prove
Ignorant and stupid.
Then he will crown a tranquil life
By becoming a Cabinet Minister.

Wang Chi (circa A.D. 700) remarks:—
I should like to have visitors come and discuss philisophy
And not to have the tax-collector coming to collect taxes.

The Forging of the Pikes.

[A Romance Based on the Upper Canada Rebellion of 1837.]
(Serial rights secured by "The Farmer's Advocate and Home Magazine.")

CHAPTER VII.

The Doings in the Mill.

June 13th, 1837.
THIS is Tuesday night, the end of a warm day with the hay almost ready for the cutting, and strawberries ripening everywhere in the grass. We got the first of them on Sunday, Hank and I.—But I am anticipating.

That day, mother, father and I walked to church by the woods road, my mother very fine in her purple dress with white frills, very wide and outstanding, and her small, green parasol. When we got to the Corners it was still early, and the usual crowd was gathered about the meeting-house door, chatting in the sunshine. We stood there too, and presently Hank's father came over and spoke in a low tone to my father. Hank himself came to me and said, also in a low tone.

"Do you know what's up?"
"No," said I, "what is it?"
But just then the bell began to clank (our meeting-house bell never "rings," not even so much as my mother's mould-board, with which she calls us to dinner) and so he had but time to say, "Tell you after church,"—which sent me in, very much wondering.

There was no great pleasure in the service, for the regular minister was away, and our "local preacher" in the pulpit, who did his best, with the sweat streaming down his face worse than mine does in a logging-time, with Buck and Bright at their devilshesht. So I tried to shut my ears, and looked out of the window at the trees, and watched a bluebottle fly on the window, and presently took to gaping about at the people, familiar as they are to me.

There was Mistress Jones, sitting up very straight in what my mother calls her "black bombazine," but keeking out furtively at us from behind the huge fan that she waved to and fro, so that the cock feathers on her bonnet were kept a-going, making one think of a cock-fight. And there was Tom Thomson already peacefully sleeping, with his mouth open. And there was old Macaleer, fervently ejaculating "Praise the Lord!" whether it fitted or not, and much to the disgust of my father, who hates these revivalist ways, but since our church is a union meeting-house has to put up with them.

Then over the rows of bonnets and between the dresses of homespun and calico, I could just see Dimple, very cool and charming in a white contraption with sprigs of blue, and blue cornflowers in her bonnet,—"alone like the moon" as The Schoolmaster remarked one day,

because of the width of her crinoline, which will let no one within a yard of her on either side. Looking at her made me think of Barry. Only once did Barry come to this meeting-house, and then she was in duller garb than she usually wears, and I remember that when I remarked on it she said, "But the other girls have to dress so plainly, Alan, all except Dimple."

Looking at Dimple made me also think of Hank, and I turned to see him in his corner, with his dear old tously fair head, which won't stay smooth, leaned back against the wall. He was very careless of Dimple or anything else present just then, for he was gazing off out of a window, with the wrinkles between his eyes that always come there when he is thinking deeply. I wondered what was in his mind and in the mind of The Schoolmaster who was sitting beside him writing in a small, black book, and whether it referred to whatever was "up."

It seemed that the service would never end, for Mister Walters was improving his opportunity to take us from Genesis to Revelation; but at last the closing hymn was given out and the voices arose like a benediction, my father joining heartily, in his fine bass, because it was one of the psalms of his beloved Scotland.

"I to the hills will lift mine eyes,
From whence doth come mine aid."

There is always something simple and sincere in the singing of our people that makes a fellow feel a bit solemn, and, I doubt not, in the music as much true worship as in the big cathedrals with their organs and what-not of which my mother sometimes tells.

When the service was over I got out as soon as possible, mighty thankful to get a smell of the breeze again, and in a moment Hank came out with The Schoolmaster, who was mopping his forehead before putting on his "chimney-pot."

"Morning, Alan," he said, cutting off his words even more than usual. "Managed to sit it out?—The whole Cosmos, by jinks! and not in a nutshell either.—Well, morning!" and then, dropping his voice, "See you to-morrow night."

But before I had time to answer he was off, bustling about among the people, shaking a hand here, and taking off his hat there. Right next to the minister he is, in all these civilities.

As we always do, Hank and I trotted off together, and Hank invited me to dinner, to which I gave very ready assent, for his home is an "unco" cheerful spot, with plenty of sunshine and laughing, and the children buzzing about like bees, so that it is no wonder it takes store and mill and all to keep them going.

"Well, what's up, Hank?" I asked, before we had gone many paces. "What's all the mystery? What about to-morrow night?"

"Why," he replied, for my ear alone, "there's to be a meeting to-morrow night, and William Lyon Mackenzie's to be here."

"What!"—It was little wonder I exclaimed, so unexpected was this news.

"Yes, true as guns!" he said, and I knew how much the event meant to him, "hot-blooded young Radical" as my father calls him—even more than to me, more given, as I am, to mooning about over flowers, and trees, and the good things of life.

"Where is it to be?" was my next question.

"In the mill."

"The—mill?"

"Yes,—don't speak so loud. The Schoolmaster has arranged it all, and it's to be—sort o' secret. You see there'd be danger of Big Bill and some of 'em coming to it and breaking it up if it was in a known place like the school or meeting-house. They say he's broken loose again, and kicked up a fine old row at the tavern last night. If he knew there was to be a meeting with Mackenzie at it he'd be sure to come half-drunk, with the riff-raff from beyond the Village at his heels—that's his idea of fun. Then the fat would be in the fire!"

"Are you sure it won't leak out?"

"Not unless some fool is too long in the tongue. Only the Reformers have been told about it, and every mother's son of 'em was warned to keep his mouth shut."

"In our own old mill!" I exclaimed again. "If that doesn't beat the Dutch! Why, 'twas only the other day I was grumbling that nothing ever happens around here."

"There may be enough happening before long," he said quickly.—"We'll go down

there after dinner if you like. It'll be a good way to get away from the fellows and have a talk."

"They'll all be at the Deep Hole," I remarked.

He nodded, then pulled off his hat and rumbled his hair. "Yes. It's pretty hot."

Hot enough it surely was, yet not even the too ardent rays of the sun could drive away the new spice of interest that had come into the day, and as Hank and I set out early in the afternoon it seemed that the very path along the stream looked important, and that the big, clap-boarded mill, prosy enough on a week day with the mill-wheel creaking, had become a spot of romance.

But on the way we could not but gather the wild strawberries, at the part where the path led through the meadow, and so we arrived laden with them, which we ate as we lay on the big floor, chattering and listening to the rush of the dam-falls and the ripple of the water in the mill-race below us.

"What time is the meeting to be?" I asked, after we had discussed all its local possibilities.

"It begins at ten o'clock," he replied, "and the men are to straggle along, separately, some through the woods, and others by the path, and others along the creek so not to attract attention. It's pretty dark at ten, so there shouldn't be much difficulty."

"I'll meet you, then, at the flat rock," I said.

Hank was lying on his back, his hands behind his head, a bar of sunlight striking over his hair, making it shine like gold.

"Do you know," he said, staring up at the ceiling, "I shouldn't be surprised if this thing ends in bloodshed yet."

To which I laughed. "Have you been reading buccaneering stories lately, Hank?"

"No.—I'm serious, Alan."

"Does your father think so?—about the bloodshed, I mean."

"No, he pooh-poohs the idea, but The Schoolmaster does."

"Oh, he's a Radical," I remarked.

"Yes. There's lots of Radicals now, Alan. They say up York and Simcoe way's full of them."

"But one may be Radical in politics without being on for letting blood over it," I objected.

Hank sat up, drawing his knees up and looking at me hopelessly.

"I don't believe you grasp the situation. There's a lot of canny Scot in you, Alan," he said.

"Maybe," I assented, "and yet in most things I think I've my mother's Irish in me. But the Scotch way of trying to see—both sides,—why that I suppose I have."

To which he was a bit testy.

"Look out for fear you sit down between two stools," he said.

"I don't intend to sit down between two stools," I replied, "but I want to be sure of sitting on the right one. Now, my father is all the way Reformer, he's as 'agin' the present Government' as the next one, but he thinks political pressure will bring the needed reforms all right."

"Of course, after another hundred years or more," agreed Hank, flicking a strawberry stem at me to show that his sarcasm was not unkindly meant. "And in the meantime the roads and settlements are kept back, and there's no one gets a show at all unless he's got influence. I tell you Alan, it's the people who are making this country, not those few muckamucks who are sitting in high places and licking up all the cream there is. I tell you there's no justice nor won't be until they've been taught their lesson. Talk about Britons not being slaves! If things go on much longer the way they have been, every one of us will be wearing shackles, and feeling them too."

Hank was very much in earnest, but somehow I only wanted to laugh, and so I answered flippantly—"Whoop-hurroo! Mr. Stump-Speaker Hank —"

Whereupon he stopped me with his hand on my mouth and set upon me so that in fun we wrestled and rolled about over the floor, quite forgetting our Sunday clothes.

When at last we stopped, breathless, we thought of them quickly enough, for we were white with flour and dust.

"Holy smoke!" exclaimed Hank, looking down at himself, and then we set to at brushing ourselves and each other until our homespuns emerged again.

After that we sat down, and Hank once more became very much in earnest.

"Well you may laugh at me, Alan," he said, staring out of the door, with the sunshine again on his hair, so that with the light of it and the flush on his cheeks he looked like one of his own small brothers, and as little like a fierce rebel as one can well imagine. "But, Alan, the whole thing's come very close to me somehow."

"I know," I said, "You're with The Schoolmaster so much."

He nodded.

"And I guess it's in me, too. I'd like some day to be—to be—" he paused a bit shamefacedly.

"Oh, I know," I said, "You'd like to be a Dr. John Rolph, or a Marshall Spring Bidwell or somebody, speaking in the Assembly, and —"

His eyes shone. "Giving them the devil!" he finished. "Knocking the very gizzard out of 'em when they try the bulldozing business! Alan I'd rather be an orator standing out for the people, than anything in this world."

"Go ahead, old chap," I said, "you're only twenty."

With that he turned to me. "Now, what do you want to be, Alan?"

"What do I want to be?" I repeated.

"I want to be a farmer, Hank. There's no man in this country who is doing more for it than the farmers, the men who are cutting away the forest and making homes for the people—the people you spoke about a minute ago. But I want to be more than just tiller of the soil. I want to be an all-round man besides—if I can manage it."

What I did not say was that in all this dream Barry was mingling, Barry with her smile, Barry with her sweet, soft voice, Barry with her little independent ways and all the frank sincerity of her.—Barry, my Oogemahgoogay, my "wild rose woman."

Hank smiled.

"A farmer, eh? Well, that's all right." Then, coming back to his foolery, "you'll make the country, I'll keep the wolves from fleecing you while you're doing it.—Shake, old duffer."

And so we shook hands on it.

But he could not keep away from the idea that had taken possession of him, insisting on it that dark days are before us in this province.

"It's always been the way," he argued, and as he talked it was not hard for me to see the orator that he might be.

"Every onward movement has been stamped with a red seal, Alan, and it's been the red seal of blood."

Nothing short of that, he thought, could awaken those who are now sitting in the high places—"Louis and Marie Antoinette," he described them, "making merry at Versailles while the people cry for bread."

—Hank, since his companionship with The Schoolmaster, has become enlightened about many things.

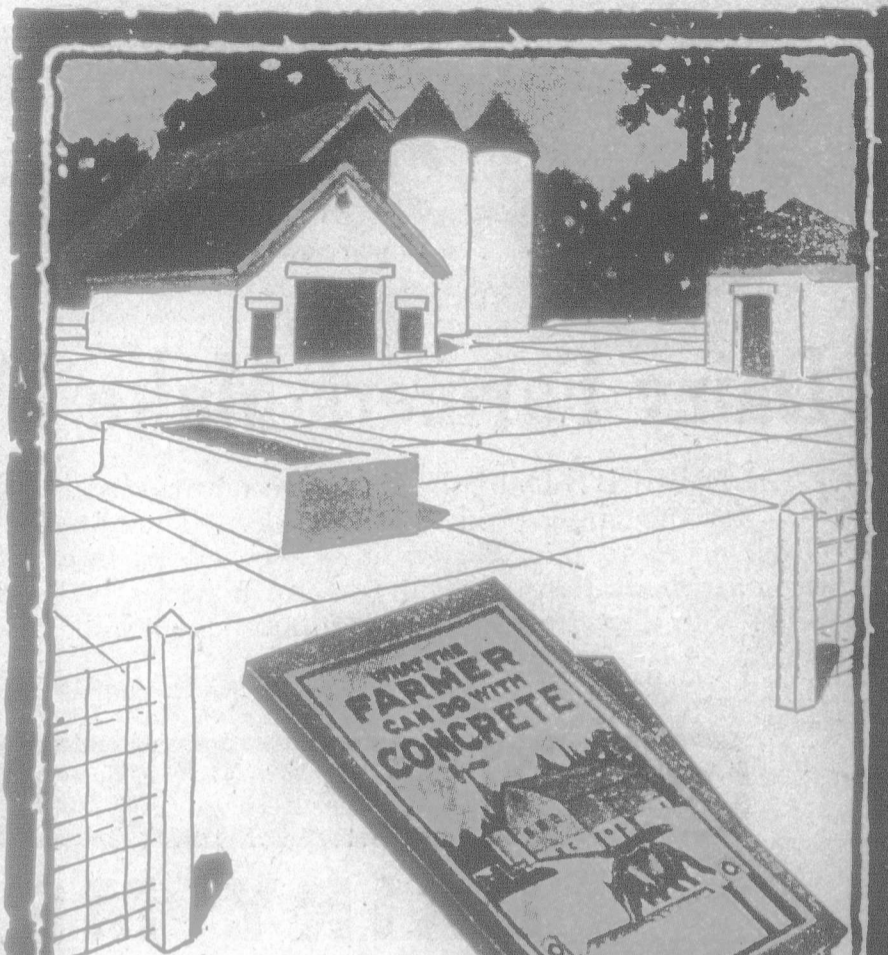
It was because of all this that at a quarter of ten last night I went to meet him at the flat rock, finding him there before me, sitting like a black stump in the shadow.

He sprang up instantly to meet me and we pushed through the bushes to the mill. It appeared all in darkness, for, as Hank explained, sacking had been hung over the windows. He himself had made them safe enough, for he had been there for an hour or more putting things in readiness. He had arranged boards on blocks to form seats on the big floor; also he had brought out the desk and stool and a couple of chairs from the office, placing them at the farther end.

Taking a look in we saw, by the light of a single lantern on the desk, a few men already gathered, sitting about talking, the shadows of them and of every outstanding thing in the place making long, black streaks on the floor. Mackenzie had not yet arrived, and so we went out again, and for perhaps half an hour sat near among the cedar bushes, watching other black shadows slip out from the woods and disappear into the mill, and identifying the men, if the shadows defied us, by their voices as they exchanged "time o' day" inside. Among the arrivals were my father and Hank's.

Mackenzie, Hank surmised, was perhaps resting a bit. Riding alone he had arrived at The Schoolmaster's at eight o'clock or later, having ridden for hours without resting, and having eaten nothing since noon. He is a real patriot, Hank says, caring nothing at all for his own rest or comfort, and burning up with zeal for the cause.

At last a rather highly pitched voice that does not belong to these parts, could



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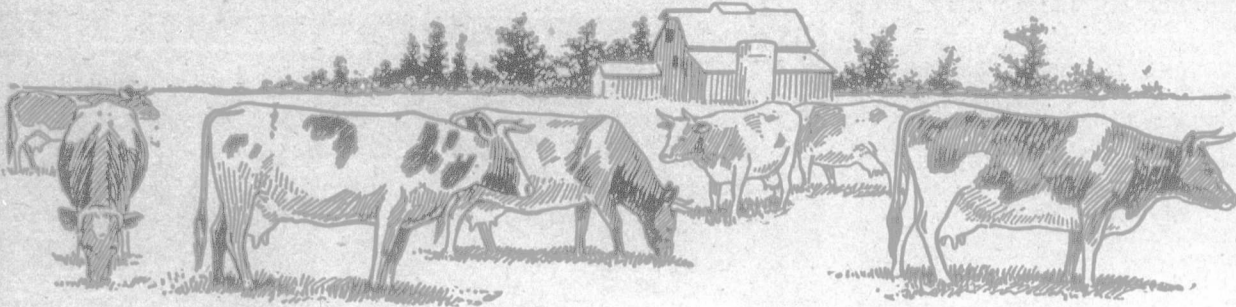


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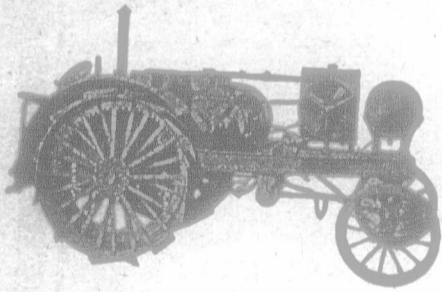
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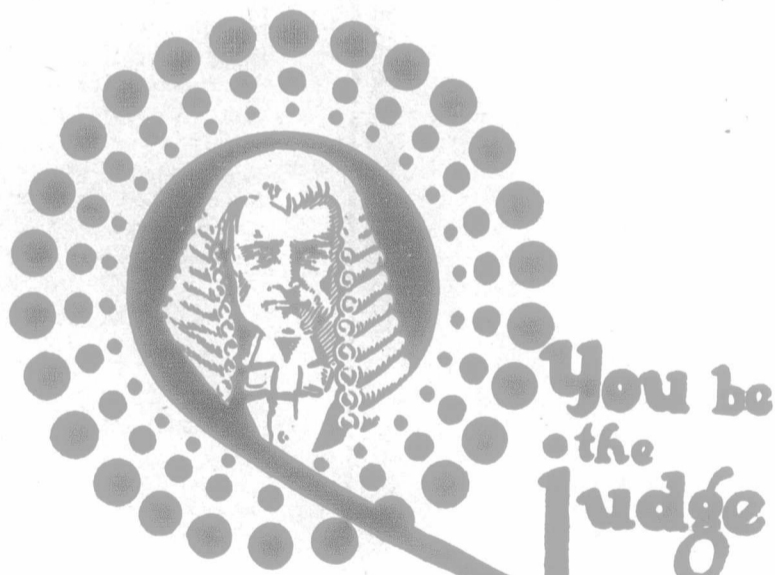
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be heard behind the cedar bushes, and steps sounded on the pebbly path. The words were undistinguishable, but we both sprang to our feet.

A moment later appeared the tall swinging form of The Schoolmaster, a shorter shadow, quite short indeed, at his side,—and so it was in the train of William Lyon Mackenzie and The Master that we entered the mill.

Instantly the buzz of talk stopped and all eyes were fixed on the little figure that advanced with springing step between the two rows of seats, The Schoolmaster following. Straight forward to the desk the two went, then turned facing the crowd so that the light of the lantern fell directly upon them.

Mackenzie looked quickly over the men, as though estimating the numbers, and we realized him then, a little fiery personality, with tense arresting face and piercing blue eyes—contrast enough to The Schoolmaster who stood beside him, tall and thin and pale, his long features more clear-cut still in the sharp light and shadow, with a wisp of his thick black hair hanging down to his eyes.

For a few moments Mackenzie talked incessantly to The Schoolmaster and one or two others who went up to be introduced, turning from side to side, as he addressed one and another, and taking from his pocket papers which he placed on the table.

Presently he sat down and it was time to begin. The Schoolmaster stood up and rapped on the table with his knuckles, so that the buzz of talk ceased and the men slid into the benches, Hank and I swinging ourselves up on the top of a box at the back.

After a few words of preface The Schoolmaster sat down again, and Mackenzie stood up, his high, thin voice cutting over the heads of the men, so that we could hear it quite distinctly. He spoke very tensely and eagerly, moving his hands in nervous gesture, and I would that I could here write down all the things that he said.

Much of it was familiar to me because of my father's talk, and The Schoolmaster's, and from companionship with Hank, who is eternally with The Schoolmaster and has all his arguments. Also I have read much in "The Freeman," which comes to us by stage as regularly as the roads will permit, and in Mackenzie's "Constitution," of which stray copies find their way to us, but which my father does not subscribe to because he thinks it over-scurrilous.

To some of the men, however, much of the story was like one first told, for it was the first time they had heard clearly and in sequence the things which they had so long caught but in snatches, and the intentness of their faces and rigidity of their bodies as they listened showed the keenness of the interest with which they followed.

But it was when he spoke of the land grievances, which touch us most closely here in the bush, that the tension gave way like the bursting of a dam, and bodies swayed and fists were clenched and low mutterings came which broke forth here and there in groans and sharp outcries against the councils which hold the reins of government of this province in their hands.

"Down with the Legislative Council!" roared a dozen voices, and then Red Jock sprang to his feet waving his arms and shouting.

"Pit them oot!—Get rid o' the hale squirm'n' nest o' the Family Compact!"

Even Hank sprang off the box, and I wondered what he was going to do, for his eyes were shining and his cheeks glowing, and his hair all ruffled up with the running of his fingers through it, as he always does when he is excited.

But Mackenzie himself held up his hand to beseech order and the turmoil stopped, and Hank got back on to his box again.

Yet, for all the evils, Mackenzie spoke not once of the "fight" to which Hank seems to look forward. Pressure to secure a Parliament really responsible to the people was the strongest remedy he suggested.

When he had finished, touching last upon the disaffection now seething in the Lower Province and lauding the "Patriots" who are there standing forth for the people, The Schoolmaster and others spoke briefly, but I did not hear a word they said, for I was looking at the fiery restless little man, who was now sitting wiping the perspiration from his broad forehead, and I was recollecting

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the many things we have heard of him. Almost I could see the wrecking of his printing press, about ten years ago, by nine young bloods of the town, who were afterwards treated as heroes in the place and their fine of \$600 collected by one Colonel FitzGibbon, who, I presume, is the same "Tory Colonel" who is now drilling young men in rifle practice.

Almost I could see, too, the scene of five years ago, when, at the election following Mackenzie's first expulsion from Parliament, he was brought into the town in triumphant defiance. My father happened to be in Toronto at the time, and saw the long procession of sleighs, all placarded with inscriptions proclaiming "The People's Friend!" that brought him in, first to the polling-place, the Red Lion tavern, and then down Yonge Street to the Parliament Buildings, with people cheering along the way and the little hero of the hour very proud and happy.

Since then he has been again and again expelled on the charge of libel, but has been again and again upheld, being made Alderman in York, and then, when the name of the place was changed, first Mayor of Toronto: Two years ago he was again nominated to Parliament, but was defeated, a man named Thomson taking his place.

When all was over and we went out into the darkness, "Well", I said, "blood isn't spattering around on the programme yet, Hank".

To which the dear old bulldog replied, "But the year's not out yet."

On the way home I spoke to my father about Hank's and The Schoolmaster's notion.

"It'll hardly come to that," he said. "It would be a fool business. The Government's got the Militia, and the numbers—the towns are pretty much Tory—and they've got the power to put the cramps on harder than ever, and would likely do it if a rebellion were attempted.—But if it could be done, successfully, the whole outfit damn well deserves it—Aye."

Mackenzie they say left at daybreak the next morning, having important meetings to attend immediately.

But now it is nigh twelve o'clock and I must go to bed.

Poor old Hank! wonder if he's sound asleep by this time and dreaming that he's "giving them the devil."

Continued on the night of June 14th. Before I go to bed I think I shall spend an hour in trying to write down the things I can remember of Mackenzie's speech.

He told first of the "persecution" of Robert Gourlay eighteen years ago, for daring to speak against the Government. But the words of Gourlay are as true to-day, he said, as when he uttered them, namely that "Corruption has reached such a height in this province that it is thought no other part of the British Empire witnesses the like, and it is vain to look for improvement until a radical change is effected."

Still juries are packed, on occasion, as at the trial of Gourlay. Still men are intimidated to vote in a certain way, as we know of last year in the election which came on after Sir Francis Head had dissolved the Parliament, at which time gangs of rowdies were sent to the polls, in some places, to bully the voters. And still bribery is resorted to to a degree that is shameful, both lands and other privileges being given to hold to the Government those that can be bought that way.

Particularly baneful are the land grievances, so much country having been given out in Clergy Reserves, and permitted to the Canada Land Company and others for speculation, and granted to friends of the Family Compact, that there is no chance for this country to be settled as it should to make it a home for civilized people. Farms are far apart, and so it is not possible to keep up the roads, which in winter become usually for weeks impassable, so that mails are stopped and there is very serious inconvenience and suffering in case supplies run out or a doctor is needed. All this we here know only too well, although we are better off in some respects than some of the settlements, for we have a schoolhouse and a church. At the same time, it must be said, the schoolhouse is so far from most of the homes that the small children cannot go at all, and the older ones only irregularly, and but for a short time in the summer. I myself would have

suffered much from this had it not been for the persistence of father and mother who, since my boyhood, have tried to teach me all the things that they themselves know. In many of the homes, however, the older folk are themselves uneducated, and own no books, so that, be they never so minded, they can in no wise teach their children, who are growing up in ignorance.

Of the burdensome taxation, too, Mackenzie spoke much, pointing out needless extravagances of the Government, who care for nobody's fortunes so long as they amass wealth for themselves.

So far, he said the methods taken to protest against all these things have been of little use. True, we have a House of Assembly, but, since the Bills passed there are thrown out as soon as they reach the Legislative Council, if the Powers see fit, it has never yet been able, even when it would have done so, to make itself an instrument of the people to ensure them good government. During the last eight years, no fewer than three hundred and twenty-five Bills have been thus disposed of.

Nor do petitions fare better. In Sir John Colborne's time, when a deputation of nine hundred people called at Government House with a petition, Sir John dismissed the whole matter by saying, "Gentlemen, I have received the petition of the inhabitants." Now there is no better welcome. Sir Francis Bond Head—this man who was hailed as 'a tried Reformer'—does not even appear with such courtesy, but continually flouts, even insults the deputations that come to him. And last year when the extreme step of stopping supplies was resorted to by the House of Assembly, in order to force its will, he nullified the whole proceeding and defied the will of the people by refusing to sign his assent.

That was in April. In May the "British Constitutional Society" was formed in Toronto to oppose all efforts of the people for a Government more responsible to them, and shortly afterwards a certain Tory Colonel there began to train a number of young men in rifle practice. That looked as though a screw were being made ready to use on the people—if necessary.

Then had come the election, in which Bidwell, Perry, Lount and Mackenzie himself had been defeated, only Dr. John Rolph being left to look after the interests of the people and oppose the Family Compact. It had then become clear that thenceforth it would be almost impossible for a Reformer to obtain justice, so that it was no wonder that many of them had moved away to the United States.

In that election the towns were placarded with inscriptions, "Down with Republicanism!" "Down with Democracy!"—But it is a poor Government that howls "Down with Democracy!" in a country filled with people who work for their bread. That whole election had been a disgrace, with bribery and corruption worse than ever before seen in the province. The Tories had gone in on the "Loyalty" cry, with the Reformers branded everywhere as disloyal and ready to help in an invasion which was threatened from the United States. That invasion had never even been thought of. It was nothing but a story trumped up for the election.

After that he spoke briefly but very bitterly of himself and his expulsions from Parliament because he had dared to be the people's friend and expose the things that were being done; and towards the last he became very personal, lashing in especial the Lieutenant-Governor, the Chief Justice and the Attorney-General, and sparing not even the Archdeacon of the Church, whom he considers, next to the Chief Justice, the evil genius of this province, so far as its hindrance in getting a Responsible Government is concerned.—all of which made me marvel that public men could so express themselves, even in a meeting as secret as this.

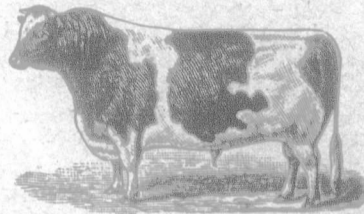
All this I have set down in my own way, and not at all as spoken by Mackenzie. Hank thinks he was quite wonderful, but for my own part I may say that I have been swayed more, often and often, by The Schoolmaster, when he has been carried away by eloquence, in his own house.—And yet Mackenzie is not lacking in a sort of eloquence, and he has much knowledge of facts and conditions. (To be continued).

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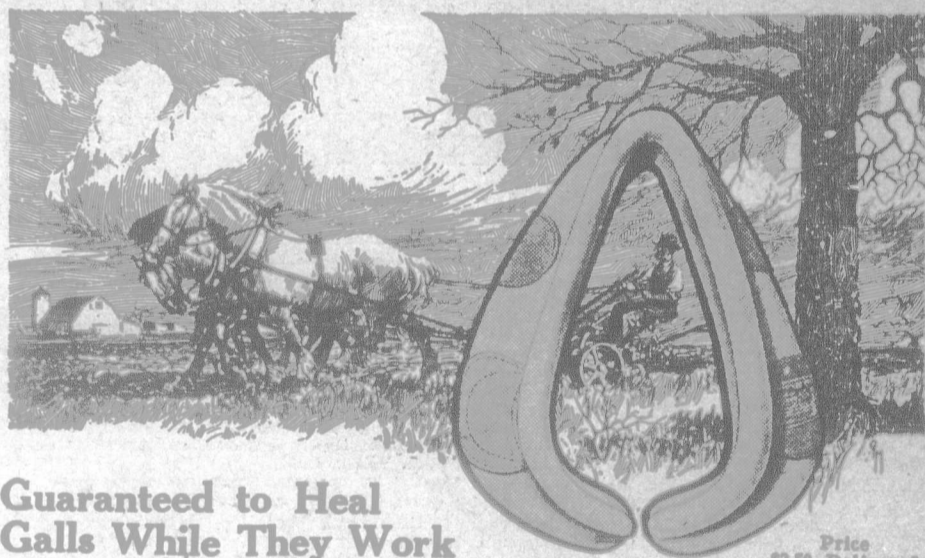
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Tales of the Trails
BY RALF RANGER.
THE HERMIT OF MOOSE RIVER.

We were ascending the Moose River in our twenty-foot birch-bark canoe—O-mee-chee, my Ojibwa guide, and myself. We had finished a hard day's paddle and were scanning the banks for a good spot in which to pitch our camp for the night.

This trip into the northland had its origin in my desire to acquire "local color" for a story of the northern woods upon which I was engaged. It fulfilled its object, enabling me to catch something of the spirit of the wilds, but it did far more than that—it saved to the world a work of a unique quality, of a fineness, excelling anything that I, or perhaps any other man, will ever write. But I run ahead of my theme.

After passing for some half mile between high rocky banks we came to a stretch of sandy shore, sloping gently up from the river, a little opening of level land flanked by cedars and poplars.

"Good place there!" I exclaimed, as I turned the canoe towards the bank.

"Uh-huh" said O-mee-chee, "Good".

We beached the canoe, soon had our tent up and were frying bacon and potatoes over our fire of drift-wood.

After supper, as I sat by the fire, smoking, and O-mee-chee crouched on the other side of it, looking with fixed gaze at the glowing embers, silent and immobile as a statue, I heard a crackling of twigs behind me. Following O-mee-chee's quick glance I turned to see a man approaching.

"Gd' evenin', sir" he said, stepping into the circle of the firelight, "The master says his compliments to you, sir, and he would be glad if you would come up and see him".

I was frankly surprised. It was strange enough to have a visitor in this wild country, many miles away from the nearest settlement, but to receive an invitation to pay an evening call was even more astounding.

Seeing the astonishment on my face, and before I had time to reply, our visitor continued "Hardly expected to find anyone here, eh sir? I don't wonder at it, for 'tis a bit out of the way here, and except for the master and me there's not a soul within thirty mile. But won't you come along, sir, for Dr. Thaxter will be most uncommon glad to see you".

I accompanied the man who led the way among the cedars and along a little path which brought us to a cottage, hidden by a fringe of trees from the river.

As we ascended the steps on to the verandah an old man, big and broad-shouldered, with a massive head and a flowing white beard, rose stiffly from a chair. He held out his hand in greeting "Welcome! I am glad you have come. I feared perhaps, you might think my invitation too strange a one to accept. I would have come down to you myself had my strength been sufficient, but I am failing so rapidly that the verandah is now the limit of my peripatations. Be seated, please—Charles, bring the cigars."

As we sat there, in the warm hush of this late summer night, he told me of his life and of his work. As a young man he had graduated from Harvard, taking his major in biology and his minor in psychology, and subsequently studying these subjects in several European universities. He had worked with Kowalevsky at the time this famous biologist was investigating the Tunicates, and with Forel and Favre when they were experimenting on the senses of insects. Later he had held the chair of biology in Westover University, and, had devoted all his time which was not taken up with teaching to research on the animal mind. He had never married—had never had time—his work was his sole interest. While he was engaged in his laboratory he became more and more convinced that the truth concerning the psychology of animals would never be attained by such studies, by experimenting with animals under more or less unnatural conditions, but that it must be sought in the native haunts of the animals. So he resigned from the university, and coming up here had built this cottage. Here he had dwelt for thirty years, alone except for Charles, who was a mere lad when first he came to him. And his idea had been correct, this was the place for researches on the animal mind; his work had made great progress. He had books filled with notes, notes of the high-

est value, and he had hoped soon to be able to bring out his monograph on animal psychology. But there were so many points upon which further observation was needed, the field was so vast, so intricate, that he kept postponing publication, until now, now—he would have to postpone it for ever. His working days were done, he knew that—the slight touch of fever of three months ago had left him with dimmed eyesight, with shaking limbs. So all he had was his series of notes. What to do with these had been his constant problem for these last months. He had no friend to whom he could send them, his friends had all passed along "the long, long trail" from which there is no returning. If he sent them to some of the workers in laboratory methods they would probably scorn them. Then he felt that in their present form they were of little use. Now he was going to ask a great favor. Would I, would I for the sake of an old man who had but little left to ask of this world, go through his notes with him and put them in some order for publication?

I gladly consented, and said "I will do more than that. You shall yet write your book. After we have gone through the notes together you shall dictate your book to me, and I will see that it is published in a form suitable to commerate your long years of endeavor".

He thanked me with tears in his voice, and promising to return and begin work early in the morning, I left him.

So it was that my camp, pitched but for the night, remained in that spot for many days—days during which, as I wrote from his dictation, I marvelled at the greatness of the man, at his wonderful grasp of fundamental conceptions, at the keenness of his thoughts as they cleft out new channels in hitherto untrodden realms. And the book which resulted was published, was received with enthusiasm by the scientific world, and, as I heard later from Charles, a copy of it was tightly clasped to the breast of the old man as he lay, peaceful and smiling, in death.

But it is not with that work that we are here concerned—it is with the journal which he kept so carefully throughout his long years in the northern woods. In this journal are so many beautiful Ojibwa legends and little stories that I feel it my duty to lay at least a few of these before the public.

Extracts From the Journal of Robert Thaxter.

Oct. 16th 1812. Today as I stood with Wahmuk, the old Ojibwa, on the top of a high hill and looked out over a stretch of hardwood forest, now brilliant with a blaze of red and copper and gold, I remarked on the beauty of the autumn tints.

"You call them autumn tints" said Wahmuk, "We call it 'The Promise.'"

"Why 'The Promise' Wahmuk? I asked.

"The name is from the days of long ago, when Nanabojo—the Great Master—dwelt on earth. One day in the fall he saw that all men and beasts were sad at the approach of winter. He heard one say 'The flowers are dead, Pee-chee, the Robin, has flown away, soon the leaves fall, and the earth will be dead'. 'Nay' He said 'Not dead, she will but sleep, and before the leaves fall I will send you a sign that there shall come again the days of spring—the day of re-awakening'. And next morning when they looked out from their lodges, behold the trees were no longer green, but stood clothed in red and gold. This was the sign of Nanabojo—'The Promise.'"

Dec. 30th, 1882. The ground is now covered deep with soft snow, and the spruces are fairy-like spires of white. Today Wahmuk brought me a pair of snow-shoes which he had made. He showed me how to adjust them, and taught me the peculiar swinging gait which is the best means of travel on them. While we were thus exercising we saw the trail of a Varying Hare. Wahmuk pointed at it and said "There was the first user of snow-shoes. See the tracks of the large, wide-spread hind feet which take Wabasso—the Rabbit—safely over the snow. It was Wabasso that taught the Indian how to travel in the winter".

May 6th, 1883. Today Wahmuk took me in his canoe up to Masinaige Lake. He says the name of the lake is an Ojibwa word and means "to make marks on," and refers to the pictures on the granite cliffs which rise sheer from

the water. He showed me the pictures, which I reproduce here. They were done in some red, paint-like substance, the exact nature of which I cannot be sure. Wahmuk translated the pictures for me as follows:—



The Marks on the Cliff.

"In the young moon, at the fall of the leaf—see here the moon, there the falling maple leaf—the Mohawk came into this country, the country of my people, to hunt. They shot Moose—see here the Moose with an arrow in its heart. This led to a battle between the Ojibwa and the intruders—see here the crossed arrows showing fight. In this battle sixty-five Mohawks were killed—here is a man killed by an arrow, and the strokes around him tell the number of the enemy killed. The Ojibwa who won this victory were of the clan of the Wolf—see here their sign, the howling Wolf."

July 8th, 1883. Walking through the woods today with Wahmuk we came across a fine clump of Indian Pipes. As I stopped to look at it Wahmuk said "Pipe of Peace." I asked why he called it that.

"In the long-ago" said he "Two tribes, the Maramegs and the Ojibwa were bitter enemies. Both wanted a certain good hunting-ground, and this led to such constant fighting that both tribes were losing many of their hunters in battle. Nanabojo—the Great Master—was still among men. He had not yet gone to the Happy Hunting Ground where now He dwells. One day as a battle was on between these two tribes Nanabojo appeared, held up His hands, and spoke in loud tones "Cease, cease fighting! There is food enough in this place for all of you. You are Muktum—Brothers—and shall be friends. You shall smoke the pipe of peace." Then spoke a chief of one of the tribes "We have here bows and arrows and spears, but no pipes," and Nanabojo said "Behold, I send you pipes," and out of the ground sprang this little plant, pale and white as the ghosts of those who had fallen in this long feud. "Now" said Nanabojo, "When you see this plant remember it is an omen that you are friends. And the two tribes were henceforth friends, they have united and are now one tribe—the Ojibwa."

Sept. 22nd, 1883. This evening as I sat by my fire Wahmuk told me the following story, which I have set down as nearly as possible in his own words. "And this is the story of Omaynah and his sweetheart Kahalili, the beautiful. In the long ago there dwelt in this land the Ojibwa and the Crees. On this side of the river the Ojibwa—on that the Crees. And for a long time there had been peace between them.

The young warrior Omaynah, son of the chief of the Ojibwa, while hunting came upon the fair Kahalili, a maiden of the Crees, gathering blueberries in the great swamp yonder. And from the moment he saw her he loved her. To his admiring gaze she raised her eyes but once—one shy glance. No word was spoken and Omaynah passed on. But the one short glance had been enough—Kahalili saw in her dreams that night a warrior, young, straight and slender, and of the Ojibwa.

Next day Kahalili sought blueberries—and in the same spot she gathered them yesterday. And Omaynah sought game—in the same swamp he sought it yesterday. The shy glance was a longer one this time and Omaynah returned empty-handed, for he had lain beneath a hemlock and looked up at the clouds through its dark branches—and dreamed.

And on the third day, though the storm clouds gathered, the maiden sought blueberries and the warrior sought game—in the same place.

As Omaynah approached Kahalili there came a flash from the skies and a mighty crash of thunder. Kahalili gave one startled look upward, then covering her face with her hands she stood trembling. Then spake Omaynah as he threw his arm across her shoulder "Fear not, oh maiden! The spirit of the clouds will not smite one so fair." And Kahalili looked into his face with a smile.

And Omaynah led her to the river bank and beneath a ledge of rock they sat while the rain came down like water over a rapid.

By the time the storm had passed they had unfolded to each other their names

and the story of their short lives, and at parting a meeting for the morrow had been urged by Omaynah and shyly assented to by Kahalili.

So day after day they met and their love grew. Omaynah would sing to Kahalili this song, which is still known among us as the song of Omaynah:—

'Oh most beauteous maiden, Oh fairest of fair,
Gentle thy glance as the glance of a fawn,
Gleam of the raven's wing shines in thy hair,
Sweet is thy smile as the break of the dawn.

Lift up thine eyes to me,
Yield thy fair lips to me,
Oh! trust thy heart to me
Light of my life!

Soft is thy tread as the foot-fall of Pee-shoo,*
Graceful thy form as the slender young pine.
Sweet is thy voice as the murmuring of waters
As in the sunlight they ripple and shine

Lift up thine eyes to me,
Yield thy fair lips to me,

Oh! trust thy heart to me
Light of my life!

Presently news of their meetings came to the ears of Kahalili's father, and he forbade her all communication with the Ojibwa warrior. Was she not a Cree? Was she not to be the bride of Nimpah, son of the chief? So he confined her to her lodge.

Kahalili, however, managed to send a message to Omaynah, and the young warrior went to his father the chief and said:—

"Father, I love the fair Kahalili of the Cree, but her father holds her a prisoner as the bride of Nimpah."

Then said his father "When an Ojibwa loves he does not let slight things stand between him and his beloved."

Omaynah, thus having his father's approval, chose a number of warriors and that night they crossed the river by moonlight, crept up upon the Cree village, struck down the sentries and surrounded Kahalili's lodge. Omaynah crying "Kahalili, Kahalili, fly with me!" entered the lodge.

Swiftly they fled towards the river, but ere they gained their canoes the Crees were upon them. Arrows flew thick and fast in the moonlight, here and there Ojibwa and Cree fought desperately hand to hand with war-club and knife. Omaynah, turning from striking down a Cree, saw an arrow discharged at Kahalili. Quick as a flash he stepped in front of her and received the arrow in his heart. He was the last of the Ojibwa to fall, and Kahalili's father cried "Now seize her!" But Kahalili, swift as a doe, fled to yon high rock, and crying "Oh, Omaynah, my beloved, I come!" sprang into the swirling white waters of the rapids.

And even to this day, those who pass the rapids at the full of the moon hear the dying cry of Kahalili "Omaynah, I come!"

March 23rd, 1884. This morning as I sat in front of the cottage listening to the song of a Song Sparrow, the first of the season, Wahmuk came down the trail.

"Ah, you hear him sing" he exclaimed. "You listen to Too-ling-oo-lay—the Waker of the Leaves."

"A beautiful song he has, Wahmuk, and 'tis a beautiful name you have for him—the Waker of the Leaves."

"Yes, the Ojibwa loves Too-ling-oo-lay. We have a song of him. I sing it you:—

The earth is shedding her robe of white,
Now softly blows the balmy breeze.
Little Too-ling-oo-lay has come
To wake the leaves upon the trees.

Free from the grip of the frost-king
The river dance in foam and spray.
The flowers spring forth from out the earth
At the call of blithe Too-ling-oo-lay.

Too-ling-oo-lay. I give you welcome,
And with joy my heart receives
Each note of thy sweet melody,
Oh! Waker of the Leaves!"

* Foot-note:—Pee-shoo—The Lynx, quietest-footed of all animals..

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THOS. B. BROADFOOT, FERGUS, ONT.

THE HAWTHORNE SHORTHORNS AND LEICESTERS

Six extra good bulls to offer, and could spare a few females. Royal Choice =79864= at the head. Clydesdale fillies and Leicester sheep. Priced to sell.

ALLAN B. MANN, Peterboro, R. R. 4.
"The Hawthornes."

Maple Leaf Farm

Shorthorns—Missie, Mysie
Miss Ramsden and Lavinia
cows in calf for sale. Shropshires—Usual offering by our Imp. ram. JOHN BAKER, R. No. 1; Hampton, Ont. Bell phone. Solina, C. N. R.; Bowmanville, G. T. R. and C. P. R.

FOR DUAL-PURPOSE SHORTHORNS

Also DORSET-HORNED SHEEP. I am offering 6 young bulls and 20 ewe lambs. Apply VALMER BARTLETT, R.R. 4, Canfield, Ont.

How to Prepare Furs for the Market.

Wrong methods of skinning, stretching and drying pelts causes the loss of thousands of dollars to trappers every year. The right methods to follow are just as easy if you know them—and here they are:

Skimming methods are of two kinds, "casing" and "open". Casing means peeling the skin off whole. Open means ripping the skin down the belly.

Animals which should be cased are the following: Mink, martin, weasel, opossum, fox, fisher, skunk, civet, muskrat, wild cat, otter, lynx, wolf and wolverine. Open skinning should be used with badger, beaver, bear and cougar.

The following skins, before they become too dry, should be turned fur side out for shipping: Fox, lynx, fisher, wolf, marten, wolverine and wild cat. Leave the others, which are cased, pelt side out.

To case a skin, cut from the root of the tail down the inside of each hind leg to the foot. Then pull the skin carefully over the body and head. The tail should be skinned and the bone removed, except for muskrat and opossum. These two can be cut off as they are worthless. Skinning is made easier by suspending the carcass from something, doing this by means of a strong cord tied around the hind legs. Draw the skin from the front legs. Cut off the ears—downward toward the head. Cut the skin loose about the nose and eyes.

In using the open method, cut from point of jaw to vent, also down back hind legs and inside front legs. Lynx, mountain lion, bear—which are valuable for rugs or mounting—should be skinned on the legs clear to the toes, leaving the claws attached. Smaller animals, valuable only as furs, may have the legs cut off.

Be sure to clean every bit of flesh and fat from the skins, using extreme care to avoid cutting.

Steel stretchers, which can be had in just the right shape for different skins, give the best results. If you do not use these, and do not know from experience the shape and size to make board stretchers, by all means write to one of the big fur houses for information. Improper stretching may make skins almost valueless.

When the skins are on the stretchers put them in a cool, dry place—never in the sun or near the fire. Dry them just enough to prevent shrinking and wrinkling. If you find that a skin has become too dry to turn, soften a little with a damp cloth. But be sure to let the dampened spots dry out before shipping.

Do not use patented preparations for curing—just the natural drying. Write to a fur house for information. They are interested in getting furs in perfect condition and will be glad to tell you how.

Questions and Answers.

- 1st—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.
- 2nd—Questions should be clearly stated and plainly written on one side of the paper only, and must be accompanied by the full name and address of the writer.
- 3rd—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.
- 4th—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Sale Under Execution.
A neighbor owns a farm. He gets into debt. Execution is issued and property (farm) is advertised for sale. He makes an assignment, but his wife who is also a party to some of the indebtedness by reason of having signed some of the notes jointly with him, claims creditors have no right to sell property as she has refused to part with her dower or accept any settlement and did not consent to assignment.

1. Can the creditors sell the property and give title under the circumstances?
2. Would I be safe in bidding for the property?
3. Can his wife be forced to give up possession?

Quebec. N. R. G.
Ans.—1, 2 and 3. We think that all three questions may probably be correctly answered in the affirmative; but there may have been a marriage contract between debtor and his wife that would materially alter her position, and it is possible that there may be other undisclosed facts that would have an important bearing on it. We therefore suggest that you see a local lawyer about the matter personally.

LARKIN FARMS Queenston, Ontario

ABERDEEN ANGUS and JERSEY CATTLE
SHROPSHIRE and SOUTHDOWN SHEEP

Correspondence and Inspection Invited
(Please mention "Farmer's Advocate")

Brookdale Herefords

A few choice bulls of Bonnie Ingleside 7th, Dock Publisher & Beau Albany, breeding from seven to eight months of age. No females to spare at present. W. READHEAD, Milton.

Imported Shorthorns

SIRES IN SERVICE:

Imp. Collynie Ringleader (Bred by Wm. Duthie) Imp. Clipper Prince (Bred by Geo. Campbell) Imp. Orange Lord (Bred by Geo. Anderson)

We are offering a large selection in imported females with calves at foot or in calf. A few home-bred females, 19 imported bulls and 8 home-bred bulls, all of serviceable age. If interested, write us, or come and see the herd.

J. A. & H. M. PETTIT - Freeman, Ontario
Burlington Jct., G.T.R., half mile from farm. Phone Burlington.

NICHOLSON'S SHORTHORNS

We have about a dozen young bulls (ages 8 months and upwards), sired by our herd headers. Best Boy =85552= and Browndale winner =106217=. Write or come and see. R. and S. Nicholson, Parkhill, Ontario.

WILLOW BANK STOCK FARM

SHORTHORN CATTLE and LEICESTER SHEEP. HERD ESTABLISHED 1855—FLOCK 1848. The great show and breeding bull, Browndale =80112=, by Avondale, heads the herd. Extra choice bulls and heifers to offer. Also a particularly good lot of rams and ewes all ages. Imported and home bred. JAMES DOUGLAS, CALEDONIA, ONTARIO.

Dual-Purpose Shorthorns—Herd headed by Bruntfoot Champion =106945= and his sire's dam was champion mature cow of Canada for three years. cow with calf at foot for sale. They are of same family as Buttercup =111906=, which holds the R.O.P. record in 3-year-old class. GEO. W. CARTER, Iderton, Ontario

SPRUCE GLEN FARM

Herd headed by Nonpareil Ramsden =101081= and Royal Blood =77521=. At present we have nothing to sell, but we have some very good ones coming on.

JAMES McPHERSON & SON DUNDALK, ONTARIO

GLENGOW SHORTHORNS

We have a choice offering in young bulls, fit for service. They are all of pure Scotch breeding and are thick, mellow fellows, bred in the purple.

WM. SMITH, COLUMBUS, ONT. Myrtle, C.P.R.; Brooklin, G.T.R.; Oshawa, C.N.R.

Shorthorns

Herd headed by Pride of Escana, a great son of Right Sort. Several bulls and a few females with calves at foot for sale. Herd of over seventy head.

A. G. FARROW (between Toronto and Hamilton) OAKVILLE, ONT.

SHORTHORNS and CLYDESDALES

Herd still headed by Proud Victor =102587=. For Sale—One red, 20-months old, and eight 10-months-old choice reds and roans. Also females of all ages.

J. B. CALDER GLANFORD, STA. R. R. 3

Shorthorns Landed Home—My last importation of 60 head landed at my farm on June the 20th, and includes representatives of the most popular families of the breed. There are 12 yearling bulls, 7 cows with calves at foot, 24 heifers in calf, of such noted strains as Princess Royal, Golden drop, Broadhooks, Augusta, Miss Ramsden, Whimble, etc. Make your selection early.

GEO. ISAAC. (All railroads, Bell Phone.) Cobourg, Ont

SPRING VALLEY SHORTHORNS

We sell or exchange for females. Nonpareil Ramsden =83422=, we have used him five years. He is an extra good sire. We also have for sale Village Ramsden =122762=, winner of 2nd at London and 3rd at Winter Fair. Will price a few females.

KYLE BROS., DRUMBO. (Phone and Telegraph via Ayr.)

Dual-Purpose Shorthorn Bull—Sired by Royal Duke 2nd =102332. Dam is Lavinia Duchess =64347. He is 12 months old, and a deep red, well-proportioned fellow. Also a fine, square, deep roan bull, sired by Britannia Count =99437, whose dam is Lythmore Ruby =99344. He is 2 years old. For further information and price, write to

FRED NICHOLAS, Caledonia, Ont.

Fistula and Poll Evil

Any person, however inexperienced, can readily cure either disease with FLEMING'S FISTULA AND POLL EVIL CURE—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in Fleming's Vest Pocket Veterinary Adviser. Write us for a free copy. Ninety-six pages, covering more than a hundred veterinary subjects. Durable, bound, indexed and illustrated.

75 Fleming Bros. Chemists Church Street, Toronto, Ont.

How to Tell.
A lady advertised for a man to work in her garden, and two men applied for the job. While she was interviewing them on the lawn she noticed that her mother on the piazza was making signs to her to choose the shorter of the two men, which she finally did. When the ladies were alone the daughter said:
"Why did you signal me to choose the shorter man, mother? The other one had a much better face."
"Face!" returned the old lady. "When you are picking out a man to work in your garden you want to go by his overalls. If they're patched on the knees, you want him; but if they're patched on the seat, you don't."

What's the Use?
"Dinah," inquired the mistress suspiciously, "did you wash this fish carefully before you baked it?"
"Law, ma'am," said Dinah, "wot's de use ob washin' er fish dat's lived all his life in de watah?"

SCOTCH SHORTHORNS FOR SALE
Silver Count (imported in dam) calved March 16th, 1916. A yearling bull by Silver Count, also a choice offering in cows and heifers. Imported and Canadian bred. Write or come and see. A. & G. Forbes, R. R. 2, West Montrose, Ont.

Questions and Answers. Miscellaneous.

Oil-Cake for Stock.

About what amount of oil-cake meal should be fed to a cow giving 25 lbs. of milk?

2. Is it good for horses?

3. Would you advise feeding it to hogs? T. H. R.

Ans.—1. It depends on what other feed the cow is getting. On a ration of timothy hay, silage and home-grown grains, considerably more could profitably be fed than if the cow was getting clover or alfalfa hay along with silage. A pound a day is not too heavy feeding; in fact, many feed considerably more.

2. A little fed to horses will help to keep them in condition.

3. We have found that a little can profitably be fed to hogs.

Blackhead.

I have a number of turkeys, but several have died. They stop eating, the wings droop, they have white diarrhoea. What is the trouble, and what treatment do you advise? F. B. W.

Ans.—The symptoms are very much like those of blackhead. If birds are suffering from this disease you will find that those which die will have sunken spots on an enlarged liver. This disease is very hard to treat and recovery is doubtful. Give a mixture of five grains of sulphur, one grain sulphate of iron and three grains of sulphate of quinine, night and morning. One teaspoonful of muriatic acid to a pint of drinking water is recommended. Isolate the diseased birds from the flock, and do not feed the birds on ground where they have been running for some time.

Mare With Swollen Legs.

I have a four-year-old mare that has been worked some for past two years, but her hind legs swell badly when she is stabled. Kindly advise treatment. M. E. H.

Answer.—Some horses are predisposed to this trouble. It is very often brought on by improper feeding when the animal is idle. If the mare is to be off work for even one day, the grain ration should be considerably reduced. It is possible that this trouble may be chronic. Prevention of the trouble is regular exercise, and feeding according to the work done. It might be well to use a little bran in the ration, and during the winter feed a few roots. If not in foal, give the mare a purgative of 8 drams aloes and 2 drams ginger, and follow with 3 drams nitrate of potash three times daily for a short time.

Timbers for Barn.

I contemplate building a barn 36 feet wide, with a mow 28 by 36 feet and another 14 by 36 feet, with two drive-ways, the building to stand on a concrete foundation. Would joists on 24-inch centres and 12-foot span be strong enough if they are made of 3 by 10-inch elm. What is the carrying capacity of a 3 by 10 by 12-foot stick on edge, bridging in every 6 feet apart? My mows will be required for either grain or hay. The centre of the mow will be 37 feet to the peak. What is the weight capacity of hemlock? Every 14 feet there will be re-enforced joists across the building. It is to be a plank-frame structure. G. D.

Ans.—It will depend a good deal on the quality of the timber used and on the nature of the supports. Three by 10-inch joists with a 12-foot span should carry the weight. Care should be taken to have the ends of the joists resting on a solid foundation. We know of different buildings where the joists are placed 24 inches apart. However, it would be possibly safer to put them 20 inches apart and bridge them in the centre, especially over the drive-way. We cannot give the carrying weight of either the hemlock or elm when placed on edge. Where there is a heavy weight it is advisable not to have the spans much over 12 feet.

J. W. Burt, of Hillsburg, writes that his advertisement in "The Farmer's Advocate" has given him excellent results. Among his recent sales was a bull calf to A. F. Young, of Embro, and two cows with calves at foot to E. Walters, of Walter's Falls.



Have You Heard These?

The "Phonola" records are the newest double disc records. They are played with the sapphire point—no needles to change.



New Double Disc Records

are beautiful, clear, full-toned records, practically indestructible. The most popular artists in America make records for the "Phonola." Band, Orchestral, Instrumental, Vocal and Talking records in a wide variety of classical, popular, sacred, patriotic, Hawaiian, and dance selections are in the "Phonola" list.

A new list of 10-inch double disc records issued every month. All sold at one price—90c. each.

If there is no dealer in your locality handling these newest of records—The "Phonola" Double Discs—write us for list of records.

"Phonola" records are reproduced most faithfully on the "Phonola"—10 styles of cabinets, from \$25 to \$310.

DEALERS.—The "Phonola" line of phonographs and records make a most attractive agency proposition. There are some localities where we require good, live representation. Write us for particulars.

90c

The Phonola Co. of Canada, Limited
Kitchener, Canada

LAKE MARIE FARM SHORTHORNS

We have sold nearly all the females we have to spare, but still have several good, young bulls of serviceable age, all of which are sired by the R.O.P. sire St. Clare. They are priced to sell. We are also pricing a number of Dutch Belted cows and heifers.

LAKE MARIE FARMS, KING, ONT.

SIR HENRY PELLATT, Owner

THOS. McVITTIE, Manager.

Robert Miller, Stouffville, Ont. still has a few Shorthorn bulls, fit for service, and some females that are as good as can be found for the man that wants to start right in Scotch Shorthorns. They will be sold for a low price, considering the quality, and the freight will be paid. Write for anything in Shorthorns. One hour from Toronto.

1861 IRVINEDALE SHORTHORNS 1918

Herd headed by Marquis Supreme =116022=; have on hand, a number of good young cows and heifers, bred to Marquis Supreme. Also a right good lot of bulls, all by Gainford Select =90772=. Anyone in need of a good young bull or a nice, well-bred heifer will do well to write to JOHN WATT & SON (G. T. R. & C. P. R.) R.R. 3, Elora, Ont.

12 SHORTHORN BULLS

We are again on the market with a dozen choice bulls from eight months to two years old out of good dual-purpose Dams and best of Bulls. Also forty females to select from. Crown Jewel 42nd still heads this herd of feeders, breeders and milkers. Hensall, Ont. JNO. ELDER & SON.

MILKING SHORTHORNS

Herd headed by Dominator 106224, whose two nearest dams average over 12,000 pounds of milk in a lactation; cows with records up to 11,000 pounds of milk in a year. Bulls ready for service for sale. Heifers and cows for inspection. Weldwood Farm, Farmer's Advocate, London, Ontario.



Walnut Grove Shorthorns—Trout Creek Wonder 56167. Gainford Eclipse 103055. We are offering an exceptionally choice lot of bulls and heifers from the best Scotch families, and our herd sires, Trout Creek Wonder and Gainford Eclipse. If interested, write. DUNCAN BROWN & SONS Sheddin, Ontario. Twelve miles west of St. Thomas. Bell Phone. M.C.R. and P.M. Ry.

ESCANA FARM SHORTHORNS

Five Bulls for Sale. One roan senior yearling; one choice twelve-months white calf, by Right Sort (Imp.); one select, dark roan, ten months calf; one roan yearling, by Raphael (Imp.); one roan red yearling, for grade bull. Farm ¼ mile from Burlington Jct., G. T. R. BURLINGTON, ONT. J. F. MITCHELL, Limited.

SHORTHORNS, SHROPSHIRE

Four richly-bred Lavinia females for sale. Grand lot of bull calves sired by Lochiel (Imp.) for next fall's business. Also nice bunch of Shropshire lambs, sired by Miller ram. Come and see them. Wm. D. Dyer, R. No. 3, Oshawa, Ont. 2½ miles from Brooklin, G. T. R.; 4 miles from Brooklin, C. N. R., or Myrtle, C. P. R.

FLETCHER'S SHORTHORNS

Our herd of Scotch Shorthorns represents Orange Blossoms, Kilblean Beauties Matchlesses, Mysies Missies, Clementinas, etc. and is headed by the Watt-Stamford bull, Victor Stamford =5959= a Toronto winner. Present offering—one young bull and several heifers and cows. GEO. D. FLETCHER, ERIN R. 1, ONT. Erin, Station, C.P.R., L.-D. Phone

Flintstone Farm

Breeders of

Milking Shorthorn Cattle, Belgian Draft Horses Berkshire Swine.

We offer animals that will raise herds to a level of wartime efficiency. Bull calves from \$125 up.

DALTON
Massachusetts

Mardella Shorthorns

Herd headed by The Duke, the great, massive, 4-year-old sire, whose dam has 13,599 lbs. of milk and 474 lbs. of butter-fat in the R. O. P. test. I have at present two exceptionally good young bulls ready for service, and others younger as well as females all ages. Some are full of Scotch breeding, and all are priced to sell. Write or call. Thos. Graham, R.R. No. 3, Port Perry, Ont.

Graham's Dairy Shorthorns

I have a choice offering in cows and heifers in calf. Bulls from the heaviest milking strains. Satisfaction guaranteed.

Charles Graham, Port Perry, Ont. and Shropshires—We still have a few extra well-covered shearing rams. Also a choice lot of ram and ewe lambs. Prices right. We can supply young bulls or heifers both of which are from high-record dams. P. CHRISTIE & SON, Port Perry, Ont.

Lochabar Stock Farm is offering a good 16-month-old bull; light roan, Scotch bred. Freight paid and priced right. D. A. GRAHAM R.R. No. 4 Parkhill, Ontario

January - February

These are the months in which Bricks should be hauled for use next Spring.

Write for Colored Catalogue Sheets

Interprovincial Pressed Brick

is a smooth, hard surfaced facing brick and is the kind to haul for first-class work.

INTERPROVINCIAL BRICK CO. OF CANADA, Limited 30 TORONTO ST., - TORONTO

COTTON SEED MEAL and CAKE

Our Brands: Jay Dove Owl Lone Star 36% Protein 38 1/4% Protein 41% Protein 43% Protein

F. W. BRODE & CO. Estab. 1875 MEMPHIS, TENN. Branch Office Dallas, Texas.

Cream Wanted

Ship yours to us, as we must have it to supply our well-established trade with good quality butter.

MUTUAL DAIRY & CREAMERY 743 King St., W., Toronto, Ont.

Europe Wants HOLSTEINS

Little Belgium alone requires 20,000 pure-bred and 100,000 grade Holsteins. Other European countries are in a similar condition.

Information from the HOLSTEIN-FRIESIAN ASSOCIATION President, Dr. S. F. Tolmie, M. P., Victoria, B. C.

MESSRS. A. J. HICKMAN & CO.

Halse Grange, Brackley, England (late of Egerton, Kent)

Exporters of all breeds of stock, draft horses, beef cattle and show and field sheep are specialties.

Holstein Bulls

Ready for service and younger. Cows and heifers bred to ORMSBY JANE BURKE, whose two nearest dams average 38.82 lbs. of butter in 7 days.

R.M. Holtby, R. R. 4, Port Perry, Ont.

When writing please mention "Advocate"

Questions and Answers. Miscellaneous.

Wool Balls.

What treatment do you advise for wool balls in a sheep's stomach? I had three die from this trouble. A. E.

Ans.—No curative treatment is effective. Prevention consists in clipping the ewes in cases where there is danger of the lambs getting fibres of wool, and feeding so as to produce a sufficient flow of milk.

Cement Paint.

I have heard that paint for a barn can be made with cement in place of white lead. What is a recipe for this? W. W.

Ans.—The following is a recipe for cement paint: Put cement in a suitable receptacle and mix coloring matter with it of the shade you desire.

Leg Weakness.

What is the reason for hens losing the use of their legs? They appear all right at night but in the morning are not able to stand up.

Ans.—The symptoms given are not very explicit. It is not stated whether or not the birds gradually recover the use of their legs during the day.

Concrete Floor.

I am thinking of putting in a concrete driving floor over my basement and also for granary floor. Would it prove satisfactory? J. N. K.

Ans.—We see no reason why such a floor would not be satisfactory. In putting it in, it would be necessary to use iron stringers or joists.

Horse Eats Wood.

I have a horse which has a craving for eating wood. I have tried several remedies but without effect. What treatment do you advise?

2. What feeds should a horse have that is in a run-down condition after the fall work? R. B.

Ans.—1. The trouble was likely started owing to lack of mineral matter in the feed. It is possible that it has now become a habit which it is practically impossible to break.

2. Careful feeding and good grooming, with regular exercise, is necessary to flesh-up a horse. There is nothing better than good oats and a little hay.

Complete Clearing Sale Thirty High-class Holsteins

Owing to the scarcity of feed with me this year, following the scarcity of help last summer, I am forced to sell the majority of my stock, and have, therefore, decided to dispose of my entire herd of pure-bred Holsteins, absolutely without reserve.

Brantford, Ont., Wednesday, Jan. 15, 1919

WRITE FOR CATALOGUES. G. J. BARRON - R.R. No. 3, Brantford

SUNNYBROOK FARM HOLSTEINS

Offers—One 30-lb. bull, and several grandsons of the great King Segis. Two of these are ready for heavy service. We also have a number of heifers of same breeding—all from approved dams.

JOSEPH KILGOUR, - Eglinton P.O., Ont., North Toronto. Phone Adcl. 3900

Manor Farm Holstein-Friesians

If it's a herd sire you want, write me. I have sons of both my senior and junior sires, King Segis Pontiac Posch and King Korndyke Saddle Keyes. All from good record dams.

Gordon S. Gooderham Farm on Toronto and Hamilton Highway Clarkson, Ont.

HOSPITAL FOR INSANE

HAMILTON - ONTARIO

Present herd sire is one of the best sons of King Segis Alcartra Spofford; we have three of his sons born during May and June last, and also a grandson of Lakeview Lestrange. Apply to Superintendent.

Raymondale Holstein Friesians

A herd sire of our breeding will improve your herd. We have sons of our present sire, Pontiac Korndyke of Het Loo (sire of \$12,780 Het Loo Pietertje) and also sons of our former sire, Avondale Pontiac Echo.

Raymondale Farm, Vaudreuil, Que. D. RAYMOND, Owner Queen's Hotel, Montreal

Dumfries Farm Holsteins

S. G. & ERLE KITCHEN, St. George, Ontario

YOUNG BULLS FOR SALE

from R.O.P. champions and dams and sisters of R.O.P. champions, sired by Canary Hartog and some by a son of Queen Butter Baroness, the dam of two champions in 7-and-30-day tests.

His Dam and Sire's Dam Average 37.66 lbs.

Of the several young bulls we are offering for immediate sale, we have one whose dam and sire's dam average 37.66 lbs. of butter in 7 days, and 127 lbs. of milk in 1 day.

Alluvialdale Farm Holstein Friesians

I am offering for sale—Several young tested cows to freshen in Feb. Bred to Sir Gelache Walker, whose 7 nearest dams average 30 lbs. butter in 7 days.

Riverside Holsteins---Choice Bulls

We have several 10 months old, from dams with official records up to 100 lbs. of milk per day and 32.32 lbs. of butter in 7 days. These are well marked and straight individuals.

ORCHARD LEIGH HOLSTEINS

Present offering—3 young bulls ready for winter service. Good individuals with good R. O. M. and R. O. P. backing. Also one good March calf. Write or better come and see them.

Cloverlea Dairy Farms

Herd headed by "King Pontiac Rauwerd" one of the world's greatest young sires carrying the blood on his sire's side of the world's greatest cow "May Echo Sylvia," and his dam the great 103-lb. 3-year-old with 34 and 135 lbs. butter in 7 and 30 days, sired by the world's greatest sire King Pontiac Artis Canada.

SUNNYSIDE STOCK FARM HOLSTEIN

Echo Segis Fayne, our herd sire, is by a brother of the world's 50-lb. cow, Segis Fayne Johanna. He is a grand bull in every way, and is not yet 4 years old. To avoid in-breeding would sell him at a price.

SILVER STREAM HOLSTEINS

Special offering—four well-bred young bulls fit for service, sired by King Lyons Colantha, whose 6 nearest dams average 30.10 lbs. butter in 7 days, and from daughters of King Lyons Hengerveld, whose five nearest dams average 31.31 lbs. butter in 7 days.

14 REG. HOLSTEIN HEIFERS FOR SALE

I have sold part of my rough pasture so am offering 14 heifer calves from 8 to 11 months of age, calved by a 31.28 lb. bull, also could spare 4 2-year-olds due to freshen in January.

Questions and Answers. Miscellaneous.

Yeast Treatment.

Could you again publish in your paper the recipe for the yeast treatment? J. P.

Ans.—What is known as the yeast treatment may give the desired results if the heifer is physically all right. Mix an ordinary cake of yeast to a paste with a little warm water and allow to stand for 12 hours in a moderately warm place, then stir in one pint of freshly-boiled luke-warm water, and allow to stand for another eight or ten hours. The mixture will then be ready for use, and the entire quantity should be injected into the vagina of the animal to be bred. Use the mixture when period of heat is first noticed and breed when period is about ended.

Lame Colt.

I have a three-year-old colt which went lame on one front leg last spring. The lameness left that leg and went to the other. I had him shod, but it does not relieve the trouble. This fall he went lame on one hind leg. The trouble seems to be in his foot. A gathering formed at the hoof head and broke. The horse is in good condition. What treatment do you advise? T. B.

Ans.—The symptoms of lameness are not definitely given. Consequently, we are unable to diagnose the case. Apparently the colt has gone lame on all fours at one time or another this summer. Lameness may result from different diseases of leg and foot. It is advisable to have your local veterinarian examine the animal so as to locate the seat of trouble.

Tuberculosis—Cistern—College Course.

I have a flock of hens that were well fed and had free range over the farm, yet they appear drowsy and do not lay. The heads are pale and several have gone lame. What is the cause?

2. I purpose digging a cistern outdoors near the house. Will 6 feet from the cellar wall cause trouble from water soaking into the cellar? How many bricks will be required to build it? Should it be plastered on the inside?

3. Would a two or three-weeks course at Guelph be of benefit to a young farmer who is interested in live stock?

4. Do the agricultural colleges teach just one course a month? To whom should I make application for entry?

5. What strains of pigs are used to get the improved Yorkshire?

6. I secured a sample of potatoes and peas from the Department of Agriculture and had good results. A neighbor tells me I must send in a report of my crop. Where should this report be sent? G. L.

Ans.—1. The symptoms are those of tuberculosis, a disease which is very difficult to treat. Isolate the diseased birds from the main flock, and you might almost as well kill and bury them. Keep the healthy birds in a dry, well-ventilated building that is free from drafts. Thoroughly clean and disinfect the hen house and yards.

2. There should be no danger from a cistern 6 feet from the house wall. In fact, with many cisterns the house wall is used for one wall of the cistern. In regard to the number of bricks, we cannot answer this as the dimensions of the cistern are not given. It will be necessary to plaster the cistern on the inside, and cement mortar might be used in laying the brick. Many use concrete for constructing a cistern.

3. It should be of great benefit. A two-weeks course in stock and seed judging is held every winter at the O. A. C. Guelph.

4. A regular course of study is put on in which a number of subjects are taught. Lectures are given on these subjects several times a week. In the Short Courses extending over a period of two weeks, the lectures are confined to certain subjects.

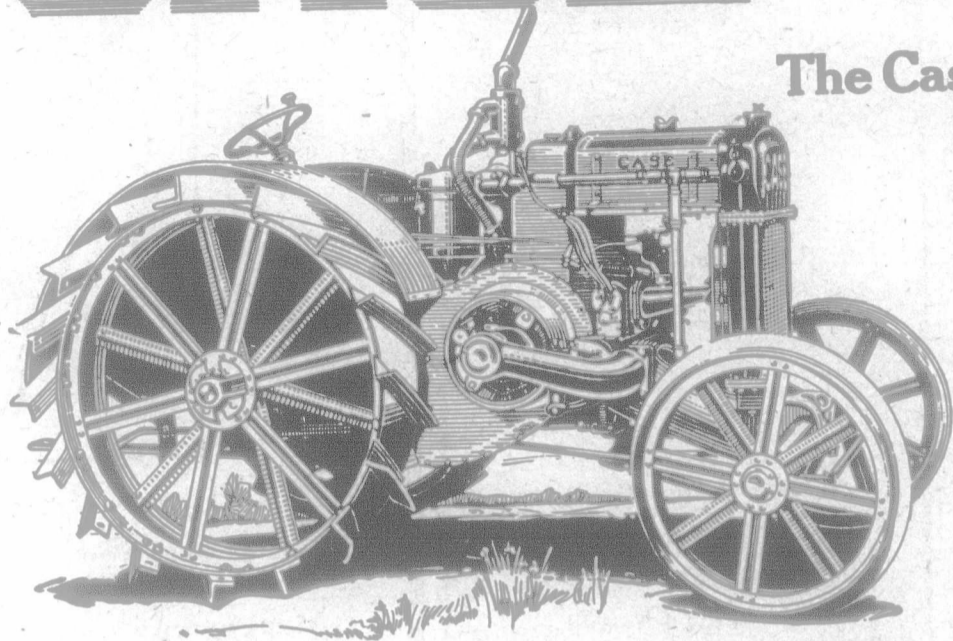
5. The improved Yorkshire is developed by careful selection and breeding of the Yorkshire. This selection has developed a little different type to the Yorkshire as it was known in the years gone by.

6. When the Department sends out seeds it usually asks that a report be sent in. If you secured the potatoes and peas from Guelph, the report would go to Dr. Zavitz; if the material came from Ottawa, the report should be sent to the Experimental Farm, Ottawa.

CASE

ANNOUNCES A New 3 or 4 Plow Kerosene Tractor

The Case 15-27



Pulls 3 Plows in Hard Plowing—4 Plows Under Favorable Conditions

Here is the latest Case Tractor—offered in our 77th year of experience in the production of power-farming machinery and 27th in the production of motor tractors.

No tractor is finer. And we know of no equal.

We feel certain that this Case 15-27 will receive instant recognition among knowing farmers everywhere.

No man can afford to judge tractors of this size—nor decide which is best—until he has studied this Case 15-27.

While rated at 15 horsepower on the drawbar, this Case 15-27 can deliver more than 18 horsepower.

While rated at 27 horsepower on the belt, it can deliver about 33 horsepower.

In fields where plowing is difficult—tough or baked soil, stiff grades, etc.—this tractor

pulls 3 plows easily. Where conditions are favorable this tractor can pull 4 plows.

With reasonably good footing this tractor easily delivers a pull of 3,000 pounds at the drawbar. Its reserve power makes it possible to attain 3,600 pounds pull, or over.

Under variable soil and field conditions, the operator may take advantage of the two-speed transmission, using low speed (2 1/4 miles per hour) for hard pulls, and high speed (3 1/2 miles per hour) for normal draft.

Your field conditions will determine whether you should use 3 or 4 plows, or whether you should pull 3 plows on low or high gear.

A complete illustrated and descriptive catalog of all Case Kerosene Tractors will be sent gladly, upon request.



J. I. Case Threshing Machine Co., Inc. Founded 1842 1566 Erie St., Racine, Wis., U. S. A.

THE CANADIAN FAIRBANKS-MORSE CO., Limited Toronto, Ont.; Montreal, Que.; Ottawa, Ont.; St. John, N. B.

Brampton Jerseys at National Dairy Show

At the National Dairy Show at Columbus, Ohio, in October, Brampton Jerseys won among other major awards first for the best five females of the breed, which is perhaps the greatest award which can be won at this the World's Greatest Dairy Show. Among these was Beauty Maid, the champion four-year-old at this the World's Greatest Dairy Show. We also bred and owned the dam and imported the sire of the mature R. O. P. butter cow for Canada. We also bred and owned the dam and imported the sire of the mature champion R. O. P. butter cow for Canada. Why not make your selections from the Brampton herd?

B. H. BULL & SONS BRAMPTON, ONT.

THE CANADA'S MOST BEAUTIFUL JERSEY HERD

Herded by Imported Champion Bower.

WOODVIEW FARM Winner of first prize with five of his daughters on the Island of Jersey, in 1914

JERSEYS second in 1916, and again first in 1917. We are now offering for sale some very choice bull calves, ready for service. Sired by imported bulls and from record

LONDON ONTARIO of performance imported prize-winning cows. Also some cows and heifers. Jno. Pringle Prop. Prices right We work our show cows and show our work cows.

THE EDGELEY CHAMPION HERD OF JERSEYS

Write us about your next herd sire. We now have sons of our present herd sire, Edgeley's Bright Prince who is a son of Canada's champion butter cow, Sunbeam of Edgeley. Pay us a visit. Sunbeam of Edgeley is not the only high-record cow we have. We are pleased to show our herd at all times.

JAMES BAGG & SONS (Woodbridge, C.P.R.; Concord, G.T.R.) EDGELEY, ONTARIO.

ORKNEY FARM AYRSHIRES

I have a strong offering at present of bull calves out of "Dairymaid of Orkney" and others closely connected with "Milkmaid of Orkney," "Primrose of Orkney" and "Lenore 2nd." Yearly heifers bred to our imported sire, "Dunlop Corolla." Attractive prices quoted for immediate sale. Inspection solicited.

H. McPHERSON (Bell Phone), R. R. No. 1, COPETOWN, ONT.

GLENHURST AYRSHIRES—ESTABLISHED 50 YEARS

For a half-century Glenhurst Ayrshires have been noted for their depth and size, good teats and smoothness of conformation. Our famous Flos family has produced dozens of 60 and 66-lb.-a-day cows, many on twice-a-day milking. We have young Bulls up to twelve months, and females all ages. If you are looking for a combination of size, type and production—plus high butter-fat—write me or visit the farm. JAS. BENNING, Summerstown, G.T.R.; Williamstown, G.T.R., Williamstown, Ont.

Gladden Hill Ayrshires—We have a choice selection of females bred for type and production. If in need of a young bull having Record of Performance dams, write, or come and see them.

Laurie Bros., AGINCOURT, ONT.

C.P.R., G.T.R., C.N.R., Shipping Stations.

SPRINGBANK For a few weeks we will offer a few select, young heifers by our senior R. O. P. AYRSHIRES sire Netherton King Theodore (Imp.) and bred to our Junior Sire Humes-haugh Invincible Peter. All from R. O. P. dams and are priced reasonable to make room. We also have a 3 months' bull from Can. Champion R. O. P. three-year-old, and one 12-months' bull from Mountain Lass with three mature records. A. S. TURNER & SON, Ryekman's Corners, Ont.

- Case Superiorities
1 Weighs about 5,600 pounds. Low and compact with short wheelbase. Turning radius 13 1/2 ft. Stays on all fours.
2 Rated 15 horsepower on the drawbar and 27 horsepower on the belt, which is only 80 per cent of its actual capacity.
3 Four-cylinder Case valve-in-head motor. Removable head. Motor is set crosswise on frame, affording use of all spur gears. This conserves power.
4 One-piece cast main frame, forming dustproof housing for rear axle, bull pinion shaft, transmission and the bearings for these parts. Also a base for motor. This construction brings rigidity and prevents disalignment.
5 Belt pulley mounted on the engine crank shaft. No gears used to drive it. Pulley is part of the tractor, not an extra-cost accessory.
6 All traction gears are run in steel, enclosed and running in oil. No bevel gears, chain, worm or friction drive parts.
7 Case Syphon Thermostat controls cooling system and insures complete combustion of kerosene in the motor. Prevents raw fuel from passing by pistons and diluting oil in the crank case.
8 Case air washer delivers clean air to carburetor. No grit nor dust gets into cylinders to minimize their efficiency and shorten their life.
9 All interior motor parts lubricated by a combination pump and splash system. Speed governor, fan drive and magneto are dustproof and well oiled.
10 Hyatt Roller Bearings throughout. High tension ignition. Kingston carburetor. Radiator with a cast frame. Core, copper fin and tube; non-clogging type.

JUST JERSEYS Baldwins REGISTERED COATICOOK, QUE.

Twenty-five Years Breeding REGISTERED JERSEYS and BERKSHIRES

We have bred over one-half the world's Jersey champions for large yearly production at the pail. We bred, and have in service, the two grand champion Berkshire boars. If you need a sire for improvement, write us for literature, description and prices.

HOOD FARM, LOWELL, MASS.

Glencairn Ayrshires—Herd established ability from 8,600 to 11,022 lbs. If that sort of production appeals to you, we have heifers all ages and young bulls for sale. Thos. J. McCormick, Rockton, Ont. Copetown Station, G.T.R.

City View Ayrshires

Young cows just freshened, Heifers due in January or February. You should have one of our service bulls, all R.O.P. bred. James Begg & Son St. Thomas, Ont.

Choice Offering in Ayrshires

AT SPECIAL PRICES. Several young bulls of serviceable ages. All from R.O.P. sires and dams. Come and see them. JOHN A. MORRISON, Mount Elgin, Ontario

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The Sheep for the Producer, Butcher and Consumer. Our Oxfords Hold an Unbeaten Record for America.

We have at present a choice offering of yearling ewes and rams, as well as a lot of good ram and ewe lambs—the choicest selection of flock-headers and breeding stock we have ever offered.

PETER ARKELL, & SONS
R. R. No. 1, Teeswater, Ontario
H. C. Arkell W. J. Arkell F. S. Arkell

SHROPSHIRE and COTSWOLDS

I am offering for sale 30 imported Shropshire rams, also home-bred rams and ewes, all at reasonable prices.

JOHN MILLER, CLAREMONT, ONT.

Shropshires

Yearling rams and ewes. A few nice ram lambs by imported ram.
W. H. PUGH, R. R. 1, Myrtle, Ont.

TOWER FARM OXFORDS

We are now offering a choice lot of shearing rams and ewes, also ram and ewe lambs. Prices reasonable.
E. Barbour & Sons, R.R. No.2, Hillsburg, Ont.

Just Two Good Shearling Rams Left

Sired by our stock ram, would be good big ram to cross on bunch of grade ewes. For quick sale at reasonable price. S. J. ROBERTSON, Horaby, Ont. (Formerly of J. Robertson & sons)

SHROPSHIRE SHEEP

Breeding ewes of Kellock and Campbell breeding; bred to lamb in March and April, also ram and ewe lambs. C. H. SCOTT, Hampton P. O. Oshawa, Station, all Railways. Bell Phone.

Berkshires

Young sows and boars for sale. A grand litter sired by Suddon Toreador (imp). Dam by Duke of Summerset (imp.) and from Highclere 59th (imp).

J. W. SANGSTER

LISTOWEL - ONTARIO

REGISTERED

Poland China Boars

fit for service and sows ready to breed; also pigs ready to wean, either sex; registered Dorset Horn rams and ewes, bred to lamb in January; ten registered Southdown bred ewes. All stock priced for immediate sale.

CÉCIL STOBBS, Leamington, Ont.

Newcastle Herd of Tamworths and Shorthorns Boars ready for service. Some bred and ready to breed; 2 splendid sows carrying their 2nd and 3rd litters. Boars and sows not akin, ready to wean. Mostly descendants of Colwill's Choice, 3-year champion at Toronto Industrial, and imp. Cholderton Golden Secret. A few nice Shorthorn heifers in calf, deep-milking strain. Young cows with calves at foot. Long-distance phone.

A. A. COLWILL, Proprietor, R. R. No. 2, Newcastle, Ont.

BIG TYPE CHESTER WHITES

20 boars ready for service. Bred sows, and weaning pigs.

JOHN ANNESSER, Tilbury, Ont.

Meadow Brook Yorkshires

Sows bred, others ready to breed. Six large litters ready to wean, also a good yearling boar. All choicely bred and excellent type.

G. W. MINERS, R. R. No.3, EXETER, ONT.

TAMWORTHS

Boars ready for service—a choice lot to select from. Write: John W. Todd, R. R. No. 1, Corinth, Ontario.

Questions and Answers.

Miscellaneous.

Master and Man.

A hires with B for a term of 5 years, two of which A has served: B agrees to pay A the sum of \$800—\$160 a year. Now B has grown tired of his bargain, and wants A to take \$100 a year instead of \$160. B claims he can put A in jail if he will not accept the new term, namely, \$100 a year. B claims A is a good man.

1. Has B any right to break the agreement to suit himself?
2. Is it legal for a man to leave a farmer if he uses a hired man the way B seems to be using A?
3. What would you advise A to do in the matter?
4. What is a lawyer entitled to charge A for advice?
5. Could B be made to pay A's lawyer for his advice?

Ontario. C. A.H.

- Ans.—1. No.
2. No.
3. Simply insist that B carry out his agreement.
4. Two dollars is commonly charged in such cases.
5. No.

Wife Dying Intestate.

My daughter died leaving no will. She had some money in the bank and some invested.

1. Can her husband claim all her money, though he had her to sign a blank check a few months before she passed away?
2. He also has part of her personal belongings. Can he claim what I have in my possession, such as wedding presents and linen she bought with her own money at time of marriage, which was over a year ago? She was earning her own living and continued to do so within a few days of her death.
3. I also have some silverware that I gave her as a Christmas gift. Can he take it?

Ans.—1. No.
2 and 3. The husband is entitled to letters of administration from the Surrogate Court upon filing a petition for same, accompanied by the usual proofs of death, intestacy etc., inventory of estate and bond with securities, for his due administration of his wife's estate. All the money and things you mention belong to her estate, and the husband would be entitled to one-half only of what remains after payment of his wife's debts and testamentary expenses. The other half would go to her father, mother, brothers and sisters in equal shares. We are assuming, of course, that she left no child.

A. P.

Tanning Furs.

Give a simple and effective method of tanning raw furs. Also a method for the soft tannery of hides.

N. R. G.

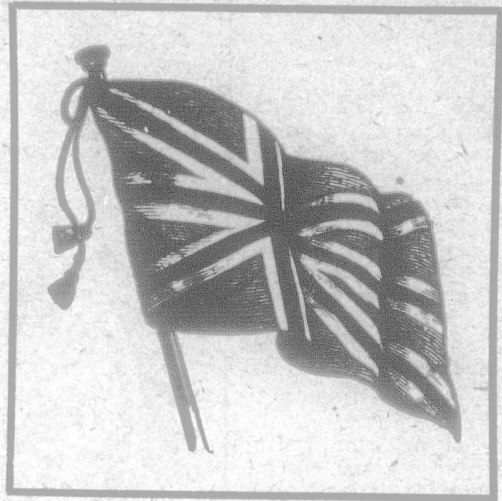
Ans.—While there are formulas for tanning hides, it entails considerable work, and without the proper appliances it is difficult to make a satisfactory job. It is advisable to have the work done at a tannery where the proper machinery and equipment is available. However, the following are three recipes:

1. Stretch the skin smoothly and tightly upon a board, hair side down, and tack it by the edges to its place. Scrape off the loose flesh and fat with a blunt knife, and work in chalk freely, with plenty of hard rubbing. When the chalk begins to powder and fall off, remove the skin from the board, rub in plenty of powdered alum, wrap up closely, and keep it in a dry place for a few days. By this means, it will be made pliable, and will retain the hair.
2. Soft water, 10 gallons; wheat bran, ½ bushel; salt, 7 pounds; sulphuric acid, 2½ pounds. Dissolve together, and place the skins in the solution, and allow them to remain 12 hours, then remove and clean them well, and again immerse 12 hours longer, if necessary. The skins may then be taken out, well washed and dried. They can be beaten soft, if desired.
3. Saltpetre 2 parts, alum 1 part; mix. Sprinkle, uniformly, on the flesh side, roll up, and lay in a cool place. Spread it out to dry; scrape off the fat, and rub till pliable.

"That is an eight-day clock, madam," explained the dealer; "it will go eight days without winding."

"Gracious!" exclaimed the customer. "And how long will it go if you wind it?"

When the Boys Come Home



Have Your Flag Waving

Now is the time you need a good old UNION JACK to hang outside your house. Some of the boys are on their way back now, and will be looking for a rousing welcome from the folk at home.

THE FARMER'S ADVOCATE AND HOME MAGAZINE will send you a Union Jack, as shown in the illustration, 47 inches long by 33 inches wide.

You can get this flag absolutely free of any charge simply by sending in the name of one new subscriber and the \$1.50 he will give you to pay for his subscription to The Farmer's Advocate for one year.

Coupon THE FARMER'S ADVOCATE AND HOME MAGAZINE, London, Ontario

Gentlemen:—Enclosed is money order for \$1.50, and the name of a new subscriber. Please send me the Union Jack you advertised.

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Address.....

New name.....

Address.....

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Thousands of farmers have responded to the call of this fertile country, and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you. For full particulars as to regulations and settlers' rates, write to:

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G. H. FERGUSON, Minister of Lands, Forests and Mines.

Imported Shropshire Ewes

Imported Shropshire ewes bred to lamb in March and April. Write for prices
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Humeshaugh Yorkshires!

A special offering of young sows bred in September. Boars fit for service. August and September litters from exceptionally large litters. All are smooth, lengthy, medium bacon type, making good feeders. In Ayrshires
Alex. Hume & Co., Campbellford, Ont., R. R. 3.

Berkshire Pigs

Large size, choicely-bred sows in pig; boars and gilts. Can supply pairs not akin; also dual-purpose Shorthorn cattle. Young bulls for sale. send for our breeding list.
Credit Grange Farm, Meadowvale, Ont., - - J. B. PEARSON, Mgr.

Sunnyside Chester Whites and Dorsets. In Chester Whites both sexes, any age, bred from our champions. In Dorsets ram and ewe lambs by our Toronto and Ottawa champion, and out of Toronto, London and Guelph winners.
W. E. Wright & Son, Glanworth, Ont

Lakeview Yorkshires—If you want a brood sow or a stock boar of the greatest strain of the breed (Cinderella), bred from prize-winners for generations back, write me.
JOHN DUCK, Port Credit, Ont.

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From our recent importation of sows, together with the stock boar, Suddon Torredor, we can supply select breeding stock all ages. Satisfaction and safe delivery guaranteed.
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Langford Station on Brantford and Hamilton Radial.

A choice lot of Poland China and Chester White swine, bred from winning stock. Pairs not akin. Prices easy. Geo. G. Gould, R.R. 4, Essex, Ont.

Prospect Hill Berkshires—Young stock, either sex, far sale, from our imported sows and boars; also some from our show herd, headed by our stock boar, Ringleader. Terms and prices right.
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Rose Isle Farm

offers 20 choice young Yorkshires; October and November farrow. Two Shorthorn bulls, 10 and 15 months; roans; good breeding and individuality. Priced to sell. Write your wants.
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For quick sale, 30 September boars. Our herd won all champion prizes at Toronto and London, years 1916, 1917, 1918. Visitors welcome. For further particulars, write:
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A choice lot of young sows; boars ready for service. Sows carrying second litters. Young stuff all ages; pairs not akin. Express charges prepaid to your nearest station.
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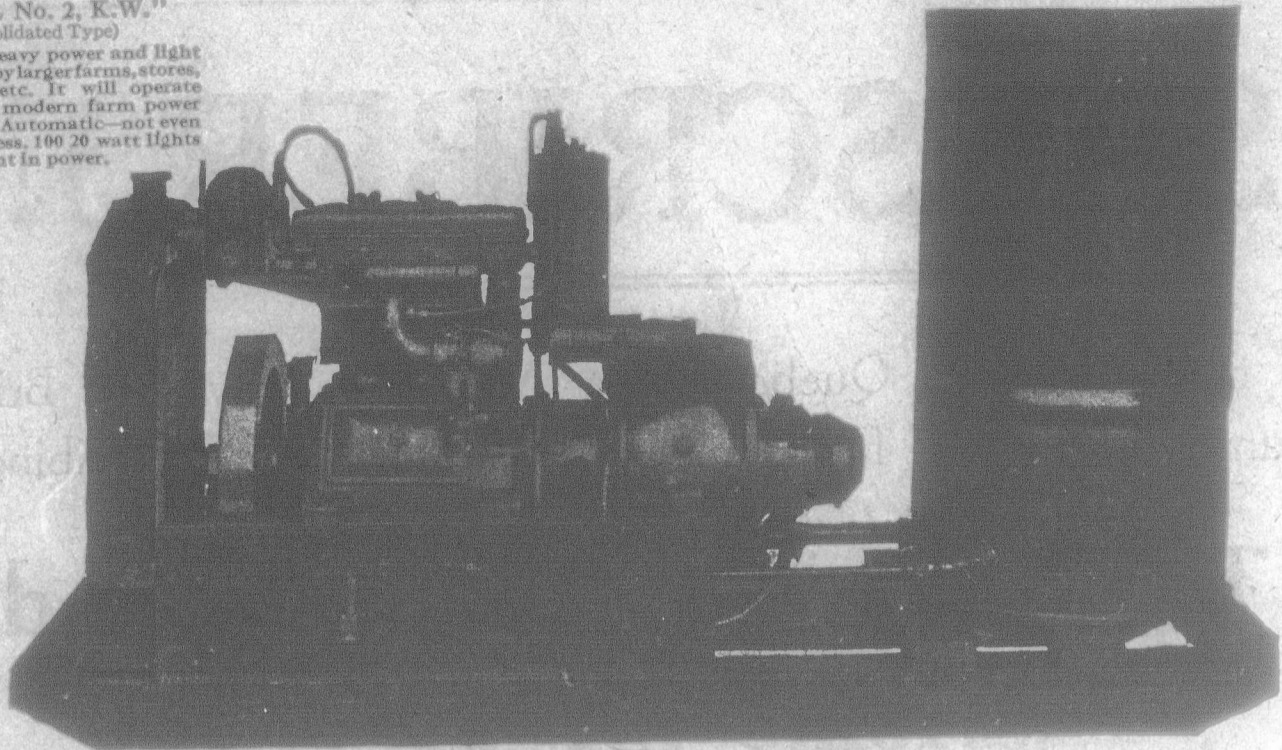
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(Consolidated Type)
Designed for heavy power and light work required by larger farms, stores, small hotels etc. It will operate practically all modern farm power requirements. Automatic—not even a button to press. 100 20 watt lights or its equivalent in power.



Drudgery on the Farm is like Autocracy to the World

—both are unnecessary evils. Drudgery is a menace to progress, a hindrance to liberty, and invariably responsible for the young folks quitting the farm. Now is the time to end drudgery and now is the time to investigate—

Northern Electric POWER and LIGHT

Learn what Northern Electric Power and Light can do for you; how electricity, properly and economically developed, will shake off the veil of drudgery that surrounds and isolates your farm.

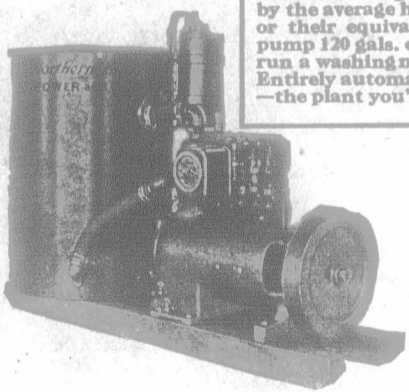
As your helper Northern Electric Power and Light will free you from many daily drudgeries. It will afford you plenty of time to study crops and stock; increases your earning power—all at a surprisingly low cost.

Farmers all over Canada are lighting their homes and out-buildings with Northern Electric Power and Light, operating water systems, milking machines, cream separators, grinders, etc. The womenfolks love electricity because it is so clean, because it saves time and work. They employ it to do their domestic chores such as operating washing machines, sewing machines, vacuum cleaners, toasters, fans, etc.

Electricity on the farm is as practical as it is economical, aside from the comfort and convenience it brings.

"No. 1, NORTHERN"
(Consolidated Type)

Gives all the light and power needed by the average home—15 to 20 lights or their equivalent in power. Will pump 120 gals. of water per hour or run a washing machine, churn, etc. Entirely automatic in its operation—the plant you've been waiting for.



About the System

Northern Electric Power and Light is entirely automatic and guaranteed absolutely reliable. Like a good hired man, it starts when there is work to be done and stops only when the work is finished—plenty of power, plenty of light. Not even a button to press nor any thought nor care, excepting an occasional oiling and replenishing fuel.

There is a Northern Electric Power and Light for every requirement; all types, all sizes, either direct connected or belt driven. From 15 to 1000 lights, or their equivalent in electric power for farm work.

You will surely be interested in Northern Electric Power and Light. Valuable literature will be gladly sent free for the asking.

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Northern Electric Company

LIMITED

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L. F. A. 109

Dear Sirs,

I want to know more about Northern Electric Power and Light. Please send me further particulars and literature, on the understanding that I in no way obligate myself to purchase.

Name

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Investigate and then decide

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