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Vol. LIII.

LONDON, ONTARIO, JANUARY 10, 1918.

No. 1320

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LIII.

LONDON, ONTARIO, JANUARY 10, 1918.

1320

EDITORIAL.

Put the ice in early.

The good feeder sees that mangers and feed troughs are kept clean.

The people of Canada have elected a Union Government and they expect results.

Some of the changes made "for the duration of the war" might well be extended to peace times.

The shortage of coal should prove an incentive to the further development of electric power in this country.

The United States is going to control its own railways for the good of the nation. Canada might well follow the example.

The critic who tears down and has nothing to put in the place of what he destroys never rises to a very high level in the affairs of men.

The elector who didn't take enough interest in the municipal election to go out and vote need not grumble at the incompetence of the council elected.

The Junior Farmers' Improvement Association has a wide field of usefulness ahead of it. The hope of agricultural organization in Old Ontario lies in the young men.

How can the Kaiser make peace with a Socialist Russia and deny socialists in his own country the right of free discussion of Germany's war aims? It will not work.

British breweries, we are told, are to be allowed to increase their output twenty per cent. Drinking seems to be more essential than eating in these times of so-called food shortage.

If farm poultry received the same careful attention that dairy cows, beef cattle, hogs, sheep or grain growing does on the average farm, the hen would show results for her owner.

How long would you like to live in a house with no more daylight in it than have some underground stables? You wouldn't last long, whether you liked it or not. Healthful conditions are necessary for live stock.

Keep a few choice roots of mangels and turnips free from frost and plan to grow your own seed this year for 1919. Root and vegetable seeds will be scarce unless Canada grows enough to supply her needs.

Those who buy oleomargarine complain that there is a difference of 10 cents per pound in the price of the product in the United States and in Canada, but then it is a new idea in Canada and, of course, would cost more.

Freight rates in Canada have been increased in order that greater efficiency may result in transportation. Everyone hopes that the increased efficiency soon becomes apparent. It would not do to allow the equipment to fall so far short as to be a further handicap.

Necessary as it is to produce food, it is even more imperative right now that transportation facilities be improved. The big problem is transportation. Full stores of food in America will avail the Allies little in Europe if the food cannot be transported as required.

What the Market Reveals.

A review of the transactions on the Toronto livestock market during the past year, as compared with the previous year, is worth some comment. We often hear statements made regarding the numbers of animals going on the markets and the number in farmers' hands, and sometimes these are misleading. The facts here reiterated were included in the latest Government market report and refer to Toronto market only.

Cattle receipts were about the same in 1917 as they were in 1916. This would indicate a steady effort on the part of the feeders of this class of stock. They are "carrying on" according to well-laid plans, and not jumping hither and thither at every beck and call.

Interesting as this is, however, the fact that a considerable increase was made in the numbers of stockers and feeders returned from this market to the farms for further feeding is of even more importance. In 1916, 26,000 head went back to the farms from Toronto market, while in 1917 over 43,000 head were so sent back for further fitting. This is an increase of 17,000 head, quite an appreciable number. No doubt a number of these went back as a direct result of the efforts of the Live Stock Branch of the Dominion Department of Agriculture in making freight conditions easy for farmers, and placing men on the market to aid in selection and purchase of the stock. At any rate a greater effort has been put forth toward higher finish on the cattle, and it pays to finish well as a general thing.

Some people who are wont to complain tried to make themselves think Canada should put an embargo on beef cattle going to the United States in an effort to bring down the cost of living in this country. Of course, they didn't understand cattle raising, markets and marketing, but for the entire year 1917 only 8,000 cattle went from the Toronto market to the United States, and half these were unfinished. This was 3,000 head fewer than went over in 1916, when 11,000 found their way across, chiefly to Buffalo.

A point of interest to feeders is brought out in the fact that the high point of the cattle market for the year was in May, at \$13 per cwt., and the low point came in September and October, when heavy runs of grass cattle were made. The price has come back and choice cattle went as high as \$12.75 per cwt. in December. This would seem to indicate more grassing of cattle than usual, and we would not wonder at it. Probably a large part of the 43,000 head returned to the farms during the year went back to be grassed off and were again on the market in September and October, which brought the price down. Scarcity of labor in the country is also having a tendency toward less stall feeding and more grass finishing. Feeder prices have been very high in the fall, and this tends to limit the number of cattle put in at that season to be stall fed all winter and turned off in the spring. This, in part, would account for the high-water mark coming in May. There is a point in this: Avoid rushing grassers on the market too fast at the end of the season, if at all possible.

There was no great saving of calves effected in 1917 as compared with 1916, nor was there any great attempt to veal everything as some seemed to think. The farmer's judgment was good and he kept a steady supply going forward, chiefly of calves which were not suitable for raising to maturity. The receipts for the year were on a level with those of 1916.

More attention is being paid to sheep. Prices of wool and mutton have been high, and this is the chief incentive for breeders. The number of lambs increased several thousand on Toronto market, and the top price was \$18.50 per cwt. It looks like good times for the sheep breeder.

For the year, hog receipts were lighter than in 1916. Feeds have been scarce and very high in price. The scarcity in the fall of 1916 sent a large number of brood

sows to the slaughter houses, and litters were fewer in the spring of 1917. July and August were the months of lightest run and poorest quality. In these months the average weight of the hogs marketed was between 160 and 170 pounds, whereas in December this average ran up to 190 to 195 pounds. It is all a question of feed. Farmers are out of feed in July and August, just before the threshing begins, and fewer pigs are sent out then and they are always in poorer fit. Again, sows would be farrowing in cold weather to have pigs reach six or seven months of age in July. For those who can keep the young litter warm and have skim-milk in abundance, it might pay to have a few more litters farrowed in mid-winter and save feed to finish them in July and August to catch the high market. However, young pigs in very cold weather are a risky proposition.

That Cheap Food.

Those who asked that oleomargarine be admitted to this country as a war measure to supply a necessary form of food for the poor man's table, at a price away below the market price for butter, would find some food for thought in market reports of the prices paid by consumers for this product. "The Farmer's Advocate" set forth the case against oleo at the time its entrance into this country was being considered. In that statement we did not contend that it was not a wholesome food, nor do we now. Moreover, all thinking and fair Canadians will agree that anything which will actually help the working man over the hard places in providing for his family at this or any other time should receive the full support of all the people. Those who objected to oleo coming in did so not only as a protection to the dairy industry but also as a protection to consumers. It is necessary to regulate the manufacture and sale of the product to safeguard the people. Only by pointing out the need can adequate regulations be made. The Canadian regulations appear to be well thought out, but oleo has not brought down the cost of living to any appreciable extent to the working man and his family. In our last week's Montreal market report the statement was made that grocers asked 38 cents to 40 cents per pound for oleomargarine, while finest September and October creamery butter sold at 44½ cents to 45 cents per pound, and fine quality one cent per pound lower. In the same report choice dairy butter was quoted at 36 cents to 39 cents per pound—lower than oleomargarine, and choice dairy butter, made in a clean farm household, is good enough for anyone. These figures do not reveal any great saving to those who buy oleo in place of butter. And it has not brought down the price of butter which was selling on this same market a few cents per pound higher in price before oleo was procurable than it was when our last market report was received. Of course, conditions may change. Eventually the price of butter may be affected, but it does seem now that oleo was not really expected to lower the cost of living to the poor man very much. True, it is cheaper than butter in some Canadian cities. It can be bought in London, Ont., for 35 cents per pound, but why should it sell for from 35 cents to 40 cents per pound in Canada when it was quoted in Chicago at the same time as follows: table, 29 cents to 30 cents; cooking, 21 cents to 24 cents? These are questions which the consumer might well ask.

As to the producer of dairy products no great injury to his business has yet manifested itself, beyond a first shock which sent dairy butter down about 5 or 6 cents per pound in some localities, but from which it soon recovered. An upset may come later. There is a butter shortage just now. Creameries are getting very small supplies. This tends to keep the market up. Undoubtedly when the spring flush of grass and fresh cows comes butter will be more plentiful and will drop in price. If it drops much it will also force oleo down,

The Farmer's Advocate

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Agents for "The Farmer's Advocate and Home Journal,"
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for the latter product will likely remain just a few cents per pound lower than butter—just enough to undersell it.

It is also said, strange to say, that the greatest demand for oleo is not found in the sections of cities where the poorer people live. We recently heard a wash woman complain about the high price of butter. When asked why she did not buy oleo she remarked: "I haven't come down to eating that stuff yet." It's a queer old world.

Now that oleo is here no one can call the dairy farmer inconsistent if he asks for free entry of some of the implements and machinery necessary in producing dairy products. Some thought the prohibition of oleo was a protection to the dairyman. If it was it is gone and there is room now for those in authority to be fair and go farther. And yet eventually they might really cheapen food by lowering the cost of production.

"For the Duration of the War."

As the war goes on more changes are made in order to promote efficiency and economy. Many of these reforms are great and sweeping and would, doubtless, not be made unless the conditions affected demanded such procedure. It is strange, however, that we have become accustomed to coupling with the announcements of these changes the words: "For the duration of the war." If prohibition is good national economics in time of war, why not in time of peace? Why not for good and all "stop all waste of food, men, labor, and brain power during these days when the nation needs the energy of every man at his best," for the nation needs all people at their best all the time. If Government-operated railways are to be preferred in time of war, and many great nations have acted accordingly, why not in times of peace? In war and in peace there should be the widest possible application of public ownership and operation of all public utilities. Beneficial reforms should live for the good of the people long after the war drums throb no longer and the battle flags are furled. The people will have the say in the matter and must be prepared to back up the Government in a continuance of the operation of reforms which have worked for the good of the country as a whole.

The Railway Situation in Canada.

Canada has railways which have paid and some which have not. It becomes necessary for the people to stand behind the roads which do not pay, and Government aid has been extended in plenty. In a short time the Government will be operating the C. N. R. system. Canada will then have three great systems, one controlled by the people, the G. T. R. and C. P. R., privately owned and operated. The Commissioners who investigated Canada's railway problems a short time ago and made recommendations to the Government that the C. N. R. and Grand Trunk be taken over and a combination of the Intercolonial, National Transcontinental, Canadian Northern, Grand Trunk and Grand Trunk Pacific be made, leaving only the great C. P. R. system under private ownership and operation, found that of all the systems named in the proposed amalgamation only the parent Grand Trunk system was capable of carrying its fixed charges. Most of these systems fail to earn anything above operating cost. The Commissioners found that if all these roads were taken over the entire system would commence with an annual deficit of \$12,500,000, which would have to be paid by the people as taxes or would have to be secured by increased rates.

While these roads are in such condition the C. P. R. is prosperous. It paid a dividend of ten per cent. last year, and laid up millions to the credit of profit and loss.

Looking at these conditions some cannot see why the country should be loaded with the roads that do not pay and the system which does pay be continued as a private enterprise. If all were taken over and left to the experienced management in charge, the surplus of one could be used to meet deficits in the others, and traffic could be arranged to give all an equal chance.

An increase in freight and passenger rates has been announced. Objections are already heard. This increase will not likely give the Grand Trunk and Government roads returns any more than necessary if quite sufficient to meet the increased costs of operation. But it may add considerably to the surplus of the C. P. R.—the road which needs the increase least. Increased freight rates are not popular in Canada. The people realize fully that the cost of operation has advanced considerably, but they do not feel sure that increased rates will mean greater railway efficiency, and it is efficiency that counts. There is a shortage of cars and a shortage of locomotive power. Maintenance has not been looked after as it once was. These things must not be allowed to continue too long else conditions will get worse. The railways are common carriers, and for the good of the nation should be operated in the best interests of all the people. If the Government operated all the roads under the most efficient management possible, and there was need of increased rates, the people would not object. But just now when all hands are asked to produce there are those who see no reason why increased production should bear a further burden of increased freight rates which will largely benefit a road which does not particularly need the increased revenue, and will not be sufficient to make other roads as efficient as they should be. If it is necessary to increase the rates to keep a number of the roads going, better take over all the roads and make the best use of the expert knowledge of the railroad men of long experience who have controlled and operated these roads under private ownership. It is true we have in Canada a Railway War Board for the purpose of co-ordinating railway work, and it is said that this Board has done considerable good in the interchange of rolling stock and motive power, however, it might be better to go the whole way as was done early in the war by Great Britain and has recently been done in the United States. Greatest possible efficiency is what is wanted, and this means most economical and best service to the greatest number. In union is strength. United railways controlled by the Government might make for greater strength in Canada.

Great Men.

It is well in these times that we do not forget the work of some great men whose efforts in life have resulted in great good to the world at large—"world benefactors." There have been a number of these whose works have lived after them and some are still living, who, when they pass on, will be remembered because of their efforts in the interests of humanity. Men who have made it easier for others to live—men who have devoted their lives to scientific research for the good of humanity—deserve a place in this list. It is our purpose to publish in the second issue of each month a short account of one of these men until the

list we have is covered. The first appears in this issue. Louis Pasteur was truly a world benefactor. If readers have in mind any really great men whom they think should be included in the list they would do us a favor by sending in the names.

The Bottom of the Ladder is a Good Start.

BY SANDY FRASER.

Every little while I will be readin' about some boy that has tae start oot tae mak' his livin' on the farm, wi' naething to his name but a pair o' blue overalls, a cotton short an' a straw hat, an' before the story is ended he's president or premier or somethin' like that, which na doot he would never have been if he hadna had sic a bad start. It looks as though the chap who starts at the bottom always goes up, an' that one who starts at the top has no choice but to come doon. I dinna think mysel' that this is the case, but it happens often enough to mak' ye stop an' wonder what's the reason. I suppose it's with boys something the same as it is with chickens. When they hae everything they want they winna scratch for themselves, but when it's a case of wark or starve they soon get busy. An' once they hae the habit it stays wi' them till they get tae the top o' the pile. I dinna care whether it's boy or rooster, early habits are the ones that stick.

I saw an account just the ither day o' one o' these "start-at-the-bottom" farm laddies, an' gin ye hae the time I'll just be repeatin' some o' it for yer benefit. Onyway, if it does ye no guid it canna dae ye ony harm. It seems this chap wis born in New York State, on a wee farm in Greene County. One o' the first things that he came tae understand about this farm wis that there wis a mortgage on it, an' the idea he got o' it wis that the mortgage wis bigger than the farm. The auld fellow that held the mortgage wis one o' these right-on-the-minute individuals, an' the day the interest wis due he wad be there at the door waitin' for it. He pit sae muckle fear intae oor young laddie that he made up his mind that he'd get rid o' the auld mon an' his mortgage if he had tae stay up nights tae mak' it oot. Sae, as ye might expect, he started in tae wark wi'oot muckle o' an education. The mortgage wis pushin' him an' he hadna time to wait for things like that. He stayed wi' the farm till he wis about eighteen an' then took to railroadin'. He thought he saw better prospects o' gettin' square wi' the auld mortgage holder on day wages than in raisin' grain an' live stock. An' na doot there wis, at that time. He got a job as brakeman an' later on as fireman. Then he took the notion tae gang tae the city. When he got to New York he had just three dollars an' thirty cents to his name. It wisna lang till he got work as fireman on one o' their elevated roads there, an' a couple o' years later he wis made engineer at a salary o' a hundred dollars a month. It wis at this time he made up his mind tae get married. Ye can see he had caution as weel as courage. There wis a girl that he had left back hame, on a farm near his feyther's, an' he noo thoct he couldna dae better than to tak' her tae the city an' let her show them there the right way tae keep hoose.

About this time a brither o' his, that had been studying tae be a lawyer, died. Oor young engineer got the idea intae his heid that he should tak' his brither's place an' represent the family at the bar. Sae, wi' his wife's consent he began tae study for the job. He warked on his locomotive at night an' went tae school in the day-time. He got what sleep he could between times, but it wisna' much. Between his regular wark an' his classes he hadna ony time tae study books, but his wife wrote oot his lessons on slips o' paper an' he wad study these in the cab o' his engine. One time he got sae interested in his wee slips that he took his train around a curve sae fast that he cam' nigh to haein' a wreck, an' the result wis that he got fired. It wisna lang after this until he became unco' shy o' cash, an' he had yet tae try his examinations before he could set up as a lawyer. The examinations were held in anither city, an' the only way he could get there wis to ride in the cabs o' the engines that travelled between that city an' New York. He made a guid mony t'ips but he made oot, as usual. It wis the auld story ower again, "ye canna keep a guid mon doon."

After his examinations had been passed the next thing he wis up against wis tae earn his livin' in New York as a lawyer, an' some that hae tried it can tell ye that this is no easy job. The first thing wis tae open a law office, an' this couldna' be done wi'oot money. Sae he went back tae the auld farm an' pit anither mortgage on it, an' wi' the cash raised in this way he made his start. The first month he made twenty-six dollars, the second month forty-six, an' the third eighty-one. It wisna lang after this that he paid off the last mortgage on the auld hamestead. His next move wis intae a larger office in a better part o' the town.

About ten years ago he went intae politics, an' although this has been the first doon-hill step for mony a mon it didna' hae ony bad effect on oor one-time farm boy. First thing he wis made magistrate, an' then county judge, an' the second time he ran for this office he wis elected by a majority o' twenty-seven thousand. It looks as though he must hae been a pretty decent chap a'richt, unless maybe the ither fellow wis a chicken-thief or somethin' o' the kind.

But the end o' the story is not yet. Last fall when the Tammany people in New York were lookin' roun for a man that they were sure wis popular in the city an' wad poll a big majority o' the votes, they picked on this country judge as the one safe bet. I dinna'

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think ower muckle o' the Tammany party, I can tell ye that, but when it comes tae pickin' a winner they ken what they're about. An' if ye want proof of it I hae only tae tell ye that their candidate, John F. Hylan, oor boy that started oot by payin' off the five-hundred-dollar mortgage on his feyther's farm, wis elected by the biggest plurality ever given tae any man that has tried for the job o' bein mayor o' the city that thinks it'sel' about the greatest combination o' money an' brains that has yet happened on the face o' this auld earth.

I mind o' askin' a tramp, one time, how a healthy lookin' chap like him came tae be beggin'. "Oh, I didna' hae any chance," says he, "Nobody ever helped me tae get a start."

World Benefactors.

Louis Pasteur.

We live in a time of great deeds. Devotion to country is universal. Acts of heroism are being performed on every hand and by all peoples. Humans of many climes are laying down their lives that the progress we have made in literature, art, science, and most of all, in freedom of thought and action may not be wiped out or buried for a hundred years beneath the burden of a Prussian dominance. On the other hand, misled millions are sacrificing all they have—life, husbands, sons, brothers, fathers—in a cause which, God grant, will soon be revealed to them as nothing short of a vicious and ambitious Hohenzollern desire. After the war is over—the carnage ended—let us not forget those great minds which through the ages have been working in the interests of a peace-loving humanity, but whose discoveries have, nevertheless, brought comfort and alleviation of pain where the wounds of battle are being inflicted by a world gone mad.

When we realize that,—

"Titles are shadows, crowns are empty things:
The good of subjects is the end of Kings."

then will dawn upon a thinking people a greater appreciation of the life and work of Louis Pasteur, the subject of this short article. In the sick room, in the laboratory, in the factory, and on the farm, we are benefiting day after day by the ceaseless energy and wonderful discoveries of a mind consecrated to the good of mankind. Louis Pasteur was the antithesis of strife or conflict. Modest and simple minded, he labored on, seeking truth in nature and science, that his countrymen and the peoples of all nations might inherit something that would do them good. "There is no greater charm," said Pasteur, "for the investigator than to make new discoveries; but his pleasure is heightened when he sees that they have a direct application to practical life."

This great French chemist was born on December 27, 1822, at Dôle, Franche-Comté, where his father conducted a tanning business. Gradually, step by step, and after much hard work, for he was considered only an ordinary student, the youthful Pasteur obtained his diplomas which admitted him to the École Normale at Paris. Strangely enough, a note was attached to his final diploma (probably by an examiner) stating that he was only "mediocre" in chemistry, but time has shown him to be one of the world's great men of that profession. He began as an assistant in the chemical laboratory of the famous college he had entered, but it was not long before he had revealed certain truths (by improved research method) that had baffled the leading chemists and physicists of his time. He was then made Professor of Chemistry at the Faculty of Science at Strasburg. He subsequently accepted a more responsible position of like character at Lille, where he developed to be the acknowledged head of the chemical profession, and from which station he was elevated to a dignified and honorable post in the École Normale in Paris.

The name of Pasteur has been made immortal through the adaptation of his scientific discoveries to ordinary life and industry. When a mother heats milk at a low temperature to make it safe for her child, she pasteurizes it, or destroys germ life, which this famous scientist proved to be the forerunner of disease. The dairymen, too, must thank Pasteur for the method of preserving milk and milk products from the ravages of bacteria or destructive organisms. It remained for him to demonstrate the causes of the various fermentations such as vinous, where alcohol is produced; acetous, where vinegar is the result, and in the lactic, where milk turns sour. Certain claims in regard to these organisms had been made, but Pasteur reduced the theories to reality and adapted the discovery to industrial possibilities. In June, 1865, he undertook to explain the cause of the epidemic of a fatal character which threatened to ruin the silk industry of France. Up to that time he had never seen a silk worm, but by September of the same year he was able to announce results that pointed to immunity from the dreaded plague. He then turned his attention to diseases of animal life, and, cognizant of the fact that malady in many cases is due to germs or bacteria, he set about to produce immunity by inoculation with a weakened or attenuated virus produced by the culture of the specific organism. The first disease investigated by Pasteur was chicken cholera, an epidemic which destroyed ten per cent. of the French fowls. He was able to reduce the death rate to one per cent. by his inoculation or immunization method. The fatal cattle scourge, known as Anthrax, next claimed his attention, and by inoculation he was able to reduce losses in the French herds from ten to less than one per cent.; a saving which the famous Huxley said was

sufficient to cover the whole cost of the war indemnity paid by France to Germany in 1870. Most interesting of all was his gift to the world symbolized in the Pasteur Institute, where Hydrophobia in men and rabies in animals is brought under control. Not only was he able to render immunity by inoculating with the attenuated or weakened virus, but by the same method he could produce remedial effects in a patient in whom the disease was developing. Thus it was that the most dreaded of human afflictions was conquered by a scientific mind consecrated to public weal. Pasteur Institutes sprang up in all countries, and still stand as a monument to a great man whose name will live when kings and princes are forgotten. The keynote of his life was sounded in the closing words of his oration at the opening of the Pasteur Institute in Paris, on the 14th of November, 1888, which were as follows:

"Two opposing laws seem to me now in contest. The one, a law of blood and death, opening out each day new modes of destruction, forces nations to be always ready for the battle. The other, a law of peace, work and health, whose only aim is to deliver man from the calamities which beset him. The one seeks violent conquests, the other the relief of mankind. The one places a single life above all victories, the other sacrifices hundreds of thousands of lives to the ambition of a single individual. The law of which we are the instruments strives even through the carnage to cure the wounds due to the law of war. Treatment by our antiseptic methods may preserve the lives of thousands of soldiers. Which of these two laws will prevail, God only knows. But of this we may be sure, that science, in obeying the law of humanity, will always labor to enlarge the frontiers of life."

Honored and revered, Louis Pasteur passed away at St. Cloud, September 28, 1895; simple-minded and affectionate as a child, he won distinction by diverting his labors and brilliant intellect to a useful end and giving to humanity a heritage which has made his name immortal.

Nature's Diary.

A. B. KLUGH, M.A.

Canada From Ocean to Ocean.—II.

If we visit a stretch of rocky shore on our Atlantic coast at low tide there are certain forms of life which are sure to attract our attention. Of these one of the most noticeable is the Starfish. We shall probably come across several species of Starfishes, differing in the number of rays or arms, in size and in color, but the most abundant, and most characteristic of the shores of the Maritime Provinces, is the Common Atlantic Starfish, (Fig. 1).



Fig. 1—Starfish.



Fig. 2—Barnacle.



Fig. 3—Shell of Polynices.



Fig. 4—Shell of Whelk.



Fig. 5—Limpet, side view.



Fig. 6—Rock Crab.

The Starfish are peculiar in many respects, differing widely in their structure and habits from the great majority of other animals. In the grooves along the under surface of their rays they have rows of "feet," which can be extended and contracted at will, and it is by extending and attaching some of these feet, and then shortening them that the Starfish creeps slowly along the bottom. In feeding most animals take food

into their stomachs, but the starfish turns its stomach inside out through its mouth, wraps it around its prey and in this manner digests it.

The Sea-Urchins, which belong to the same group as the Starfish, are usually common in the crevices of rocky ledges. The best description one can give of them is an animal shaped like a door-knob and covered with long, stiff spines. The commonest species, which has no particular common name, is green in color and about three inches across.

Nearly everywhere along the coast where the rocks are not covered with sea-weed we see the white, cone-shaped, tightly-attached Barnacles. In our illustration, Fig. 2, we show a single individual, viewed from the side, but they occur in large groups, often covering areas of considerable size. These Barnacles look much like shell-fish, but as a matter of fact they belong to the same group as the Crabs, Lobsters, etc., and in their early stages are free-swimming. Then they settle down, secrete their shell, which is composed of several plates, and live by waving minute organisms into their mouth with their curled, feathery feet, which may be seen projecting from the top of the shell in our cut.

One of the very common animals between the tide-marks is a Snail known as Polynices, by which name we have perforce to call it since it has no common name. This Snail, which is from three to four inches in diameter, feeds upon clams and other Mollusca, drilling a clean, round hole in their shells with its rasp-like tongue and sucking out the soft contents. Another very common Mollusc is the Whelk, the shell of which attains a length of three inches. This species also occurs on the coasts of the British Isles, where it is used as food. On our coast the animal is often extracted and used as bait on the trawl-lines.

A very characteristic shell-fish is the Limpet, Fig. 5. The expression to "stick tight as a Limpet" gains a new significance when we try to pull one of these molluscs off a rock. It is, in fact, practically impossible to pry them off, uninjured, with a knife-blade, unless the blade is slipped quickly under the edge of the shell before the animal has time to clamp it down. When the tide is in the Limpets wander over the rock in search of food, but before low tide they return to their original resting places.

In many places along the coast the Rock Crab is a common animal. This species, like all true Crabs is broader than long, and travels sideways. The Rock Crab rarely occurs high up on the shore but is usually found about low-tide mark.

There are, as we have already stated, hundreds of different species of animals to be found between the tide marks on our Atlantic Coast, but those which we have mentioned are the commonest and most characteristic.

(To be continued).

THE HORSE.

Diseases of the Feet—VII.

Foot Punctures—Pricks in Shoeing.

A "gathered nail" may pierce any part of the sole or frog, but is probably most frequently found in one of the commissures of the frog (the hollow between the frog and the bar on each side). If the seat of puncture in one of the commissures about half way between the heel and the point of the frog, and be deep, there is danger of the nail having penetrated the bursa of the navicular joint. While punctures are generally caused by nails, many sharp objects, as glass, iron, wood, etc., may cause them. The symptoms usually are well marked. The horse suddenly goes lame in many cases, practically progressing on three legs, but in some cases the lameness is slight, and in some cases where the nail has not penetrated sufficiently deep to pierce the sensitive parts, no lameness is caused and no suspicion of the horse having "picked or gathered a nail" exists, until the groom discovers it the next morning when cleaning out the foot. This fact impresses upon our minds the advisability of cleaning out the feet and looking for nails, stones, etc., at each grooming. In a case such as stated, the presence of the nail would be detected, and its extraction would prevent trouble, while if not noticed and extracted there would be danger of it penetrating further if the animal stepped upon a stone or other hard substance, at the seat of puncture.

Treatment.—So soon as the horse is noticed going lame, the rider or driver should dismount and carefully examine the foot. In some cases the animal may have trodden upon a nail that was somewhat firmly fixed. He suddenly lifts the foot which pulls away from the nail, but he goes lame all the same. In such a case the examiner will, of course, not see the nail, and, on account of the elasticity of the horny sole there will be no hole to mark the seat of puncture, as the opening through the sole will have closed as soon as the foot was drawn away from the nail. In some cases there will be a few drops of blood to indicate the seat of trouble, but, where this is not the case the examiner is often at a loss to know definitely what caused the lameness. In these cases the horse may or may not continue to go lame at the time. When the nail in such cases has been clean, and has not penetrated sufficiently deep to draw blood, no untoward results are likely to follow, but if foreign matter has been left in the wound, or if blood has been drawn, lameness will very probably become more evident in a few days. When the nail or other foreign substance be present it must be extracted. This can sometimes be done by the fingers, but in many cases it is too firmly fixed, and a pincers or claw-hammer is necessary to remove it. If the

examiner has not the necessary instrument of removal, he should allow the horse to stand until he can procure it, as if he drives or leads him it is probable that the nail will be forced farther in, hence aggravate matters. If no blood appears after the nail has been extracted, and the horse goes sound, it is probable that no further treatment will be necessary, but if there be blood, or if from the evident depth of puncture the sensitive parts have been wounded, further treatment will be necessary. Even though no blood should appear, if foreign matter has been introduced, or the sensitive parts wounded, pus will form and cause lameness, and an opening through the sole must be made for its escape. Hence, the seat of puncture should be carefully noted, and after the horse has reached the stable his shoe should be removed, and by the use of a shoeing-smith's knife a free opening made through the sole to allow escape of clotted blood and other foreign matter. The wound should be thoroughly washed with an antiseptic, as a five-per-cent. solution of one of the coal-tar antiseptics, or carbolic acid, and either a poultice of warm linseed meal applied or the wound filled with a dry dressing as one part iodoform to four parts boracic acid, and a boot or wrapping put on to prevent entrance of foreign matter. The writer prefers a dry dressing. The wound should be dressed in this manner twice daily until lameness disappears. In some cases a fungoid-looking bulging appears in the wound. This is simply a swelling of the sensitive sole, and will disappear as the inflammation becomes allayed, hence neither caustics nor a knife should be used. When lameness has disappeared and the discharge has ceased, the opening should be filled with hot tar and tow, a leather sole put on, to prevent entrance of foreign matter, and a shoe put on. As foot punctures of any kind are liable to be followed by tetanus (lock jaw) it is wise to get a veterinarian to give the animal an immunitive dose of anti-tetanic serum. When lameness appears after an apparently harmless puncture, the seat of puncture must be located, an opening made for the escape of pus, and the case treated as above.

Pricks or punctures in shoeing are of two kinds, viz., those actually penetrating the sensitive structures, and those where the nail, although not actually reaching the sensitive parts, is driven so near as to cause a bulging of the inner layer of the horn and pressure upon the sensitive interior, leading to inflammation and lameness, and possibly the formation of pus. Many cases of lameness follow what are known as *drawn nails*; that is, the smith, finding that the nail has gone too near, or even penetrated the sensitive parts, draws it out and drives it again less deeply. When the sensitive parts are punctured, lameness is usually noticed at once, in other cases it appears in a few days.

Treatment consists in locating and extracting the offending nail, and treating as for other punctures. To locate the seat of puncture of any kind, it is often necessary to remove the shoe, then examine all parts of the sole and frog by tapping with a hammer or pressing with pincers. When the seat of trouble is tapped or pressed upon the animal will usually evince pain by drawing the foot away. In paring and searching lame feet, care should be taken to avoid drawing blood, if possible, as this renders it more difficult to follow a spot of discoloration to its termination. When suppuration (the formation of pus) in the foot occurs from puncture or other causes, and an exit be not made through the sole, the pus burrows upwards between the sensitive and insensitive walls, and escapes at the coronet, causing what is known as quittor, which we hope to discuss in a later issue.

WHIF.

Founding a Percheron Establishment.

BY E. A. DAVENFORD.

The problems of the beginner in breeding Percheron horses are many, but most of them can be solved by putting to proper use the information which can be obtained from experienced constructive breeders. It is, however, to be much regretted that we have not more of these breeders catering to Percheron improvement, but those that we have are doing good work and a great deal more is to be done in the future. It is unfortunate for the breed that until recently the cheaper class of Percherons were more profitable to the importers and breeders than better ones. It is always so in a new country and continues so until there is a real appreciation for a higher-class horse. The time, however, is now come when the breeder of "good ones" meets with his just reward, not only in pecuniary profits but in personal satisfaction and public appreciation. Constructive Percheron establishments in Canada are now becoming more numerous. They are dotted throughout this entire prairie country, and will labor on in the production of a higher class of horse power, improving his wearing ability, his power-producing ability and his general efficiency for power production on the farm. There will be drafted from these establishments packages of good breeding which will lead to the general improvement of horse efficiency from the Rocky Mountains to the mining centres of New Ontario.

I am requested to present as best I can some information which I have derived from the mint of experience in the establishment of a Percheron stud, which information may be of value to others throughout Canada. The beginner must always bear in mind two factors which dominate and determine the merit of an establishment being formed and the success with which that establishment will inevitably meet.

These two factors are not merely associated with Percheron breeding alone, but are fundamentals in life's reproduction and apply to all animalism. First, of

supreme importance, is the foundation stock with which one begins that the possibilities of reproducing good progeny may be had; and, second, that adequate conditions for development may be presented by which the latent characteristics as transmitted may be given every opportunity of developing to their utmost. In other words, ancestral environment will determine the characteristics which are latent in the young and the present environment will determine the extent to which these characteristics will assert themselves.

Thus, to the young man starting out to own a team of high-class Percheron mares for the foundation of his establishment, I would say, start in right; however small the beginning may be, buy them sound. I would rather have one good mare and have her sound than have half a dozen and have them unsound. When you go out to buy an animal and find it a little coarse in the pasterns, turn it down—and hard at that. It matters not whether it is coarse pasterns or a coarse hock, bad eye or bad wind, they are all the same when it comes to breeding. Unsoundness will be passed on, not only for one generation but for generations. The mares should stand squarely on large, wide-heeled feet with round, heavy heads, above which are pasterns of proper slope. The size of bone may well be considered, though too much stress frequently has been placed upon this factor. It is quality, however, that counts. We want a clean, hard, flinty bone, with wide hocks, large flat knees; they should also have good ends, long, well-sprung ribs and level top lines. One of the greatest mistakes of the young breeder is in picking his mares here and there, wherever one should strike his fancy. Years later he may awaken to the fact that the diverse types or ungenial blood lines, or likely both, have foiled his attempts to produce such colts and fillies that the breed needs. With a foundation stock uniform in both pattern and ancestry one is reasonably assured that the offspring will be of the same sort.

While we may have a good foundation of mares, although it may be small in the beginning, our entire efforts in getting this foundation may be entirely wrecked when we come to purchase a stallion, provided he is not a suitable one for the production of high-quality offspring. The sire is one-half of the entire establishment when it comes to progeny, and his selection is most important, upon which will depend more than any other single individual the ultimate success that may be attained. The general considerations in his selection are very much the same as for the mares, in addition to which he should be stronger and more masculine in appearance, especially in head and neck and as well as being a little more upstanding. It is a practice among farmers who get around them eight or ten pure-bred mares, to purchase two-year-old stallions of good growth and type. This system is commendable, as two-year-old stallions can be purchased from \$600 to \$800, and soon grow into horses worth \$1,000 to \$1,200. He can obtain them at a lower figure, and if he owns a stallion he usually gets more of his mares in foal than by patronizing one traveling in the district. But in the selection of him, as with the mares, the utmost consideration must be given, not only to his individual type alone, but the beginner should also desire to see the sire and the dam that he may know whether or not the stallion gives reasonable assurance of transmitting the type desired. Although he may be individually of fairly good merit, yet, if his parents do not measure up, if they are of poor quality in limb or in top, then there is no definite assurance that this stallion about to be purchased will transmit anything better than the parents from which he came.

With this foundation set on a firm basis, with the possibilities made reasonably sure of obtaining progeny bearing in it latent characteristics for the production of high-class horses, thenceforth the ultimate product will depend upon the environment which it is surrounded with.

It is well known that at times environment is more powerful than heredity. If you take a high-class sample of wheat that has been developed through several years of selection and breeding, and plant it in poor soil and indifferently cultivate it, the results in two or three years you will know. Take a pure-bred cow, rich in the best blood for several generations, and shelter her on the sunshiny side of a barbed-wire fence, give her poor feed and treat her offspring in the same way, and the results you will know. Likewise, if offspring of strong quality, pure-bred Percherons be given inferior environment in the way of climatic conditions, feed conditions, etc., we cannot expect anything but inferior development, and the very purposes of good foundation stock are largely defeated.

We are fortunate in Canada that our climatic conditions are favorable for the production of healthy horses, that our soil conditions are such that the feed grown is wholesome and nourishing for the construction of a strong, perfect, enduring frame. The atmosphere is bright, bracing and pure, with the oxygen required for lung development and blood building, while abundant sunlight benefits animals and plants alike. For the development of dense, flinty bone of sufficient calibre, mineral matters must abound in the food and drink of horses. Without these requisites of nourishment imperfect animals will be produced. Canada, in regard to these requirements, is eminently adapted for the breeding and rearing of horses of the highest type and quality. Her soils are rich in mineral matters; her drinking water is strongly impregnated with minerals; her feeds are both rich in protein and earthy materials, and especially fitted for perfect frame building. We can at all times supply our horses with nutritious feed from never-failing stores.

Of the commercial foods bran is proving to be of particular value in the feeding of horses, as it furnishes

materials for the development of strong bone, dense tendons, tough hoofs and powerful muscle, the essentials for which the Canadian horses are already famed. If all the requirements for perfect development of frame exist, it may be taken that vim, vigor, hardy constitutions and staying power will be the natural legacy of the horses there bred.

It may be, therefore, stated with confidence that the Canadian environment favors these desirable qualities, which are less perfectly developed in districts where the climate is hotter and consequently less bracing, and where the character of the soil is better adapted for the production of corn and other food materials more or less deficient in frame building ingredients. We can almost better than other sections produce draft horses of ideal quality and development as regards frame, vigor, stamina, constitution, action, docility and durability. There are no more important or necessary requirements than these in the horse that works hard in the city or upon the farm.

Thus, with suitable foundation stock and with suitable natural conditions for development, the successful production of a high-class horse lies within the grip of the breeder who is producing them. If these nourishing feeds are adequately supplied for the full development of the animals bred, and sufficient exercise be allowed, there need be little fear in regard to the ultimate product. We have been able by a system of starting with a few good mares, retaining the best of them, and the long-continued use of good sires, and through good environment, natural and otherwise, to produce a band of mares that are of good type, excellent in set of legs, good feet and real producers of rugged, drafty colts, which have found ready sale before they were two years of age.

I am satisfied that the tendency to breed regularly and the tendency to prolificacy is as certainly transmitted as color or type. The size of the brood mares is also of importance, the mare weighing 1,700 to 1,800 pounds being a draft mare that may be expected to give a good account of herself, both at work and in the stud. There is a general demand for ton mares; there are many such mares that are quick in their movements and handy at work on the farm; they make good mothers and are regular breeders. However, they are the exception among those of their size; size can be best obtained in the offspring through the selection of the sires and through the kind, quality and quantity of the feed given the colts.

Our aim is to have the mares do most of the work, as well as to produce foals, and those that are given moderate work with plenty of clean, nourishing feed, usually produce healthy foals, and with proper cleanliness and disinfection the loss is very small. One can save more foals if they do not come too early in the spring, and the mares are much more apt to become pregnant if bred after the grass is good and they have begun to gain on pasture.

The feed and care of foals after weaning is about as important as the selection of the sire and dam. They should be weaned at five or six months of age, having had grain prior to weaning. After weaning they should have the run of a yard, and be fed liberally on grain. It is next to impossible to over-feed a colt that is getting plenty of exercise. The word exercise, which is a simple one the meaning of which a great many farmers hardly sufficiently appreciate, should be strong in the mind of every breeder of Percherons.

There are more good individuals among the mares than among the stallions. This is not a fault of the breed, but as Percherons are nearly all good feeders, a good many of the stallions are ruined by too much feeding and not enough exercise, whereas the mares and fillies are put to work or have the run of a pasture and develop soundly.

There should be more good sires used, as farmers fail to realize the difference in the result of using the first-class stallion to that of a second or third-class. It is a fact that an inferior stallion will get more patronage than a good one if they stand for a few dollars less service fee. The average farmer fails to realize that \$5.00 in service fees often means \$50.00 to \$100.00 difference in the price of the horse at maturity, and sometimes even more. A good horse eats no more than an inferior one. There is also a tendency among some farmers to sell their best mares and keep those they cannot dispose of. There is no hope for them even if they do patronize good sires.

The formation of horse breeding associations in the townships throughout the country would do much to advance the progress of the horse-breeding industry. Such associations should be formed of breeders who possess the same class or breed of horses and who will pledge themselves by legitimate means to further the interests of the association and the breed handled. It would be the work of such an association to protect the interests of its members, provide suitable stallions each year for use, advertise stock, attract buyers, hold sales, make exhibits at the fairs, hold meetings for discussion of horse-breeding matters and educate the locality to better methods of breeding, feeding and development of marketable horses. Township associations might affiliate with the breed organizations through delegates to represent them at the annual meetings of the horse breeders' associations. Were such associations formed in each horse-breeding centre throughout the country, and were each of them to practice and preach the same doctrine of breeding, the use of the scrub-bred, cross-bred and unsound stallions would soon be a thing of the past, while better mares would be used for breeding purposes, with the inevitable result of general improvement in the quality of our horses and profits to be reaped from the business.

If started right there never was a more opportune

time for Percheron breeding; several Percheron studs have been recently established in England, and Japan has just recently purchased Percherons for crossing on their native horses. There seems to be something about the Percheron that is highly adaptable to all climates and conditions. He has made many friends on the battle front, and there are three times as many Percherons in the United States as any other draft breed, and they are steadily increasing in number in Western Canada. That the Percheron enjoys its present popularity must be attributed to its suitability to the desires and needs of the people.

In my selling experiences I have made it a practice never to let a buyer go away if he offers me a reasonable price. Here is where many of our small breeders make a mistake; they ask such unreasonable figures that the dealer cannot buy; the small breeder is not well enough known to sell at retail and often holds his stock long enough past the right selling time that the food bill eats up the profits. A satisfied buyer is one of the best advertisers a breeder can have.

LIVE STOCK.

A Constructive Hereford Policy.

BY WARREN J. MCCRAY.

I have been asked to write a short article on "Methods of Breeding and Management Employed in Building up a Pure-bred Herd."

I do not know that I have anything to offer that is particularly new upon this interesting subject, but I am perfectly willing to tell of the methods which have brought success to the breeding establishment of Orchard Lake Stock Farm, and to assure your readers that what has been done there can be done any place where the same principles are put into practice.

From the very beginning I recognized the value of good blood lines, combined with the essential requisite of good individuality as being the corner-stone of every successful herd, and it was upon this sure and stable foundation that the celebrated Orchard Lake herd was built.

For the organization of the herd, I selected blood lines that were popular and recognized as the leading strains in the Hereford family. I had an early appreciation of the fact that the selection of the bull to head the herd is the prime factor entering into and determining the success or failure of every breeding enterprise.

Having determined on my course, I began to look for the bull that was siring the best calves of the breed. In my investigations I concluded that among all the good bulls in the country Perfection Fairfax, then five years old, was siring the most uniform and pleasing calves that had come under my observation after a complete and exhaustive survey of the different herds. I immediately opened negotiations to purchase this bull, but found that in order to possess him I would have to purchase the entire herd. This was in 1908, and at that time the cattle business of the entire country, both pure-bred and market, was at a low ebb, and the price I paid for the herd was considered by many as being exceedingly high.

Some time after the deal was consummated, I was visited by a prominent Hereford breeder who offered me \$8,000 for the bull, and I confess it took a lot of nerve and an abundant faith in the future of the pure-bred Hereford business to refuse this offer, as this amount would by comparison be equal to \$30,000 at the present time under existing conditions.

Subsequent events, however, have justified my faith and demonstrated the fact that the value of a good sire, in a herd of well-bred matrons, can hardly be estimated. The records disclose the astounding facts that since that time I have sold more than \$200,000 worth of the sons and daughters of this famous bull, and have at this time on the farm over fifty head.

Another thing of equal importance in constructing a good herd of cattle is the manner in which the herd is handled. It is the gravest kind of a mistake to expect the blood lines to do it all. Blood lines are essential, but it is also as equally essential that the herd receive the best of care. I do not mean by this they should be pampered and housed and fed beyond their actual requirements but they should have what they need to keep them in good, thrifty breeding condition. Especial care should be given them at the breeding season to see that each cow produces a calf, and every calf should be saved.

I like to think of my herd as a manufacturing plant, organized in the most efficient manner possible to produce maximum results. Each cow should be considered a unit of the producing machinery of the plant, and if she fails to produce you should ascertain the reason. If her

usefulness cannot be restored, she should be condemned and banished from the herd.

Young stock should receive the most thoughtful care. Their destiny depends in a very large degree upon their care and development during the first eighteen months of their life. One dollar's worth of feed during this period will produce greater results than it ever will again, and will determine the future size and quality of your breeding matrons. See to it that the youngsters are always in condition to do their best. They should be out in the open each day and permitted to get the exercise and fresh air so necessary in developing constitution and vitality. The herd should be handled carefully, prudently and with judgment. A mistake most commonly made is that they are not supplied with enough feed. Too many breeders try to carry too many cattle on their pastures, as well as being too niggardly with feed during the proper feeding period. The Hereford breed, as a class, has been improved during the past few years so carefully and so systematically that there is little more to be done toward making them the perfect beef animal. There has been such marked improvement in the character, the levelness, and quarters, and at the same time all the good qualities have been preserved and developed, until to-day the modern Hereford embodies all that could be expected or desired in a perfect type of beef animal.

College Work in Keeping With the Times.

Down at the Iowa State College of Agriculture a building has been erected where the students will see slaughtered the animals upon which they have passed judgment in their class work. In the majority of cases colleges provide judging pavilions where the students are shown what to look for as exterior evidence of a good carcass, and they must take the instructor's word for it that what lies beneath the skin is as he describes it. The carcass is the finality of all live stock judging, and no better way can be devised whereby the student will be made acquainted with the relationship that exists between the outside and the inside of the animal than by following it to the block. We have judges of

benefit, for the lack of reliable herdsmen is one of the greatest drawbacks to the industry. There are plenty of men, with capital and equipment, ready to establish herds and flocks if they could engage a man with whom they could trust a heavy expenditure in the form of pure-bred animals. Trained and qualified herdsmen would find ready and remunerative employment.

Constructive Shorthorn Breeding.

BY DEAN C. F. CURTISS.

The outlook for pure-bred stock interests is highly promising. The conditions never looked better for conservative and constructive breeding. There are comparatively few Shorthorn herds in any country that have been maintained for a long period of years under a definite constructive policy. Such herds, where the policy is sound, and the management right, are the ones that make history and establish standards for the breed. To build up a good herd of Shorthorns is the work not of a few years, but of many years. Men of unlimited means often engage in the breeding of pure-bred stock, and they are of material service to the cause of better stock and better agriculture. Many very superior collections of cattle are brought together in this way. Some of these herds are magnificent in individual excellence, and such a herd when headed by one or more good sires will produce cattle of outstanding excellence.

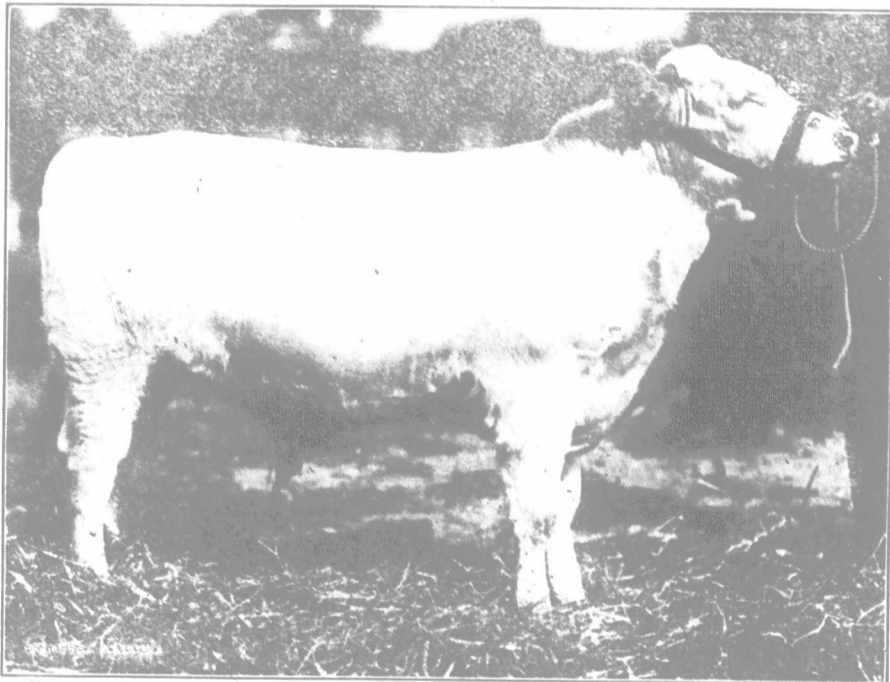
To undertake to put together in a year or two a strictly high-class breeding herd, even at unlimited expense, is a herculean task. Such a task would tax the genius of the best and most experienced breeders of the world, and it is extremely doubtful if there are many who would succeed. The really great herds are not made in that way. On the whole it is fortunate that they are not. There is always cause for genuine regret at the dispersal of a leading herd that has been built up by years of patient, intelligent work. Such a herd loses much of its potency if divided and broken up, even though it goes into another good herd.

The best herds, those that in the end carry the greatest prestige and exert the greatest influence for breed improvement, are not put together—they are grown or built up by constructive process of breeding and selection. In many cases they come from a limited beginning with a few high-class animals mated with a good sire, and their offspring with other good sires, the breeder having constantly in mind a definite type and standard in such a way that the animals constituting the herd are always a little better than those that preceded them, particularly the sires. And this is not all. Very few good herds have been built up by introducing a new strain of blood every time a new sire is wanted, or by adding practically all of the known or leading strains through the females constituting the herd. A breeder may not seek to create new families. He may better take the best that he can find and strive to improve them in such a way that the stock coming from his herd will carry an added distinction and value. A herd built up in this way without too much in-breeding on one hand or too much infusion of deteriorating blood on the other hand, has greater potency and power for improvement of other herds than any herd made on the put-together plan can ever possess. An old herd made or maintained by the put-together plan is no better than a new one made by the same process.

The great herds of all kinds of stock are made first by the bringing together and second by the concentration of the best lines of blood of the breed. There must first be the purpose—the ideal—the discriminating judgment to select the right ideal, and a high standard of excellence; then the tenacity and adherence to that purpose and ideal, and concentration of good blood until the standard is firmly established. Results do not come quickly by this method, but when attained they are more enduring and of more service to the breed and to the breeder.

A Note Re "The Shepherd's Calendar."

On another page are set down the salient points in sheep husbandry in calendar form, in order to provide a guide for the months which follow. Many shepherds, who are experts in time of trouble or emergency, do not look ahead and provide for droughts and unfavorable conditions that only too frequently affect the flock adversely, in spite of anything the shepherd can do. The sheep raiser has many duties and they are distributed over the year so almost every month has its own special activities. The lambing season, shearing, dipping, wool sales, lamb feeding and other lines must be attended to in order to maintain the revenue from the flock, and only as the producer of wool and mutton looks ahead and makes adequate provision for all these items can he depend on success. Sheep will get along with little care, but it is the flock which is tended by a real shepherd that shows the greatest profit. "The Shepherd's Calendar" does not go into details. Its object is to mention the most important operations only, so the farmer can be prepared to meet any situation that arises, and in a manner quite in keeping with good sheep husbandry. Save the Calendar and read each section, as the particular month comes around with which it deals.



Sultan's Royal.

First-prize junior Shorthorn bull calf and junior champion at Toronto and London. Exhibited by John Gardhouse & Sons, Weston, Ont.

breeds; we have judges of fat bullocks, wethers and hogs, and we have carcass judges. Naturally we would expect them to agree pretty closely in their ideals, for a first-prize, finished bullock, for instance, would, to demonstrate the wisdom of the judge, also hang up the best carcass. This does not always happen, nor does it happen frequently enough to establish a genuine confidence in the present system of making awards. Of course, the bullock, wether or fat-hog judge must take type into consideration more or less, and he must give some thought to the appearance of the animal in regard to the remuneration he might return to his feeder. On the other hand, the carcass judge has only one consideration—is it a good or a poor carcass? He has to look neither backward nor forward; he is concerned only with the present and with what is before him. Herein lies the source of slight difference between the decisions of the various judges of the animal on its way to the block. Any system of education that will enable men to visualize and draw a mental picture of the animal in the stall and later in the slaughter-house is worth inaugurating for it will help exhibitions and, through them, the live-stock industry.

The Iowa State College is also outlining a course that will help young men to qualify as competent and reliable herdsmen. Some may say that the hard school of experience is the best teacher in this line, but a large stock of many breeds is kept at Ames and a student can acquire an experience there in a short time that would entail years of apprenticeship around the farm of an ordinary breeder. In turning out men competent to handle large herds or flocks any college in Canada or the United States would be doing the country a great

The Shepherd's Calendar.

January.

Start the new year by feeding the flock well and in such a way that the wool will be kept clean. Provide fresh water daily and salt that they may eat at will. The winter lamb for the early market requires special attention, and the ewe must be made to milk well under conditions not naturally conducive to lactation in sheep. This industry, however, is not extensive. When finishing lambs or wethers for the block, do not plan to exceed 1 1/4 pounds of grain per lamb per day at the finish, and it is seldom profitable to feed more than 5 pounds of succulent roughage, and 3 to 5 pounds of dry roughage per head per day at any time during the finishing period. As dry roughage, alfalfa comes first; good clover second, and fine mixed hay next. For succulence, silage is good and the turnip is the safest of the roots, especially for wether or ram lambs. A mixture of oats, barley and feed wheat excels as a grain ration. The feeders must be kept cool. In the absence of succulent roughage, add a little bran, and, near the finish, a little oil-cake meal is splendid. Corn is excellent for short-feds but hard to obtain this winter.

February.

As spring approaches, the breeding flock must be well tended. To insure clean wool, use the combination or slatted rack that does not permit the straw and chaff to fall on the necks of the sheep, and, furthermore, do not carry forkfuls of hay or straw over them in the yard. The rack should provide from 15 to 24 inches of feeding space per head. Well-lighted and properly-ventilated shelter or pens should be provided, allowing not less than 10 to 15 square feet of ground space per head. Do not mistake drafts for ventilation. An outside yard is also essential. There is no one grain better for sheep than oats and 1/2 lb. per ewe per day is ordinarily sufficient, when the roughage is of good quality. Some succulent feed is necessary and not more than 2 lbs. of roots or silage per head per day is ample. Never feed frozen silage to sheep, and the Canadian product this year is not likely to be any too good, as a general thing. Clover and alfalfa hay are both superior to timothy as a roughage. They should have what they will clean up nicely. Provide fresh water daily and make provision for plenty of exercise.

March.

The month of March brings the flock near to the lambing season. See that all doors and gates through which the sheep pass are large, in order to prevent injury to the pregnant ewes. Keep all strange dogs away and allow nothing to enter the pens that may excite the flock. Handle them quietly and frequently so as to gain their confidence. Early-lambing ewes should have separate pens, somewhat warmer than the winter quarters, until the lamb is strong; they may then be returned to the flock with safety. A little bran with the grain at and before lambing time is a good conditioner, and the mother should be fed lightly for a few days after weaning. Too many roots prior to lambing are thought to produce large, flabby lambs. If lambs are expected during March, the shepherd should maintain a close watch and be prepared to lend assistance in cases of difficult parturition. When the presentation is normal the muzzle appears foremost with a foot on each side of it. Do not interfere too hastily and if the attendant is not trained in such work, expert help should be summoned. There are several means of restoring a lamb.

April.

Under Canadian conditions the largest percentage of lambs come in April, but in some districts May is the more popular month. The attendant in charge of a large flock must do a great deal of "watchful waiting" and always be ready when needed, for the crop depends considerably on how expert the shepherd is in resuscitating weak lambs and causing the dam to mother her offspring in cases where she is not inclined to do so. Clip the wool from the ewe's flank and udder so the lamb will have no trouble to get at the milk supply. This is more safely done soon after the young is delivered, for the pregnant ewe is likely to struggle and injure herself. The fresh ewe should have water with the chill off; nutritious roughage, such as clover or alfalfa hay, but very little grain for a few days. A small ration of bran is very suitable at this time. Ram lambs, not to be kept for sires should be castrated when two weeks old, and the entire lamb crop should be docked. Ewes should be docked when 8 to 14 days old, and the rams 5 to 7 days after castration. Some shearing is usually done late in April.

May.

Grain fed to young lambs returns a handsome profit. Construct a "creep" through which the sheep cannot pass, and in the small enclosure have a trough where the youngsters can be fed a mixture of ground oats, bran, oil meal and corn meal. Never put more in the trough than what they will clean up easily at one time. When docking May or June lambs watch them closely for blow-fly. Don't shear sheep when the wool is damp. Prepare a clean shearing floor and tie the fleece neatly without allowing it to pick up foreign matter. Never tie the fleece with binder twine or store it in a damp place, for such treatment simply means a reduction of price in a very valuable product. Prior to shearing do not allow the flock to run in the orchard or fields where burdocks are standing, as these get into the wool and decrease its value. Make early preparations to dip the sheep and lambs. This is one of the most important operations in sheep husbandry. There are many good dips on the market, and a tank can be purchased or easily constructed at home. Turn the flock to pasture free of all disease and vermin.

June.

In June the flock is luxuriating on pasture and the sheep raiser has little concern except to watch against the pestiferous cur and to see that the fences are tight. Buyers usually begin to bid for wool in June, so it is necessary to study the wool market and be prepared to dispose of the clip to the very best advantage. The co-operative grading and selling scheme is now well developed in every province of Canada, and those in charge will, on request, keep sheep raisers posted as to the proper method of caring for their wool and consigning it to the grading depot. Dirty wool, moisture, and binder twine, all mean a low grade and a corresponding price from the dealer or through the co-operative system. The manufacturers get the clip eventually and they discriminate between grades, so the producer must depend on receiving no more than his wool is worth from the local buyer or through the grading organization. What the price of wool will be in June and July, 1918, is not well known, but it is sure to be high enough to warrant the wool producer taking the very best care of it. Good wool is a valuable asset now.

July.

It is time early in July to prepare for the fall feeding of lambs and ewes. Many shepherds rely on rape for flushing the breeding flock and putting weight on the late lambs. Prepare a field the first week in July and sow at the rate of 6 or 7 pounds broadcast per acre. This rate of seeding will give a finer crop, more suitable for sheep, than a thinner seeding. The drill method of growing rape is not to be recommended for sheep and lambs, as they frequently get on their backs between the drills and die before being discovered in their distress. A good aftergrowth of clover will serve the same purpose, but the rape is so useful for all classes of live stock that it pays well to have a field of it for fall use. A large quantity of the clip is moved in July so it is necessary to keep in touch with the trade if the wool is not sold, and interesting to do so if it is. Some extra-early lambs may be lifted during the month, and if so it may become necessary to corral the flock occasionally and milk out the udders of the ewes whose lambs have been taken.

August.

The month of August very often sees dry weather and burned-up pastures. It frequently becomes necessary then to change the flock from one field to another in order to prevent loss in weight. Before making such changes the field to which they are to be turned should be made ready in regard to fences, and the weeds that are likely to lodge in the fleece should be cut. We have in mind particularly the Blue Bur, or Stickseed, which is often seen standing in grain stubble after harvest. The seeds of this pernicious plant adhere readily to the wool and are much detested by sheepmen. These weeds should be cut before exposing the flock to them. Smearing the nose of the sheep in July and August often prevents trouble. Watch also for the work of the blow-fly. The water supply must be looked to constantly in dry weather in order that the flock may never be without it. Salt, too, is essential in summer as well as winter. It may become necessary or expedient towards the last of August to turn on to the rape field and here caution is essential. Towards the end of the month, it may be necessary to separate the ram lambs.

September.

The activities of the sheep raiser in September are directed chiefly towards weaning the lambs, getting them ready for market, and preparing the breeding ewes for the mating season which soon follows. In many cases the lambs are not weaned until marketed, but a lamb 4 months old and well developed might as well look after himself as harass his dam to little or no purpose. Put the youngsters on a field of second-growth clover and feed them a little grain to which they will have become accustomed in the lamb-creep. If the sheep and lambs are separated beyond hearing distance it will be so much the better. Scant forage will do the ewes for a few days after weaning, and even then it may be necessary to milk out their udders once or twice. After the flock is back to normal again "flushing" should begin. This consists simply in building them up physically and having them in a gaining condition when mating. This practice ensures a large lamb crop. If they are not already accustomed to the fresh rape or green clover allow them to fill up on dry forage and then turn in for an hour or two at first.

October.

The period of gestation for the ewe is, roughly, 5 months or around 145 to 147 days. Breeders who desire early lambs release the ram in October, which brings the lambing season in March. This is considered altogether too early by some, and there is not a small percentage of good sheep raisers who prefer to have the lambs come in May after the flock has been some little time on grass. There is little loss then and less trouble. In any case, the flock header should be selected early in the month and gotten into condition. Do not tie him up in a stall or corner of the barn floor. If allowed the run of a small field where he can exercise, he will be strong and vigorous and his lambs will be robust. Pampering and over-feeding is to be guarded against, but this is not a common error. Rams are more likely to be under-fed and poorly exercised. A grain ration of oats and bran is excellent and it will maintain his virility throughout the breeding season. If the grazing is poor and no special crop is available for forage, the ewe flock would benefit from a light grain ration. Dip the flock again in late October or early November.

November.

A ram will prove a better sire if he does not run with the ewes continuously at breeding time. The common practice is to turn the ram with the flock at night or for a couple of hours in the cool of the morning and evening. Smear his breast well back between the forelegs with a mixture of oil and lampblack or other coloring matter, so as to identify the ewes with which he has mated. An English proverb says: "The more rams the more lambs," but an active yearling or two-year-old ram will serve 50 to 75 ewes successfully, if handled properly. Rams and wethers should not be fed roots, especially mangels, as they sometimes create urinary troubles. Lambs almost ready for the market could probably be helped along with some corn and bran; oats and peas are also very good. The wethers and ram lambs for winter feeding should be put on a grain ration and nutritious roughage. If the flock was not dipped in October, take advantage of a mild spell early in November to perform this good act. It will be doubly repaid in the thrift of the flock as well as in the quantity and quality of the wool.

December.

The flock usually goes into winter quarters during the last month in the year, and thorough preparations should be made for them. If the flock is large it should be divided into groups according to age, for it seldom pays to run more than 50 together. Clean the pens thoroughly and make ample provision for light and ventilation. A building opening towards the south with the front doors in two sections (upper and lower) is most suitable. The upper section can be left open, admitting light and air, except in case of stormy weather. Bright, nutritious alfalfa or clover hay should be set aside for the flock; there is no place it will pay better. This and a small quantity of roots make a very good ration. Some shepherds always feed some oats or peas with bran, but they do not allow the ewes to become too fleshy. They should only be thrifty and in good condition. Too many roots are likely to produce large, flabby lambs, so roots must be fed in moderate quantities. A combination of roots and grain is excellent. Fresh water daily and salt at all times are necessary to thrift. The salt should be placed in a box where they can get it at will.

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Crop country, arable soil which in an ideal climate that soil an equal and crop more give it will of farm manure its virgin phosphorus on by the nothing in some. The four many fa its crop gone and returns unfortun robbed generati owners future s on the fo

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THE FARM.

Check the Loss of Plant Food in Farmyard Manure.

Crop production and, incidentally, the wealth of a country, depends to a large extent on the fertility of the arable acres. There are a number of ingredients in the soil which are essential to plant growth; without them in an available form, crop yields decrease even under ideal climatic conditions. It is reasonable to suppose that soils of like nature contained in their virgin state an equal amount of the elements which feed the plants and crops. Why is it then that after a half century or more of cultivation and cropping, one farm will give double the returns that the one adjoining it will yield? Is it not due largely to the methods of farming employed and to the care of the farmyard manure? The soil contained, when broken out of its virgin state, a large deposit of nitrates, potash, phosphates, calcium, etc. These substances were drawn on by the crops and if these were sold off the farm and nothing returned the deposit gradually decreased and in some instances was reduced to a negligible quantity. The foundation of crop production has been removed from many farms in bags and bales. The land remains but its crop producing properties are to a certain extent gone and the farm which once was capable of giving fair returns now yields but a pittance to its owner. It is unfortunate for the present generation that the soil was robbed in the past, but it is a crime against the future generations if in the light of the present age the land owners permit the fertility of the farms to wane. The future success of the country depends to a large extent on the fertility of the soil.

There are many farms on which the deposit of plant food has been increased instead of decreased by a judicious system of cropping, and the marketing of the crops in the form of live stock. Then, too, the value of farm-yard manure was realized and methods of handling it were practiced which prevented loss by leaching. But, judging from the location of some manure piles, there are those to-day who do not realize the cash value of the plant food contained in the excreta and urine and absorbents used in the stables. Experiments and investigations go to show that the plant food in the excreta of the stock kept on the average one-hundred-acre farm is worth several hundreds of dollars. Yet, in many instances no effort is taken to conserve this fertilizer and to apply it in a way or at a time when it will do most good. By piling manure under the eaves or where it will leach, thousands of tons of nitrates and potash are drained away yearly and lost to the soil.

The excreta of the various classes of animals differs considerably in composition and value, but a ton of mixed manure will average around 10 pounds of nitrogen, 10 pounds of potash, and 5 pounds of phosphoric acid. Thus, at present prices of these essential plant foods, the value of farm-yard manure can be estimated. In order to get the best results it is desirable that the manures from the different classes of animals be mixed. The liquid should not be allowed to leach, as it contains a higher percentage of plant food in a more available form than is found in the solids. It is claimed that about half of the nitrogen and two-thirds of the potash voided by bovines is in the urine, and yet on very few farms is there an effort made to get this liquid to the land; too often it soaks through the floor of the stable or seeps from the yard and escapes in the drains where it is lost to the farm. Plant food may be applied to the soil in the form of commercial fertilizers, but that is no reason for permitting farm-yard manure to waste.

In Bulletin 206 of the Vermont Agricultural Experiment Station, R. T. Burdick, of the College staff, throws light on the value of farm manure and presents ways and means of handling it so as to have the least loss of plant food. The following are excerpts from the bulletin: "It is generally realized that when highly nitrogenous feeds are fed the manure contains more plant food than if the stock are fed on straw, timothy hay, etc. A large percentage of the fertilizer constituents contained in feeds like cottonseed, linseed, etc., are returned in the manure after the animal has made use of them. The age of the animal affects the amount of plant food consumed in the ration which is recovered in the manure. A mature animal, for example a ten-year-old work horse, uses its food simply to maintain body weight. If it increases in weight the gain is usually fat only, and fat contains neither nitrogen, phosphoric acid nor potash. Hence it is that practically all of the plant food a mature animal consumes is excreted in the urine and feces. One may count on getting almost 100 per cent. On the other hand, young and growing animals build much of the phosphoric acid and nitrogen into their bones, muscles and other tissues, while milk cows utilize a considerable proportion in milk production. However, it should be said that individual animals vary as to their ability to use food. Some are better able than others to assimilate it. It is safe to assume that from 50 to 75 per cent. of the plant food which is present in the ration is voided by growing animals and by milk cows, from 85 to 95 per cent. by fattening animals, and from 95 to 100 per cent. by work animals." The author of the Bulletin explains the effect of bedding as follows: "The nature of the bedding or litter affects the agricultural value and composition of farm manure. Bedding is used for several purposes—to increase the bulk of the manure, to augment the bodily comfort of the animals, to absorb and retain the urine, to furnish humus and plant food. It tends to retard over-rapid fermentation and to prevent loss and is itself bettered for manurial purposes by its admixture with the feces and urine,

Straw makes manure more bulky and contains about as much plant food as does average manure. While this is not as available as is the plant food naturally present in the excreta which has become broken down by the processes of digestion, it soon decomposes in the soil. Sawdust and shavings rot much more slowly and are less bulky than is straw and they contain considerably less plant food. In case straw is abundant, it may, all things considered, be preferred to sawdust; yet on the other hand it cannot be too strongly insisted that sawdust and shavings do not injuriously affect the land. They out-class straw in one important respect, namely, their absorbent powers. One hundred pounds of oat straw absorbs 285 pounds of water, whereas 100 pounds of sawdust absorbs 435 pounds, being half as good again an absorbent. Nine pounds of straw or six of sawdust or shavings are needed to absorb a cow's 24-hour voidings. However, if enough bedding were used to entirely absorb the urine, the manure would be too dry and bulky. On this account, as well as for the reason that the cattle are out of the barn more or less, from four to five pounds straw and from two to three pounds sawdust or shavings would seem to be a fair daily allowance, varying according to the season. . . . If the animals stand on tight concrete floors and a tight storage pit is available, considerable liquid manure can be handled without absorption, and in that condition tends to keep the pit pile moist. It is seldom worth while to store the urine separately in a cistern, for the reason that special apparatus is needed wherewith to spread it and that the solid manure is apt to become too dry and to fire-fang."

It is rather difficult to calculate the monetary value of farm-yard manure as it benefits the soil in other ways than adding plant food only. It is well known that it increases the humus which improves the physical structure of the soil, and increases the micro-organisms. The latter two cannot very well be valued in dollars and cents. The bacteria in the soil must have organic matter to feed upon and it is believed that they aid in making plant food available. From a straight fertilizer standpoint farm manure should be worth from two to three dollars per ton with the present price of mineral fertilizers the value may be placed higher. The benefit which the soil derives from an application of manure depends a good deal on the care and method of handling it.

The loss of fertilizing constituents commences in the stable and it is a serious one where the stable floor is of lumber. Mr. Burdick says: "Some farmers seem to prefer loose planks. Indeed, they sometimes bore auger holes through the floor in order to help out the openings between the boards. This procedure tends to keep the floor free from much liquid and enables one to economize on bedding. But, at what a cost! Fifty-one per cent. of the nitrogen! Eighty-five per cent. of the potash! A 1,000-pound cow produces yearly about 80 pounds of nitrogen in the liquid as compared with 76 pounds in the solid manure, 38 pounds of phosphoric acid in the solid and none in liquid manure and 108 pounds of potash in the liquid as compared with 19 in the solid manure. The number of days and nights which she spends in the stable determines the proportion of this amount which can be saved. If she lives seven months in the stable she voids about 47 pounds of nitrogen and 63 pounds of potash in the urine during that time, nitrogen and potash which are better and more serviceable than the same ingredients in the feces, for the reason that they are soluble. These urinary voidings are worth several dollars per cow per year."

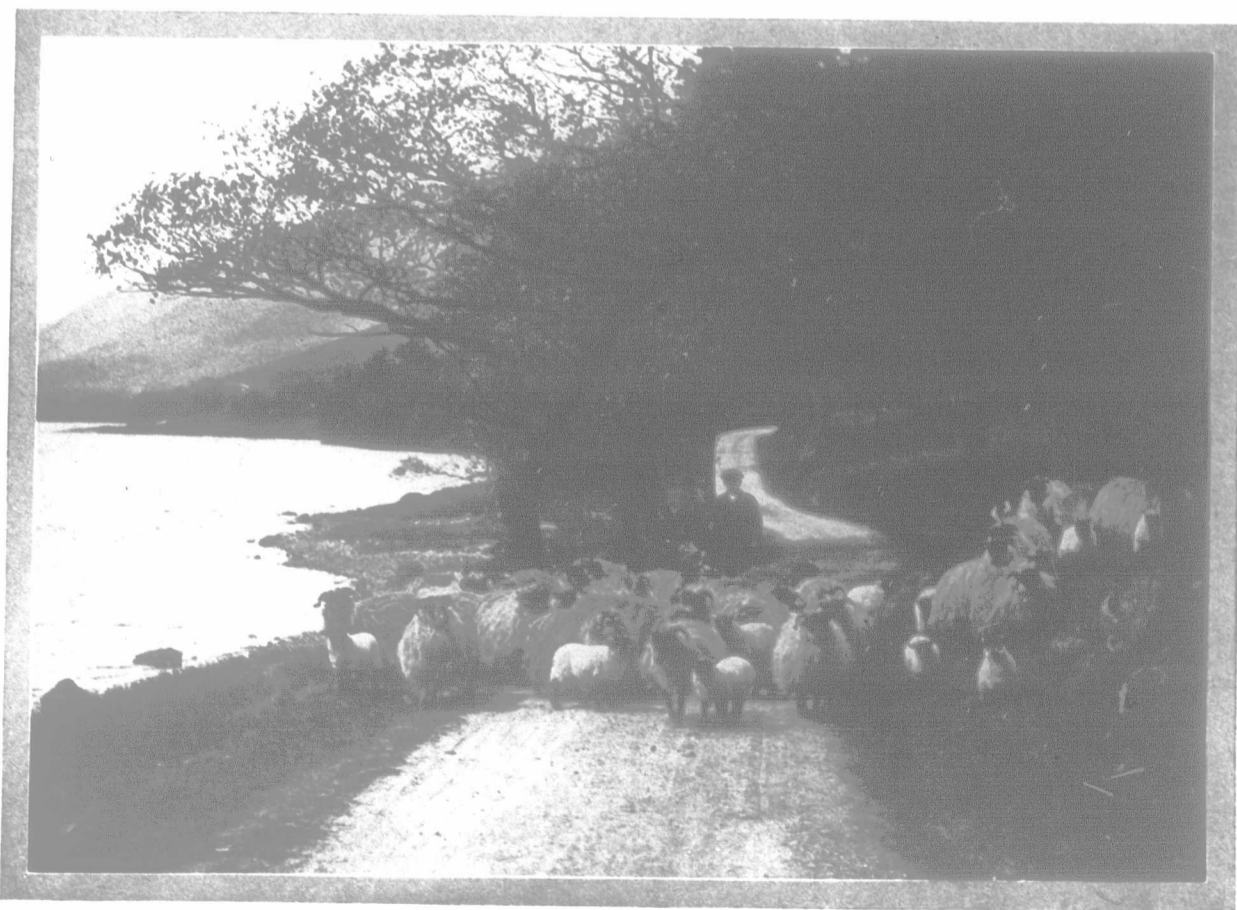
If this liquid is allowed to seep away it means a heavy monetary loss for a herd of even 10 animals,

a loss which can largely be avoided, and its use on the soil will tend to increase the crop yields which permit of more stock being kept to add more fertility to the soil. The use of concrete gutters and more bedding aid in preventing this loss. But, even taking precautions in the stable is not enough; there is loss by leaching in the yard and field. If exposed to the weather, a considerable amount of the plant food may be washed out and escape in the ditch or drain where it cannot be of use in growing larger crops. As much as two-thirds of the plant food of a manure pile has been lost in this manner. "Voorhees exposed several 100-pound lots of mixed solid and liquid cow manure in a box eight inches deep with screened perforated bottom. One lot exposed 70 days (February 3 to April 13) lost 44 per cent. of its nitrogen, 16 per cent. of its phosphoric acid and 28 per cent. of its potash. Another lot, exposed 50 days (August 9 to September 27) lost 69 per cent. of its nitrogen, 59 per cent. of its phosphoric acid and 72 per cent. of its potash. The second lot lost more heavily because of fermentation."

Bacteria working on the organic matter of the manure renders the solids more available to the soil, but while they are beneficial in one line they may be harmful in another, as, unless conditions are right, they may cause a loss of nitrogen. Keeping the manure compact and moist tends to the least loss.

The wastage or loss can be checked to a certain extent by using tight floors, plenty of litter, and manure sheds. Many have concrete floors in the stable, but comparatively few have a shed for storing manure between seasons when it is not possible to apply it direct to the fields from the stable. In some districts cisterns for the liquid manure are common, but this entails extra expense and work. The liquid may be largely conserved for the land by use of absorbents in the stable. The advantages and disadvantages of applying fresh and decomposed manure to the land are discussed by Mr. Burdick in the following paragraphs: "The most benefit ensues when manure is applied as fast as it is made. There is never any increase, whereas there always is some decrease and at times tremendous decrease following the storage of manure, even for brief intervals. To phase the matter another way, the manure is never better for use on most field crops than it is the moment it is voided. The writer once heard a speaker say that any day in the year except Sundays and holidays is a good day on which to spread manure; on winter's snow (if the land is fairly level), in summer's heat. However, it is neither practicable nor advisable to follow this doctrine literally. At times the press of work is such that it must needs be stored. Then, too, there are soils and crops on which a rotted manure may do better than an unrotted manure, particularly if commercial fertilizers are not used. Hence one should know the good and the bad points of both.

"Fresh manure—advantages: The largest proportion of the total plant food may be utilized when the manure is applied directly to the land. The rains and the downward pull of gravitation cause the soluble portion to pass directly into the soil. Fermentation is checked, particularly in dry weather, since the relatively small clumps dry rapidly on the surface. Shutt found that when decomposing manure containing 9.8 pounds of nitrogen was exposed direct from the pile in thin layers it lost five per cent. of its nitrogen, while the loss was only two per cent. under similar conditions in manure that was well rotted. When fresh manure is plowed or harrowed in, it tends to lighten heavy soils. Its decomposition in the soil helps similarly to disintegrate sod or stubble which has been plowed under. Its



Natives of the Highlands.

soluble nitrogen content promotes rapid foliage growth. It is on this account especially adapted to application to meadows, corn fields or other forage crops.

Fresh manure—disadvantages: When coarse bedding has been used and the manures plowed under on a light sandy soil, it tends to make the soil so open that it dries out too rapidly. Then, as a consequence, the manure does not rot normally and proper root development is hindered. Furthermore, on the lighter types of soils the liquid manure may decompose so rapidly that a surplus of soluble plant food is furnished. Plant roots may become injured or 'burned' or an over-rapid foliaceous growth secured of such crops as oats or potatoes which is likely to be followed by lodging and delayed maturity. And, finally, it is well known that it is a serious weed distributor.

Rotted manure—advantages: Manure which has been stored under conditions where it cannot leach and has been kept compact and moist decomposes more or less and, as a result, is better balanced and better fitted for the forcing of crop growth. Its mineral constituents in particular are made more available; it spreads better, for the reason that the coarse litter has been largely broken down; it exerts no ill effect on

light sandy soil; and the viability of its weed seed contents is seriously affected.

Fresh manures are to be preferred on the heavier soil types, on soils in need of humus, and on forage crops; decomposed manures are best adapted to use on the lighter soil types and on potatoes, truck crops and cereals.

There is no denying the fact that there has been great wastage of farmyard manure, a substance which is an all-round fertilizer. It is possible to overcome some of these losses at slight expense. If ever there was a time when it should be handled carefully, it is now when there is need of the greatest possible returns from the soil. Some apply manure direct from the stable to the land, and by so doing believe they get the greatest value. Unless there is a great depth of snow or the land is rolling, there is little loss by leaching; bacteria are unable to break down the nitrogen and cause its loss to as great an extent as they would if manure were left in a loose pile. Another advantage of drawing direct to field and spreading is that the work is done during the slackest time of the year. Drawing a load of manure a day to the field is good exercise for a team and the work

can usually be done between chores. Under certain circumstances this cannot be done, but steps can be taken to avoid a stream of liquid manure flowing from the pile. The soil does not get the good out of organic manure all in one year; the benefits are spread over a space of time.

In some districts the practice is to give the corn and root fields a coat of manure during the winter; others manure the meadows and leave the corn field until spring. Top dressing for grain is advocated by some and the practice gives good results. The nearer the fertilizer is to the roots of the plants, the more good it does the crop. The custom of turning the manure five or six inches under is not approved as much now as it was in the past. Plant food naturally goes down, but must be brought up by capillary action, roots of plants or turned up again by the plow; consequently, it appears to be the most logical method to keep the manure somewhat near the surface.

Whether you pile in the yard during the winter, or apply it fresh to the land, the aim should be to as far as possible stop the leak in fertilizing material between the stable and the field.

Automobiles, Farm Machinery and Farm Motors.

Keep Machinery in Good Repair.

The use of a badly worn machine results in inferior work, and is almost certain to cause a great loss of time due to break-downs when there is the greatest need for the work to advance rapidly. The solution of this difficulty is: Order repairs early, anticipate the break-down and order a repair for the weak part which will most certainly give way soon, or buy a new machine to replace the old one which is really unfit for further profitable use.

All old machinery should be sold as junk at the earliest opportunity. Before selling as junk, however, remove all bolts and screws of various sorts. Very frequently a bolt is lost on a machine in the field. No old bolts are at hand, the village hardware store is several miles distant, the machine is run without the bolt and a break-down results. With an assortment of old bolts this could be prevented. Almost as serious is the use of a bolt of too small size. If all the bolts from several farm machines have been saved the assortment will supply almost any ordinary need. In the replacement of a bolt the diameter should receive first consideration. A bolt of too small diameter breaks at the time when it

is most needed. It never does its real duty, since it allows too much play of the parts. If a bolt is too long this can be remedied by bushing up with washers or old nuts of a larger size, and the strength is only very slightly impaired.

There may be other parts of the old machine worth keeping for repair purposes.—E. R. Gross, Colorado Agricultural College.

Gasoline Engine Queries.

1. My 6-h.p. gasoline engine has a speed of 390 r. p. m. The pulley on engine is 16 inches in diameter, and the pulley on saw is seven inches in diameter. The saw is 28 inches in diameter with a 130-lb. flywheel 30 inches in diameter. Would you kindly let me know through "The Farmer's Advocate" if my engine would use more or less fuel if I used a 24-inch pulley on engine instead of the 16-inch pulley?

2. Also has a gas engine weighing 2,000 lbs. any advantage over one weighing 1,250 lbs. of equal horsepower? R. P.

Ans.—1. The proper speed for a 28-inch saw is 1,285 r. p. m. With your outfit as now arranged the

speed of the saw is only 891 r. p. m., but with a 24-inch pulley instead of the 16-inch it would be 1,337, which is the least shade high but not enough to make any material difference. From the above you will see that you would get better results by using the large pulley. The engine should use less gasoline per cord of wood cut with the new arrangement than with the old.

2. You do not say whether both engines are two or four-cycle, or whether the heavy is four-cycle and the light one two-cycle, and so it is impossible to answer your question definitely. A four-cycle engine is always heavier than the same power of engine of the two-cycle design, but on the other hand the lighter engine runs at a higher speed than the heavy one, which is supposed to make up for the lack in weight, and if used as a portable outfit the lighter engine has the advantage of being easier to move. The four-cycle, however, will do the same work on less fuel than the two-cycle, the difference being sometimes estimated at about 10 per cent. If, however, both engines are of the same type, and both are properly proportioned, neither one should have any decided advantage over the other so far as power is concerned. W. H. D.

Canada's Young Farmers and Future Leaders.

Food For Thought.

A rolling stone gathers no moss.

Leaders are ordinary persons with extraordinary determination.

"The prudent, penniless beginner in the world labors for wages a while, saves a surplus with which to buy tools or land for himself, then labors on his own account another while, and at length hires another new beginner to help him. This is the just and generous and prosperous system which opens the way to all, gives hope to all and consequent energy and progress and improvement of conditions to all."—Lincoln.

Promises are worthless unless they are kept. There are some folk who have a habit of making promises, but readily find excuses for not keeping them. Are you inclined that way? Make your word as good as your bond if you want people to have faith in you.

As we are not sure of a minute we should avoid wasting hours.

Imitation is a sign that a person is nearing his limitation.

We reap as we sow. There is no escaping the inevitable:

"Though the mills of God grind slowly,
Yet they grind exceeding small,
Though with patience He stands waiting,
With exactness grinds He all."

A man's character depends a good deal on the kind of books he reads and the company he keeps. With all the high-quality books available, why weaken your character by reading questionable literature? Plan to read and study one or more good books this winter. "Reading maketh a full man," says Lord Bacon and Sir R. Steele says, "Reading is to the mind what exercise is to the body." None are so poor as to be unable to own a book nor so illiterate as to be unable to read it.

"So many are
The sufferings which no human aid can reach,
It needs must be a duty doubly sweet to heal the few we can."—Coleridge.

Ways of Interesting Boys in the Farm.

EDITOR "THE FARMER'S ADVOCATE":

I have heard a number of people say that if you give a farm boy a good education he will up and leave the old farm and his father. This may be true in some cases but not in all. If a boy who has a good education gets the idea into his head that farming is too small a job for him, he will go off to work at something else which is bigger in his estimation. On the other hand, some other boy may have just as good an education, but he has become interested in farming and sees how he will be able to put his talent to good use on the farm. That boy is very likely to stay with his father.

I attended the public school till I was fifteen, and at that time I passed the matriculation examination admitting me to a "Normal School." I did not have the slightest idea of ever going to Normal, but would have liked to have gone to an "agricultural school." The following winter I stayed at home and helped father while my elder brother was attending an agricultural college. The next summer my parents decided that I should go to Normal School. I did not like this proposition very well at first, because I did not want to leave the farm, but finally I came around to it, and in September I started for school again. I passed the first-year examinations successfully and was then a licensed school teacher. During the summer vacation I stayed on the farm, and in the fall I started off to teach school. This seemed to me to be a very monotonous job at times, while at other times it was tolerable enough, still on the whole I did not like the work as well as farming. Before the school term was out I got a substitute to teach for me and I went to put in the crop for my aunt, who had lost her husband, and she, being unable to get anyone else to help with the work, was glad to have me around. I worked there until the first of July, and since that time I have been at home.

If you want the boy to stay you must get him interested, and if he is really interested he will stay if he is given half a chance. Give the boy something to look after. The first live stock that I owned was half a dozen chickens, that a kind neighbor gave to me because she couldn't be bothered looking after so few. By the look of those chickens they might have been a mixture of every breed under the sun, but that did not matter to me; they were all the prettier for it. I raised them all to maturity except an unlucky one that the crows got. (I have had a spite at the crows ever since.) This was only a small beginning, but it got me interested in poultry. When I was still very small my father gave me a calf to look after, and when it was two years old he sold it and put the money in the

bank in my name. A few years later I bought a swarm of bees. These little fellows are very interesting at any time, but especially so when they get cross and get under your bee veil and give you something less enjoyable than honey. But what's a sting to a healthy farm boy? He thinks very little of it, and indeed he will feel amply repaid in one night for all the stings of the season if he gets a chance to sit down to a table with a good dish of honey.

This summer my father made me a present of a nice yearling colt that will likely make a good driver. By looking after one colt a fellow gets interested in all the horses. These are some of the ways by which I got interested, and I believe that there is no better way than to have something of your own to look after. There are other things to consider. The farmer who keeps poor horses, poor cattle, poor sheep and poor everything is not as likely to hold his boy as a farmer who has his cattle fat and sleek, and his horses so that when they are taken out for a drive you have to "hold on" rather than "pile on." The fall fair is a very good way also to interest the boy. Fit up some of the stock or let him fit them up and let him show them at the fair and he will want to be around at the same job again the next fall. There are other ways of holding the boys, but I think the best way is to get them interested first.

P. E. I.

R. L. CAIRNS.

With all its Drawbacks Farming is a Good Occupation.

EDITOR "THE FARMER'S ADVOCATE":

While farming is the oldest and generally considered to be the best and most independent occupation, it has its drawbacks. I like farm work and since starting for myself have lived as well as I probably would have in town, but farming necessitates a considerable outlay for buildings, stock, implements, etc. Not having as much of this world's goods as one should have when assuming the responsibility of a one-hundred-acre farm, I had to take a mortgage for nearly the full value of the farm, besides giving a note for some of my stock and implements. Some may say that I should have worked out a few years in order to have more ready cash to start with; that may be so, but I wanted to settle down and figured that I could do better working for myself than for another man, and I haven't changed my opinion. However, it is proving to be an up-hill fight, even with the present high prices of grain and stock. So far as stock is concerned, the price works against me, as I am still building up my herd. Some advise me to sell my grain and hay and not gather too large a herd around me when stock is so high. True, I might have more ready cash if I followed such advice, but I would be

against the best teachings, as I believe it is generally admitted that keeping stock is the best method of enriching the farm so that bigger crops may be grown in the future to feed larger herds.

If I did not like farm work and believe that I could yet make a success of it, I would have been tempted to quit several times during the past two years. My city friends, working on a salary which comes due at the end of each week or month, think that I have a gold mine; that I must be getting rich when butter, meat, eggs, potatoes, etc., are so high priced. They have little responsibility other than to do the one job given them. The manager bears most of the responsibility. But even his returns are little affected by changes in the weather; not so the farmer. He may do his best, but, as Burns said "The best laid schemes o' mice an' men gang aft a-gley." He has no control over the weather. It rains when he wants it dry and it is dry when the crops need rain. The markets are high when he has nothing to sell, and are low when the hogs or steers are prime. No, I am not a pessimist, but it riles me when city folk say I am not patriotic because I do not put at least one-quarter of my farm into potatoes so as to help bring down the price of spuds, and because I do not do this and that. They say "if we were in your place we would grow more potatoes, more apples, have more wheat to market, keep far more pigs and cows. Why, with the price of everything we would only need to farm a few years to become independent." But would they do all this if they were in my place. I am doing all I can and all I ask is a reasonable profit for my labor and investment. In 1916, the year I made the venture on the farm, the elements were none too kind for even though I made what I thought good plans they did not work out. In fact, with the rain in the spring and the drouth of summer I was unable to meet my notes, after paying interest and taxes. They were renewed. The potatoes I had planted with the expectation of using the increase to pay the notes, did not multiply. In fact, I dug less than I planted. A field of oats was so short that I couldn't cut them with the binder, and apples, there were none. The outlook was not bright but I still had faith in the farm. I planned and planted in 1917 and was rewarded with a fair crop of grain and a good yield of potatoes. The fall wheat failed to come through the winter as it should, so I sowed barley with it. While I had no wheat to sell I had good feed for finishing a batch of hogs. There were drawbacks, however. In the spring my best cow sickened and died; then, on in the summer, a sow which had farrowed a litter of ten pigs, was found dead in her pen one morning, leaving a bunch of two-day-old pigs to be cared for. The best of care saved three of the lot and they are doing well. They say troubles never come singly, and that there will be a third loss before I have a streak of luck. May the next loss be light, as at the end of the second year I am unable to lay away any cash to make a payment on principal, although an inventory would show that I am worth more than two years ago as the stock has increased considerably. I have enjoyed my work and my home, but I have not had the ready cash that my city friends have to spend even if the farm is what they claim it to be. I am not discouraged yet, but I would like to see those city folk who know so much about farming try it. If they have better methods of farming than I have practiced I want to know them, and if they can't do any better than I have done it would be high time for them to cease volunteering advice.

If I were starting again I would endeavor to have several hundred dollars in the bank for working capital. I have been handicapped by not having the cash to purchase stock when such were sold at what I considered a bargain. There have been several times that I could have made a few dollars by being able to pay cash. Then, I would not tie as much money up in implements as I did. There are a few that a person must have, but I believe I could rent haying and harvesting machinery for a few years or I could change work with my neighbor now that help is so scarce. Another mistake I made was paying almost as high a price for grade stock as would have bought registered stuff. I am trying to remedy my mistakes and to prevent others making the mistakes I did. I still believe that by putting the same business ability into the farm as one would have to use in a commercial enterprise to make a success there is a good living off the land and that owning a farm is better than working in a factory or clerking in a store. We must get organized, however, so that we can demand our just rights from the powers that be.

Middlesex Co., Ont. FARMER'S SON.

THE DAIRY.

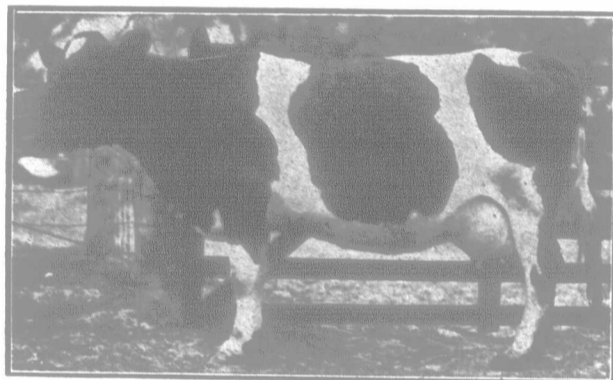
Keep the Stock in Condition.

Breeders of registered stock lose thousands of dollars every year by their failure to keep the breeding stock and especially that which is for sale, in a thrifty condition. A dairy cow is not supposed to be loaded with flesh, in fact, if she carried a deep layer of fat the intending purchaser would surmise that she put the feed on her back instead of into the pail. If a man wants beef he seldom purchases a member of a dairy breed. However, some stock is allowed to get very thin which makes it unattractive and besides a thin cow with dry, harsh hair seldom milks as well as one that is thrifty when given a like amount of feed. A cow with desirable lines, pliable skin, sleek, shiny coat and alert appearance will bring many more dollars in the sale ring than one of as good lines and breeding, but with an unthrifty appearance. The same applies to bull calves. While one animal may be as good as the other, stockmen

appear willing to pay for the fitting. This is noticed at many consignment sales. There is a lesson here for anyone contemplating having a sale. Plan ahead, and aim at having every animal offered in the pink of condition. If one or two are not up to the standard leave them out of the sale as they may lower the price of others. Fitting cannot be done in a week or a month; it requires time. Grooming and training to lead, while essential are not enough. The animals must be fed in such a manner that they will be gaining in flesh and their coat have a sleek appearance. Succulent feed, oil-cake, cotton-seed meal, etc., are splendid conditioners when fed with legume hay and a little grain.

One man, whose consignment in a sale was thin and unthrifty looking stated that "feed was too high-priced for him to feed his stock extra, and that he was too busy to bother currying the animals he had for sale. Yet, this man received considerably less money for each individual sold than did his neighbor who had no better bred stuff. The latter, however, spent a few dollars in extra feed and for every dollar spent got two in return. Appearance makes a big difference in the price an animal will bring by auction and it is equally true of private sales. The same applies to grade stock as well as to registered animals. Maintenance of a well-fleshed animal is no greater than for one in poor condition. The expense is in getting that extra flesh, but the experience of stockmen is that it pays whether you purpose having a sale or not.

There are breeders who make a practice of purchasing the typy, well-bred individuals even if they are slightly out of condition. A couple of months in their stable under their system of feeding changes the appearance with the result that if they again change hands it is at a big advance on the first price. If contemplating having a sale, fit the stock, it will pay.



A Grade Cow that Pays Her Way.

Harvesting a Winter Crop.

The ice harvest is again at hand. The cold days and frosty nights have been gradually thickening the layer of ice over the ponds and streams. As soon as it is thick enough to make a fair-sized block, it is advisable to store away a few tons for the following summer's use. As it is a mistake to delay harvesting the ripe field of grain in the summer, so it is a mistake to delay the ice harvest once it is ready to cut. The weather is so changeable that one never knows when a thaw might set in and either break up the ice or render it of poor quality. As yet comparatively few farmers and dairymen lay in a supply of ice, and as a result have considerable difficulty in keeping milk and cream sweet during the tropical temperature of July and August. It frequently happens that as much milk is soured and rendered useless to the cheese factory during the summer as would pay for putting in ice which would have saved the loss. It is also a great convenience to the housewife to have ice handy. It enables her to keep the butter in a firm condition and permits her to make and keep various dishes which are nutritive and pleasing to the palate, but are impossible without ice.

The cost of putting up ice is not great. In August 2, 1917 issue, of "The Farmer's Advocate" different types of ice houses were described. An elaborate building is not necessary but there are several essentials which must be adhered to. A temporary building can be erected by using a few cedar posts and some inch lumber. A permanent ice house, with refrigerator room attached, while serviceable is rather expensive and could not be built now in time for this season's crop. If possible, erect the ice house at the north side of a building where the sun's rays do not strike it directly. Good drainage is necessary, as under the most ideal conditions ice will melt somewhat during the summer, and if this water cannot get away it tends to spoil the remainder of the ice. Then, too, it is necessary to have a circulation of air through the top of the house. This can be arranged by having ventilators in the roof and an opening at the eaves. If there is no circulation the air over the ice rises to a temperature that will cause considerable wastage. A good roof is necessary, as water dropping through the roof will soon wear away the ice. Sawdust or planer shavings make splendid insulation material for storing ice in a temporary house. If erecting a structure at this time of year, drainage may be furnished by laying a few rails on the ground and then banking up around the outside with earth in the spring to prevent warm air circulating in the bottom.

Care should be taken that the ice is cut from a pond where the water is pure. Disease germs in the water are not necessarily destroyed by freezing. It is estimated that when the ice is used for cooling milk and cream,

about one and one-half tons should be stored for each cow in the herd, with an additional three tons for house use. This will give some idea as to the amount of ice to be harvested. To secure twenty tons will not require a very large area of a pond, especially if the ice is a foot or more thick. It is estimated that one ton of ice will occupy approximately forty-five cubic feet of space, which will give an idea of the size of building required. With ice twelve inches thick and the cakes cut twenty-two inches square, ten of them will make about a ton. An endeavor should be made to have the blocks as free from snow or porous ice as possible; the latter melts readily causing the good ice to waste. Where only a small quantity is required the snow can be shovelled off, or a cheap scraper can be made to be operated by horsepower. A cross-cut saw with one handle removed can be used for cutting the ice, and it is surprising the number of blocks a man can cut in a day. He should aim at cutting the blocks as nearly square as possible, as it makes them much easier to pack. A pair of ice tongs is essential in handling the cakes of frozen water. These can be made at any blacksmith shop.

The wastage of ice through melting during the summer will depend a good deal on how well it is packed. Twelve inches of sawdust or shavings should be placed in the bottom and then the first layer of the stack of ice may be laid, keeping the blocks twelve to fourteen inches from the outside. The blocks should be fitted closely together and cracks filled with fine chips of ice. Some use an adz to level off the surface of the layer and sweep these fine shavings into the cracks. This makes the best filling material. One layer of ice is laid on another until the stack is complete. The fewer air spaces that are left between the cakes the better the ice will keep. Some leave the ice uncovered for a week or more and frequently sprinkle it with water which freezes it into almost a solid block. One objection is that by so doing the difficulty of taking out ice in the summer is increased. The sawdust or shavings used as insulating material around the outside should be firmly packed as it is being put in, and then it is necessary to put from twenty to twenty-four inches of this material on the top.

Harvesting the ice crop may require two or three days during the winter, but once it is stored it requires no more attention until it is needed for use during the heat of summer. The convenience of having an ice supply amply repays for the work and expense of harvesting it.

A Few Principles of Breeding.

Modern science and recent discoveries of certain laws of inheritance have not revolutionized live-stock breeding operations of to-day. They have, however, done a great service in freeing breeding of the detrimental influence of certain time-honored beliefs which, in the light of present knowledge, appear as absolutely false.

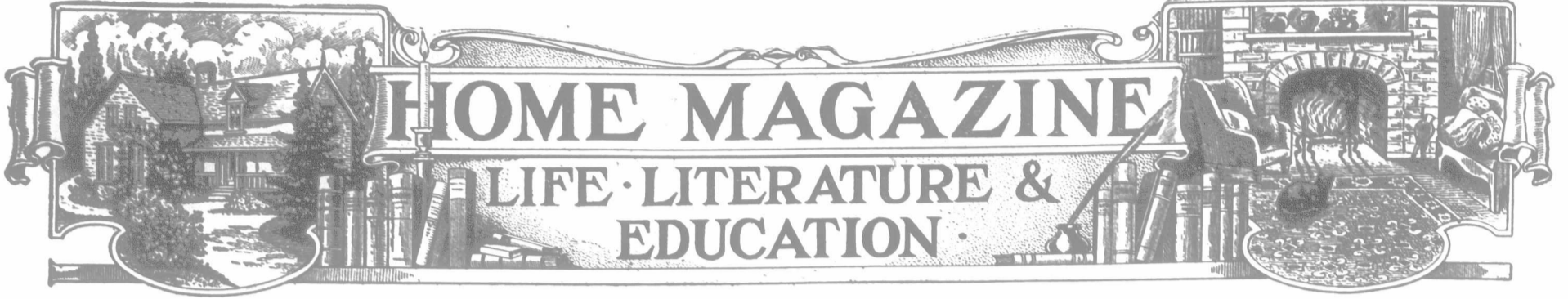
Variation is universal. No two are exactly alike. No matter how closely two animals may resemble one another, there always exist certain minute differences. Experience has shown that within a particular breed, or tribe, or strain we are likely to have exhibited certain variations which seem to be peculiar to it. Hence it is essential that in order to gain the greatest success with the breed that is our favorite we must be well informed as to its history. Then, knowing the history and variations most likely to occur, sound judgment must be used in departing from any of the definite principles of live-stock breeding.

It is interesting to note that within comparatively few years a special kind of animal has been produced for practically every utilitarian purpose. This rapid progress has largely come about by breeders keeping always in mind two things—utility and beauty of form. If the breed we are using is not especially pleasing to our sight, failure is sure to follow. The same thing is true if the breed is lacking in utility.

Observation was the chief asset of early breeders, and from their observations they came to conclusions which, in a measure, were correct. They observed that in ordinary breeding operations like tends to produce like; also that pedigree counts. It was realized that a certain dependence could be placed on an animal's pedigree, but of the value of this working of heredity they were not sure. It was also considered that in a general sense in-breeding brings uniformity of type, but with it a loss of vigor. Likewise, cross-breeding increases vigor, but destroys uniformity in the herd or flock. With these principles well in mind, it is not surprising that much advancement has been made.

Grading implies the mating of a common or relatively unimproved parent with one that is more highly improved, meaning a pure-bred. This is usually accomplished by using a pure-bred male, because in this way one animal's influence is distributed over the entire herd. Grading is the economical method of improving live stock, and consequently is the method in most general use. The reputation of any breed is made more on the grades of that breed than on its pure-bred representatives. It is somewhat surprising to note the percentage of purity in animals with a few top crosses. The progeny of a grade dam from a pure-bred sire is known as a half-breed or 50 per cent. pure blood. The progeny of a half-breed from a pure-bred is three-quarters or 75 per cent. pure blood. In this way we arrive at seven-eighths, or 87.5 per cent. pure blood; fifteen-sixteenths, or 93.75 per cent. pure blood; thirty-one thirty-seconds, or 96.87 per cent. pure blood; sixty-three sixty-fourths, or 98.44 per cent. pure blood, and so on. Since pure-bred animals are more prepotent than grades, these percentages are, no doubt, higher than can be shown mathematically.

Crossing means the mating of animals belonging to



"F" Company.

BY CLAYTON DUFF.

Along the iron road of war
A bright battalion wends
Beneath the sun, beneath the stars—
My Company of Friends.

The armies of the world go down
In dim, grey legions led,
But these are marked amid the host
As though they walked in red.

No Captain leads, no watchword's passed,
No muster call is heard,
But every morn I cry them "Hail!"
With dawning wind and bird.

And every night when silence falls
Around the evening lamp,
Within my sheltered thoughts I light
The watch-fire of their camp.

They may not know the ranks they keep;
Their ways lie far apart;
They never meet except within
The bivouac of my heart.

Yet in my love their lives are bound,
They march beneath my star—
My little company of friends
Upon the road to war.
—In University Magazine.

Travel Notes.

(FROM HELEN'S DIARY).

ON the way back from Einsiedeln we made a little tour, going first to Lucerne, as Mrs. Shaw wished particularly to see Thorwaldsen's famous Lion. And apropos of the Lion, I have heard of some people who thought it was alive and kept in a pit, like the bears of Berne.

A wonderful work of art is this sculptured Lion, made more impressive by its isolation in a gloomy grotto with high perpendicular walls and over-hanging foliage. But I think it would be much more impressive if one could be taken to it blind-folded and thus escape the millions of grotesque reproductions of it which line the streets of Lucerne. The Lion is of heroic size, 28 feet in length, and is hewn out of the solid rock above a spring which forms a pool at the base of the high cliff. It is a memorial to the brave Swiss Guard of Louis 16th of France, who fell defending the Tuileries from the mob in 1792. The Lion is depicted in the agony of death, sheltering with its paws the Bourbon lily and the shield of France. In its side is the broken spear, and at its head the Swiss cross. Beneath it are inscribed the names of the 26 Swiss officers and 760 soldiers whose devotion it commemorates.

There is something tremendously pathetic and soul-stirring about this tragedy in stone. Everyone feels it. So I was not surprised to see Mrs. Shaw mopping her eyes. But I was surprised when she apologized in a sob-choked voice and stated the cause of her tears. I was downright disgusted. For this is what she said:

"It makes me think of poor George." I did not ask her why. I did not want to know—not then. But afterwards—hours afterwards, the humor of the thing struck me and I began to wonder what mental process led up to her absurd remark. So I sounded her, cautiously—Oh! very cautiously indeed, and learned from her own frank admission that she didn't know herself. She said it just sort of came over her like a flood and she couldn't tell why, unless it was that George died from the effects of a wound in his side which he got when out hunting. Perhaps a psychologist could unravel the mystery.

Marvellous as is the Lion of Lucerne, it begins to pall upon one after a few days' residence in that town. It is so done to death for the tourist trade. The shops are crammed with big and little, good and bad, reproductions of it—in glass, in wood, in marble, in ivory, in gold and silver, one even sees it in Berlin wool, in sugar, and in butter. It is enamelled on jewelry, it is emblazoned on book-covers, it decorates letter paper—in fact, you can't get away from it unless you leave town. And even then it haunts you.

Lucerne is very German both in appearance and sentiment. You have to look all around before you make a remark there, as an enemy may be listening. In pre-war days it was a tremendously popular resort—but now, it is like a dead town.

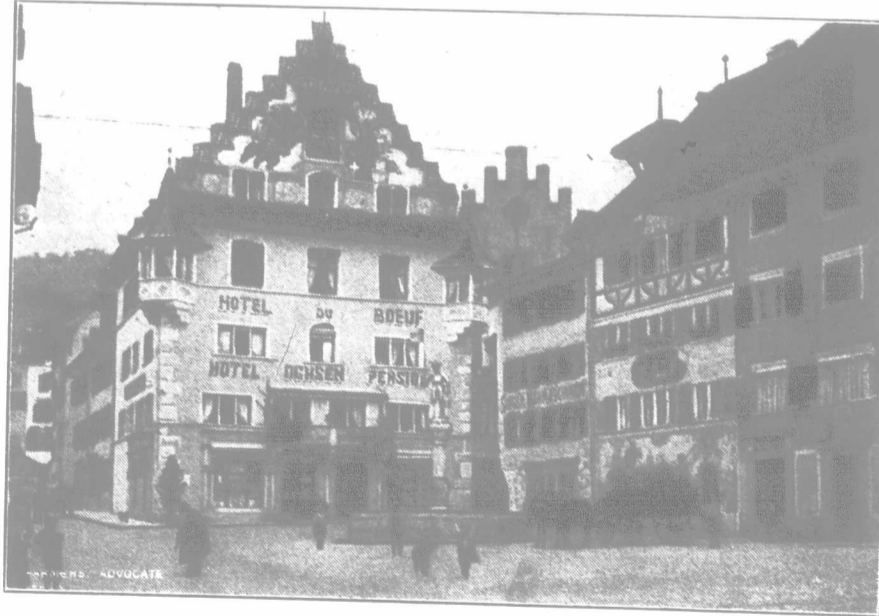
We spent three days there—rainy days, so we had a fine opportunity to see the magnificent views for which Lucerne is famous, as the Alpine scenery is always most beautiful and impressive in showery weather. Owing to the frequent showers we spent considerable time on the two medieval bridges—most interesting they are. Each one is roofed, and decorated with historical paintings. The longest bridge has no less than 154 scenes from the lives of the patron saints of the town. Judging from the pictures, they must have been very determined, belligerent, and disagreeable old gentlemen and led very exciting lives. Each picture has explanatory text underneath, but owing to the fantastic lettering and peculiar German we could not decipher very much. When we got tired looking up we rested our eyes looking down on the rushing Reuss and watched the white swans floating upon its green waters.

But what interested me particularly in Lucerne was the German internes. We happened to be there on one of their "days" in town. They are not billeted in the town itself, but in various places in the neighborhood. There are a good many French and English internes

filled with German-looking women—knitting; fat, florid, round-headed men reading German papers;—and German soldiers. I could hardly believe I was not actually in Germany. The internes—with some exceptions of course—were a rough-looking lot, and their uniforms of which there seemed to be an endless variety, were ugly, both in color and in cut. Imagine a burly, red-faced Teuton wearing a uniform with rose-pink decorations! We saw very few lame or disfigured men among them, such as one sees every day on the streets of Vevey. The number of badly-set legs and facial disfigurements among the English and French internes is something appalling, due, they say, to the careless treatment received in German hospitals. We saw some German officers who were too gorgeous for words, one especially, was of an enormous height and fairly glittering with decorations. He walked as if he had a spinal column of iron, and looked as if he had been brought up on vinegar. Naturally were regarded the German internes with prejudiced eyes. Mrs. Shaw absolutely refused to sit down in the park near them, which I thought was going a bit too far, especially as the music was excellent, and there was a sunny bench beside us empty, and we were both foot-tired. Anyway, this is a neutral country and we are supposed, in fact, requested, to keep our feelings to ourselves. But Mrs. Shaw seemed to think it was more patriotic to stand—so we compromised—she stood up and I sat down. I can be quite as patriotic sitting down. However, she put one of her parcels on the seat—she had been buying a few little things—and then, forgot it and left it there. It was a paper bag full of cake.

We were about twelve trees distance when she missed it. We turned back, and lo! on the bench I had just vacated were four German soldiers eating Mrs. Shaw's cakes!

She was furious, the kind of "mad" they call "hopping". But it seemed to me to be considerable of a joke.



The Hotel at Which We Stayed at Zug, Switzerland.

ZUG was our next stop—a quaint little village, with queer medieval buildings and fountains and towers, and a little lake all to itself—the lake of Zug.

And sunsets! magnificent sunsets! When we engaged our rooms the proprietor said to us: "You must see our sunsets." Just as if Zug had ordered them in advance. The hotel in which we stayed was a partiarch, dating from 1480. The walls were several feet thick, the ceilings low and made of wood much decorated, and the outside of the building covered with historical paintings.

We remember Zug especially for a number of reasons, apparently quite unrelated: we had the best bread and butter there, and more of it, than any other place we visited, (in these war-days this means something); we had perfect weather—golden autumn days; and we were serenaded Sunday morning about five a.m. by a group of men singing delightfully beneath our windows. (The explanation was that the men belonged to a singing society and were having a practice before taking an early train).

And then, of course, those marvellous sunsets—doubled by the mirror of the lake.

FROM Zug we went to Zurich. Z's are thick in this section of Switzerland. Zurich was so full of hooked noses of German extraction, and seemed so noisy and dirty, we were glad to get away. The late King of Greece—Constantine—is making Zurich his headquarters now, and the city is quite puffed up over it.

Then to Solothurn, otherwise Soleure, otherwise Soletta. Take your choice. It's all the same place, but has three names, German, French and Italian, like most of the other places in this trilingual republic. It's very confusing to strangers, especially when buying railroad tickets. You may buy a ticket for Bern (German), Berne (French), or Berna (Italian); for Luzern, Lucerne, or Lucerna; for Basel, Bale, or Bazelia;—that's easy guessing. But when the name changes entirely, which is quite often the case it is most puzzling to travellers.

Solothurn is said to be the oldest town this side of the Alps, with one exception—Treves, in Germany. It was once a Roman city; bits of the old fortifications may still be seen.

There isn't a street car in Solothurn, so we proceeded to the Hotel Krone—starred by Baedeker—on foot. We entered. It looked rather strange; no genial proprietor rushed to welcome us in the usual enthusiastic Swiss manner. There didn't seem to be any proprietor. There were a good many Swiss soldiers standing about, and they stared at us rather queerly. We looked into a room or two—Swiss soldiers everywhere, so we modestly retired to the street and then discovered, from various signs on the building that the Hotel Krone was occupied by Swiss soldiers. In fact, the whole town seemed to be full of them. They were even in the Cathedral—not praying, but sight-seeing. Every little while a military automobile would dash along the stony street with a thunderous roar.

There are a number of big military hospitals in Solothurn where the Swiss soldiers are treated, and some one told us the hospitals were full of patients.

FROM Solothurn we went to Morat, or Murten, or—whatever its Italian name is. Morat is particularly interesting historically because it has an ancient wall in good preservation, with gates and towers, etc. It is haunted by artists who delight in the quaint old architecture and the picturesque arched streets. We liked it too—as a picture, but we left there for reasons intimately connected with the nose. We couldn't stand the ancient smells. We stayed in a hotel which was part of the city wall, and I don't think the building had ever been disinfected since 1476—or thereabouts, when there was a terrible battle there.

What was it Mrs. Shaw lost in Morat? Something—but I can't remember what. She lost so many things.

Then to Avenches, now but a little picturesque village, but formerly a brilliant Roman capital. The Romans took possession of this part of the country in 58 B. C. At that time it was called Helvetia, and Avenches was called

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Aventicum. It was then a city of 50,000 inhabitants. It was surrounded by a high wall, with 80 towers, many gates, and was strongly fortified. It had temples—the Temple of Apollo, the Temple of Victory, the Temple of Aventia (the local goddess), and many others. There was a forum, and theatres, and magnificent palaces.

Portions of the old wall are standing to-day, and there is one solitary column—all that is left of the temple of Apollo. There is a theatre in perfect preservation, and there is a museum filled with ancient Roman "dug-ups" found in the neighborhood of Avenches. Only last spring, a farmer unearthed five exquisite statuettes of Roman deities in a field near the village. These statuettes are in perfect condition—absolutely flawless, which seems remarkable when one considers their great age.

Perhaps in a thousand years or so people will be digging up art treasures in Belgium—treasures which have escaped the barbarous Huns.

Have-You-Heard

That we are to have only *one* lump of butter a day?

That we are to have *less* bread?

And no desserts?

That the "undesirables" are going to be interned or made to work?

That there are 4,000 young men in Geneva without any visible means of support?

The Pleasures of Life.

BY MARGARET RAIN.

WE must apologize for stealing the above title from Lord Avebury's charming book. The more so that we were of those who were inclined to think when that little book was published that it was easy for him to be an optimist, we on the other hand being of those whom the poet describes as:

"An ill-used race of men who till the soil,
Sow the seed and reap the harvest with
enduring toil,
Storing yearly little dues of wheat and
wine and oil."

Yes, and after all the "enduring toil" arriving at just sufficient to make one gon on, while the other side of life was the only one with which Lord Avebury was acquainted. He was a rich man's son and in the matter of original endowment he had five talents for his share. His health was sound, his moral nature well balanced. He grew up and lived among highly-educated people, not "smart" society but society by birth and intellect of the highest class. Above all his inclination led him to one of the most tonic studies the human mind can engage in, natural history. If, thus favored, he attained to happiness, why should not the world know about it as part of the total life of man? But it ought also to know of the misery of the unfortunate as the other side of life, so that by taking the bright and dark together we may approximate a correct estimate of what life really is. Yet when Lord Avebury was reminded that he only knew the bright side of life and how favored he had been, he replied, "Well, I am naturally of a rather melancholy temperament." So it is evident and all the more creditable to him, that he kept his black moods to himself and gave his sunshiny ones to the world, for in this age we want as much optimism in literature as we can get; there is no fear but that the pessimistic element will take care of itself.

This confession of the author of the Pleasures of Life, that he was temperamentally melancholy proves one thing, that the most favorable circumstances and the finest natural endowment in the way of brains cannot bring happiness. People tell us sententiously that "money is not everything", and we are at times, when we feel that we never have had nor shall have as much as we desire and deserve, ready to reply with the Yankee. "Well, no, not everything, only 98 per cent." We are inclined even more to envy those who have been endowed with genius, but all of us know or have read that the cleverest and most gifted people of all time have been the most unhappy.

Let us take for instance our greatest living novelist, Thomas Hardy. He has not yet achieved that depth of pessimism which is reached in an old book with which we should all be more familiar.

"I praised the dead which are already dead, more than the living which are yet alive. Yea better is he than both they, who hath not yet been, who hath not seen the evil work that is done under the sun." We think the writer of these words, beautiful in themselves, has touched bottom, that there is no lower depth he can sink to of unbelief or despair. The earth is an inferno, and the heavens filled with blackness, he does not even remember that the stars are still there if he could see them. Death and oblivion are his best hope. Thomas Hardy has not equalled this, though doubtless he has done his best, but what we have cause to object to in his and some of his followers' fiction is that it gives a wrong impression of England and the English people. One of his admirers writes

is being given by our brave soldiers, and a Frenchman writing to an English officer gives very forcibly his views on this very subject. "Before the war I tried to understand the English so far as a man could who does not care for travel and is content to study a people by its works. I had read those books which in France we believed to represent the best of what modern England was writing. Modern England to me was a very sombre country. I saw it always in my mind with those grey wet skies that we used to think (and in that no doubt, we were wrong too), as the habitual sky of England. There were heavy storm clouds always low over England where Mr. Hardy's tragic figures stepped bravely enough to their doom; and an unbroken grey sky over that troubled,

engaged in the biggest game the world has ever known. Better than all, singing again as they go back to all the mud and horrors that life in the trenches means for them. They are giving a lesson to us and to the world which we pray God we may learn and never forget namely that the "pleasures of life" do not come to those who seek them. To prove this we have only to look at the faces of those whose object in life is to "have a good time", fortunately a section of our community which is gradually decreasing.

Stories we read in the papers from time to time and hear from our friends of our soldiers at the battle front and in hospitals are now in these sad days among the greatest pleasures of our lives. One we rejoiced in lately was an incident related to us of one of the young heroes of Vimy Heights, a Canadian Kiltie. It appears that Scottish Highland Regiments had suffered severely there and many good men had lost their lives. This Canadian boy was wounded, but most of the wounded are cheerful and happy. A Scottish lady visiting him praised, as was right, the splendid bravery of him and his companions, and he replied, like the courteous gentleman he is, that it was one of his pleasures as he lay there to think that the "Canadians had been able to avenge some of the death and suffering that their Scottish brothers had experienced on the same ground."

We can send fine gentlemen to the battlefield it seems as well as good soldiers. It must be a pleasure to us all to know that we have given such fine young specimens of gallant manhood to represent Canada in the world war, for this surely is the greatest achievement we have yet made, the greatest any nation can boast of. Our wealth is still in the making but we can wait for it for we have already something far more important and which we must learn to prize at its proper value in the fine and chivalrous youth of our nation.



The Lion of Lucerne.

that Mr. Hardy writes a story of country life, containing a murder, seduction, desertion, etc., and with the fine cynicism of which he is a master, labels it, "Far from the Madding Crowd." Things are all as one takes them. We have read this beautiful story of the love and life of Gabriel Oak the Dorset Shepherd and Bathsheba, and have forgotten all these horrors. Indeed the story has in our opinion almost justified the existence of the Dorset ewe, an animal we never could admire, and Christmas lamb which is unnecessary and unnatural. Christmas is the time for roast turkey and the good roast beef of Old England, and who so cannot content himself therewith should starve. This, however, is a digression; if Thomas Hardy was a fine cynic in those early days, he has developed into a good

unhappy, mismanaged England of Mr. Wells."

Then after this edifying reading our good British soldiers came to show this Frenchman what they are made of. He says he had never met in his reading any such men as he saw among our British soldiers. Here on the fields of France he met, not Mr. Hardy's tragic figures, stepped bravely enough to their doom, and an unbroken grey sky over that troubled, unhappy, mismanaged England of Mr. Wells.

Then after this edifying course of reading our good British soldiers come to show this Frenchman what they are made of. He says he had never met in his reading any such men as he saw among our British soldiers—Here on the fields of France he met, not Mr. Hardy's tragic



The Old Bridge at Lucerne.

second-rate pessimist now. As to the people who dwell in quiet places "far from the madding crowd," let no man think that the elemental passions do not exist in equal strength under our cottage roofs. Tragedies there are a plenty for those who have eyes to see and hearts to feel them as Thomas Hardy has, but has he and have others who copy him in their attitude any right to send out these travesties of English life and character?

We say No, very decidedly, but a better answer, because a practical one,

figures but the merry England that Shakespeare tells of, mud-covered soldiers singing their jolly songs, with their happy English voices and he adds, Sam Weller himself walking about in khaki, as judging from the pictures of another jolly soldier, Captain Bruce Bairnsfather, he undoubtedly is. Here is the evidence of an eye-witness of the indomitable spirit of our men. Surely if anyone should be unhappy it is these dear lads, discomfort and danger on all hands. Yet off they go to their billets singing and joking arranging for sports as if they were not

Finding Out What One is Good For.

By "The Owl".

Paper V.

WHEN a doctor is called in on a "case", the first thing he does is to make a diagnosis, in other words find out what the disease is. If his diagnosis is wrong the case is not likely to progress very well. If the patient recovers it is in spite of and not because of his treatment.

Now it seems to me that children starting in life are just so many "cases". Each is good for *something*, and upon the diagnosis of his case depends, to a great extent, his future usefulness and happiness in the world. Yes, happiness, too, for no man or woman is truly happy if not filling the very niche for which he or she was made.

Here is a man whose mental calibre, tastes and temperament fitted him to be a farmer. His mother, however, was "ambitious", and so she pushed and pulled him into "the ministry". The result is that he is a most indifferent preacher, never enthusiastic himself, never arousing enthusiasm in his people. He just jogs along.—But should a preacher ever just jog along? He is not extra happy.—Should not a true preacher be one of the happiest men in the world?—feeling pain often, perhaps but happy in the great joy of realizing the importance of his work.

A good farmer lost, a poor preacher taking up the place that should be occupied by a better one.—And all because one foolish woman was "ambitious" in the wrong way, not perceiving that one may be ambitious for "the land" as well as for the church, and that an expert tiller of the soil may be, just as well as a good minister, one of the noblest figures in the world.

HERE, again, is a miserable, unhappy, unsuccessful farmer, who sits, often on a fence, and whittles a stick, and wishes he were yonder in the town working in a shop. He always wanted to be among machinery and people. This alone life on the farm never appealed to him. He has not patience to find out the things that must be found out if one is to be a good farmer. In short he has no talent for it, and so he wastes his life, to a great extent, because, somehow, he was forced on a

farm when his place was not there at all. Again, a poor farmer gained, a master mechanic, perhaps, lost.

If the youth feels within him the urge of great ability in other lines, the result is similar. The great lawyer or statesman or doctor, nipped in the bud and forced to stay on the land, may do the work well, but it will always be somewhat sullenly and half-heartedly—no joy in it. Compare him at any time with the real farmer, "over the fence", who loves his work and enjoys every minute of it, goes whistling to the field in the morning, reads every screed he can find on agriculture and stock-raising, is never happier than when talking over the crops with a neighbor, of an evening,—compare the one young man with the other and surely the moral will appear.

After all we do best what we do happily, best, at least, so far as our own lives are concerned,—these strange lives of ours, made up of such an odd jumble of character, opportunity, work and aspiration.

BUT it is so hard to find out what some boys and girls are good for." Right, you are. Possibly one child in a hundred shows, from the very first, a marked bent for anything.

It seems to me that, for this very reason, the opportunities for observing the bent of children should be considerably widened, even in the public school. For instance, in the rural schools, there should be, in addition to the essentials for all education, such branches as the following:

Agriculture—really taught by someone who knows, not by a teacher of seventeen who has merely picked up a smattering on a 6 x 8-foot plot in a Normal School garden. If there is no other way, why not secure the best farmer in the neighborhood for an hour a week and pay him for his services? It might be inconvenient often, for him to spare that hour, but he owes something to his country. Under his direction the teacher might carry out the rest of the lessons in agriculture including the use of the school garden.

Domestic Science and Manual Training: Surely the time will come when every rural school will have a warm, light, airy, well-equipped basement, in which these subjects can be taught. There may be boys in the school who are the "makings" of master builders, great civil engineers, inventors. Give them a chance to find out what they are good for, and don't make farmers of them if they will only hate farming.

Art—One cannot be much in favor

of the teaching of "art", as it is usually taught in the public schools. Not one teacher in ten thousand is an artist herself. But it is quite possible to have books in the school, showing the work of great artists; also models to be set up for the pupils to draw or paint. The teacher who is not an artist may quite possibly be able to recognize genius in art when she sees it.

Medicine, etc.—In the school library, too, there should be books on anatomy (illustrated), books on first aid, nursing, electricity, in short on any and every subject that deals with life. These may serve as reference books for the whole section, but still better may help the teacher to find out what the boys and girls are good for. By observing the class of books that a lad takes down in "spares" again, and again, and again, she can, nine times out of ten, gauge what he is interested in. Her next duty is to talk with the parents and see what can be done about it.

MONEY? Yes, all this costs money. But what are the boys and girls worth?—Put them into their right spheres and they will not only make money—but so much more than that—for themselves and the world.

Of course everything cannot be done at once, but even ten dollars every year may be made to do wonders. It is "up to the teacher", assisted by a committee of the wisest people in the section to see how it can best be expended. Next time The Owl will endeavor to give some suggestions in regard to this.

House Plants.

Part IV.

IF length of bloom is a requirement, the first place should assuredly be given to *Hydrangea Hortensis*, whose great clusters of bloom appear in summer and last for months, first pink but changing later to a pale green.

The plant will grow in any rich garden soil, if kept from the hot sun and watered frequently. It should be given plenty of root room. Late in fall gradually withhold water, and put the plant in the cellar over winter, keeping it rather dry until spring, when it should be repotted and cut back to one or two pairs of buds. The best soil for repotting is composed of loam leaf mould and sand with a little dried cow manure. During the growing season give liquid manure occasionally. If preferred the plants may

be set out in the open ground, but in a slightly shaded place in summer. New plants may be started from cuttings in February or March.

Impatiens Sultani—This plant, ordinarily and incorrectly called "patience plant", is really a balsam, a cousin of the garden balsams and the beautiful little swamp flower known as "touch-me-not", or "jewel weed". It is easily frozen, but otherwise is very easy to grow, doing best when not exposed to bright sunlight, and in a light soil. Give plenty of water and shower the foliage every day to prevent red spider.

Jerusalem Cherry (*Solanum pseudocapsicum*) is a very pretty little plant with tiny white flowers and red berries, grown in the same way as geraniums. After the berries disappear rest the plant for a while, and in summer plant it out in the garden, taking it up carefully in fall.

Olaheite Orange.—A handsome dwarf orange that may be grown in pots; has fragrant pinkish flowers followed by beautiful edible oranges. Rest the plant in late fall and early winter, giving just enough water so that the leaves will not drop, then move to a sunny place with warmer temperature.

India Rubber Plant.—Belongs to the fig family. In its native country grows large, and is one of the best sources of rubber. Very easily grown as a house plant. Start in small pots, shifting to larger ones as necessary. In the summer it may be planted out in the garden if preferred. Give plenty of water and, occasionally, some liquid manure. New plants may be started in this way: Make an incision in the stem of a branch, and insert a match or something to keep the wound open. Bind some moss about the place and keep it wet. When roots have developed in the moss cut off the whole shoot and pot it, putting a little wax over the cut end of the old plant. If scale appears apply an insecticide—e. g. fir-tree oil solution.

Ivy.—English Ivy, if one cares for vines in the house, is greatly to be recommended, as it grows well, stands dust and hot air, and will flourish in shaded parts of the room. Give ordinary soil, enough water to keep it moist, and liquid manure once a week. Wash the foliage occasionally to prevent scale, scrubbing the stalks with soapsuds.

Oxalis sometimes called *Shamrock*.—Bulbous or tuberous herbs, easily grown. Give abundance of water until flowering season is over, also a little liquid manure. Afterwards rest the plants, giving less

and less water, and finally laying pots on sides until next season. Start the roots again in August or September.

Pelargonium.—Handsome plant of the geranium order. Cuttings should be started in sand, and when rooted potted in soil that is not too rich, else spots are likely to appear on the leaves. The best soil is a good clay loam without manure. Shift from pot to pot as the plant grows and the pot becomes filled with roots, packing the soil in firmly. When the plants are large enough for a 6-inch pot give manure water occasionally. During the hot months do not expose to too bright sunshine. Do not syringe the foliage or flowers, and do not give too much water at any time or spots may appear on the foliage. In dead of winter give very little water, increasing the allowance in February and March. Keep in slight shade when in bloom. The *Pelargonium peltatum* or *Ivy Geranium*, a climber, is a very handsome plant for the home and may be trained on a trellis.

Dressing Well on Little.

THE woman who always looks well dressed on a moderate expenditure is invariably the one who chooses conservatively—things that are always more or less in fashion. Among these are the perfectly plain suit, the plain long coat, a pretty sweater coat, and a rather plain hat in sailor shape, or, for an older woman, a plain small hat on something of the turban order. She chooses good material, has it well made, even though the cost is considerable, and wears her things a long time. Of course, if she is very clever at sewing, she may make even her coats herself, but she will be very particular about the linings and the finish, pressing all seams very thoroughly.

But the well-dressed woman always keeps her clothes well pressed. It makes a great difference in their appearance.

In dresses, as well as coats and suits, the woman who "looks well on little", finds economy in plainness. She insists on material that is "good", but spends no money on trimmings, which after all, seldom lend much real beauty to any garment. Perfect fit, lines suited to the figure and becoming color, count for so very much more. Of these things she makes a study; it pays. As a rule she keeps rather constantly to one color, the one that suits her best. This is the plan adhered to by the French women, of whom one who has known much of them in France says:

"The French woman sits down and counts the cost; plans out her clothes according to a scheme of color; one year perhaps she prefers blue, the next green, but whichever it may be all is in harmony. She will get all the little accessories for her dainty toilet, the collars, the ties, the sashes, at the same time, knowing that in these trifling details the supreme taste and individuality of the woman reveal themselves. It is all a question of degree. The smart woman has more toilets, a greater variety of costumes, but the same severe eclecticism applies to all. The Frenchwoman would as soon dress at haphazard, or wear a bodice that did not fit and a skirt that did not hang, as she would give up her pretty courtesiveness, her grace of movement, her supreme 'coquetterie de femme.'"

If trimming is permitted at all, it is just a bit of good lace at throat and wrists, or the mere touch of hand-embroidery that gives distinction and color. Pretty buttons, too, are given place, but only where they are needed.

This woman also knows that collars are an important item, and that they cost considerably if bought ready made, so she makes them herself, of fine muslin, satin or Georgette crepe, finishing the hems with knot-stitch, or having them hemstitched at some store which has a machine for doing the work.

She also knows that clean, whole gloves and neat, well-kept shoes win half the battle of a refined, well-dressed appearance, and so she washes her gloves frequently, and keeps her shoes well polished. Even in winter she is likely to wear silk gloves (with double tips), as she has found that kid gloves are hard to keep clean and are likely to become stiff if the hands perspire.

When not in use her shoes are kept on wooden shoe trees or are stuffed with paper or rags to keep them in shape. Stockings are changed very frequently as



A House that Suggests a Home.

"Our dwelling houses should be built to last, and also built to be lovely."—Ruskin.

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24 to 32 wa
Price 16

this makes them wear better; the perspiration from the feet rots them. She takes care, too, not to let her shoes get wet, a calamity which is likely to make them spread.

Speaking of wet days—she is always provided with a raincoat and umbrella, for she finds that this also pays. A dress or suit once wet scarcely ever looks the same again.

Finally she makes all her old white shirtwaists over into underwaists and her old skirts into petticoats (if she has not already transformed them into bloomers for the small girl of the family, for whom, nowadays, bloomers invariably take the place of petticoats). The shirtwaists are quickly made into underwaists by cutting off the sleeves, lowering the neck, and finishing with narrow lace. The skirts only require to be washed, shortened, pressed, and finished with braid or a narrow frill.

The Fashions.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. Address: Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont. Be sure to sign your name when ordering patterns. Many forget to do this. See under illustrations for price of patterns shown in this week's issue.

When ordering, please use this form:— Send the following pattern to:

Name.....
Post Office.....
County.....
Province.....
Number of Pattern.....
Age (if child or misses' pattern).....
Measurement—Waist..... Bust.....
Date of issue in which pattern appeared.....



No. 9600 Coat for Misses and Small Women, 16 and 18 years.

No. 9610 Straight Scarf and Muff, one size.



9519 Fancy Blouse 34 to 42 Bust. Price 15 cts.
9526 Panel Skirt, 24 to 32 Waist. Price 15 cts.



9548 Child's Empire Dress, 4 to 12 years. Price 10 cts.
9527 Child's Pajamas, 2 to 8 years. Price 10 cts.



9551 Military Coat, 16 and 18 years. Price 15 cts.
9558 Two-Piece Skirt, 16 and 18 years. Price 10 cts.



9550 Surplice Blouse, 34 to 44 bust. Price 14 cts.
9550 Four-Piece Skirt, 24 to 32 waist. Price 16 cts.
9545 One-Piece Dress, 34 to 46 Bust. Price 15 cts.

Hope's Quiet Hour

On Active Service.

A little book containing thirty short poems written by one of our Canadian soldiers, has come into my possession lately. It is bound in khaki paper, tied with red, white and blue; and the proceeds resulting from its sale will be given to Red Cross and Patriotic Funds. The little book would give pleasure to other soldiers, and perhaps some of you may wish to procure copies to send overseas. The poems are by Oliver E. Baillie; and copies may be obtained from his sister, Miss Baillie, 21 Lonsdale Road, Toronto—price 25 cents each. These verses come burning hot from the heart of a soldier—one of the first Canadian Contingent. They are well named, "On Active Service". I will quote a few lines:

The first poem, "The Call," expresses England's appeal.
"The nations had pledged their honor
That the lamb should not be shorn,
When a shot rang round a startled world,
And a scrap of paper was torn.

"Then roused Britannia proudly,
And her glance flashed o'er the sea,
'Sons I have loved and cherished,
Say, do ye stand with me?"

"Will we show the Teuton bully
That the bond of the blood holds true,
Who toucheth the mother of lions,
Toucheth the lions too?"

The next poem gives Canada's eager answer to the Call.

One poem, "Quo Vadimus", is a free translation of some verses found in the kit of an unknown German soldier. It sings sadly of the honors won by the German warriors—of the medals and crosses of iron:

"Can a man have heart in the fighting
When his children are starving behind?
Surely we're reaping the whirlwind,
We who have sown the wind.

"Babes of the mothers of Belgium,
Slain in our drunken pride,
Babes of the Lusitania,
Sobbing beneath the tide.

"What have we done, Almighty?
What are we going to do?
Have we thought we dealt with an earth
power,
To find we must deal with You."

Then comes "A Song of the First Contingent", which tells of mountains and prairies, rivers and pines of Canada and then turns in homesick longing to loving hearts at home:

"Hearts that encircle us still with their
love,
Love that is pure as the angel's above,
Tender as pure, yet wondrously strong,
To guide us aright, to hold us from
wrong."

In "The Optimist" we see the spirit of the soldiers who persist in smiling when smiling is no easy matter.

"Were you ever up against it, with your
belt's last hole drawn in,
And the shrapnel and the splinters
flying round like merry sin,
And you couldn't heat your rifle for the
high explosive's din,
And you knew that things could get
no worse, and then you had to grin?"

"But if suppose you hadn't grinned, but
just sat down to cry,
And by shifting your position got a nice
one in the eye,
Not 'a cushy,' or 'a blighty,' but a one
that made you die,
Don't you think the smile, or grin, or
laugh, were better than the sigh?"

When mention is made of those who
were "so young to die," we see their
souls going up to God:

"What matter if they've missed a day or
two
Of life on this torn earth? Why should
we rue
That early they have passed to their
reward
Beyond those portals that we all must
through?"

Here is a verse from one of the sterner
poems, an arraignment of those who
plunged the world into this agony of war.

"Kaiser, now you know it, war is easy
made,
A madman is his palace can start the awful
trade;
A proud and powerful nation, secure
within its might,
Can tear a scrap of paper and swear that
might is right;
But peace is God's own gift to man, the
world is in His care,
And He will never pass with scorn the
little people's prayer."

No matter how terrible outward conditions
may be this young soldier-poet
never loses his inward peace. When
he passed through the fire Christ was
his close Companion. These lines were
written in June 1916—at Ypres salient.

"Let not your heart be troubled,
Trust in His tender care,
Fear not the terrors of battle,
Jesus Himself is there."

Many of our soldiers are loyal subjects
of the King of kings, and it is fine to have
them as bold and outspoken in their
loyalty to their Divine Master as Oliver
Baillie. His faith may help other young
men to believe in the Presence of their
unseen Friend, so I hope some of our
readers will procure copies from 21

Lonsdale Road, and send them to friends
in the war zone.

But don't forget to follow the little
book with your prayers. None of us
can tell how much good is being done
every day by God's power working
through the prayers of our Canadian
women. One of these a reader of the
Advocate—once wrote to me:

"I have learned this, dear Hope, that
just to steal away, if only for a moment,
from life's many cares, just to look into
His face, and to feel His Spirit answering
to my own, lightens the toil and sweetens
labor, and puts a song in my heart."

One day two friends were conversing
together, and one said that he was very
unhappy because he had lost faith in God.
The other man made no attempt to
argue with his friend, but prayed con-
tinually for him—"Open his eyes that
he may see." A year and a half later
the friends met again, and the man who
had lost his faith joyously declared that
his life was now consecrated to God's
service. How had his friend's inter-
cession helped him to see the Light of
the world? I don't know how prayer
helps—but I do know, from my own
experience, that more things are wrought
by prayer than this world dreams of.
We, also, are—or should be—on active
service; and our Commander has equipped
each of us with the mighty weapon of
prayer. Are we using it, or is it rusty
from disuse?

It is our thoughts and desires that
speak loudest in God's ears. Words of
prayer may be a mockery, if they are
only lip-worship. "It is better to have
a heart without words than words without
heart."

DORA FARNCOMB.

Christmas Gifts for the Needy.

A constant stream of donations for
the needy has poured into—and through
—the Quiet Hour purse this week. Two
dollars came from Mrs. A., and five
from a country Sunday School. A
"friend" sent two dollars and another
"friend" sent one. From M. V. M.
came three dollars, from S. J. T. a
dollar and some booklets for the "shut-in,"
and from Doris two dollars for the sick
and lonely and a pretty card for "Hope"
—who is, I am glad to say, neither sick
nor lonely, but very grateful to her kindly
and generous friends. The children of
Mrs. S. sent three dollars (their year's
savings) to brighten some poor children's
Christmas. Many packages of papers
for the hospital have also arrived, and
a letter from a farmer's wife which made
one feel even more happy than usual—and
I am usually very happy.

I can breathe freely again, for the
Christmas gifts you have entrusted to me
have all gone out on their errands of
mercy, except a little silver (which is
keeping the Quiet Hour purse warm)
and some papers and magazines which
will have to wait a few days until I have
time to pass them on.

I wish you all a very happy New Year.
DORA FARNCOMB,
52 Victor Ave., Toronto.

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.]

One Thing We Must Do.

JANUARY 10th, and we are now well
launched into the year 1918. We
cannot look far forward into the
mists of it, but of one thing we are sure:
that again we must economize in our
homes—if it be only to have more on
hand when the next Victory Loan is
called for—and that we must use every
other kind of food possible to spare beef,
bacon and white flour for Europe.

When one speaks of "economizing in
the homes" nowadays, however, one never
means scrimping, especially in food.
Scrimping in food means inefficiency;
economy should mean the greatest
efficiency; for it is very poor economy
indeed that saves on food at the expense
of strength. Real economy is expressed
rather in the following quip, parodied by
some wag and published in the "New
York Sun:"

Well, I y? She n't you g their t know ough for t??"

smiling.

ed Mrs. m hand ouldn't hing so "

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chased practically an entire herd of 600 or 700 from Montana. The herd was transported across the international boundary line by train from the Pablo ranch. The rounding up of these untamed animals and their young was no light task, and 150 of the most unruly had eventually to be left behind. An effort will be made to move these later.

Ukrainian and Ruthenian farmers in Saskatchewan, in one hour subscribed \$10,000 to erect a Ukrainian College.

Palestine is now twice as densely populated as the United States. It contains some 700,000 inhabitants, of whom the Jewish colonists before the war numbered only about 15,000.

Dr. Geo. J. Fisher, in an article in *The Independent* describing a number of experiments with tobacco using, states that smoking even a single cigar increases the heart rate and blood pressure. "As far as we have gone", he says, "we seem to be compelled to believe that smoking is not beneficial. The experiments were made upon men twenty-one to twenty-five, of unusual physique, men accustomed to smoking and those unaccustomed; both groups were affected and in all the experiments there was a remarkable consistency in the character of the results obtained. The case seems to be against tobacco."

The Beaver Circle

That H8ful Boy.

(A "figurative" rhyme.)

1 f8ful day a boy went 4th;
His dog went 2, 4 fun;
The dog 4stalled a Iton cat,
Which 4thwith tried 2 run.

That poor at10u8ed cat
Dashed str8way 2 a fence,
And sounds of 3fold rage and h8
Now eman8ed thence.

"This chance I can't af4d 2 miss,"
The boy did specul8;
4thwith he threw 1 stone, which puss
Avoided all 2 l8.
But some 1 now 2 his surprise
At Ice in view appears,
And chides in 4ceful tones be9
That boy of 10der years.

"At10d 2 me," his teacher says,
"Why, I'm disconsol8!
I'll 40fy your 10der mind
With 4titude, not h8."

But quite in4mally the boy
Calls to his ca9 creature,
And pointing 4th his 1 in10t,
He 6 him on the teacher.

Little Bits of Fun.

Pardonable Curiosity.—Rector after exposition of Sunday School lesson to infant class—"Now, would any little boy or girl like to ask me a question?"

A Terrible Infant—"Have you got on trousers under that nightgown?"—The Lamb.

A gentleman, who had called to see Mr. B., found his little son, Frank, in the library, rubbing his eyes and gaping. "Sleepy?" he inquired. "Um," grunted Frank. "I suppose you usually go to bed with the chickens?" smiled the visitor. "No, I don't!" snapped Frank. "I have a little bed in my room all to myself."—Sacred Heart Review.

Senior Beavers' Letter Box.

Wants to be a Boy Scout.

Dear Sir.—I am now twelve years old and wish to be a boy scout when I get old enough. How old should I be, what height? How much does the uniform cost, or do you get it free when you join? What do they do? Do they get paid for scouting or not? How do they drill? Do they use a gun? because I would always like to use one. Please answer as soon as possible because I wish to know. Glamis, Ont. W. GROVES.

The best way to do would be to get some grown man to start a Boy Scout corps right in your own neighborhood

Preserves getting low?
Tide over the winter with
CROWN BRAND
CORN SYRUP



Everybody likes this delicious Table Syrup—and it's much less expensive than butter for the children to eat with bread.
At all Grocers—2, 5, 10 and 20 lb. tins—3 lb. Glass Jars.
Write for free Cook Book. 33
THE CANADA STARCH CO. LIMITED, - MONTREAL.

Wash Day No Trial With a
PATRIOT
Spiral Cut Gear
Handy-Washing Machine



A CHILD can operate a PATRIOT Washing Machine, even when heavily loaded. This up-to-date hand washer gets its power from a balanced fly-wheel seated on steel ball bearings and driven by a lever which acts directly upon spiral machine cut gears.

It runs at high speed and does its work most thoroughly, yet with little energy on the part of the person running it.

Three features make the PATRIOT the machine you should buy. They are

High Speed Ball Bearings Cut Gears

Its convenience, durability, smoothness in running and first-class finish are other points you will appreciate.

Ask your hardware dealer, or write for illustrated descriptive folder.

Dowswell, Lees & Co., Limited
Hamilton, Canada

or nearest village. He could write to Mr. H. G. Hammond Dominion Bank Chambers, Bloor and Shelburne Sts., Toronto, (he is Provincial Secretary) for all information. A book called *Scouting for Boys*, by Baden Powell, will also help, and if you can't get it at your nearest bookstore write to T. Eaton Co., Toronto, about it, asking the price. There are many other books about Boy Scouts. Perhaps some of our Beaver boys can tell us about them.

In the meantime I'm almost sure, you yourself will write to Gregory Rawlings, whose letter follows this.

Dear Puck and Beavers.—This is my third letter to your charming Circle. I have not seen either of my letters in print, but got courage to try again. My father has taken the "Farmer's Advocate" as long as I can remember. I always look forward to the day when the "Advocate" comes, as I like reading the letters.

Have any of the Beavers "Erector" sets? I have, and I like mine very much. I have a No. 2 set, as it is large enough for me. I am going to school and try to go regularly. I am in Jr. fourth book. I like school fine. Our teacher offered a prize to the one in my class who got the highest per cent. in our examinations at Christmas.

Are any of the Beavers interested in Boy Scouts? I am. I enjoy scouting very much. If any of the Beavers are scouts, I wish they would write to me. I like reading very much. I have read many books such as "Limpy", "Sam's Chance", and others. Isn't this war an awful thing. I hope it will end soon, so many of our boys are having to go. I think I will close now, as my letter is getting rather long.

GREGORY RAWLINGS, age 11).
R. R. No. 4, Petrolia, Ont.

P. S.—I wish some of the Beavers would write to me, as I will answer all letters.

Dear Puck and Beavers.—It is a long time since I have written to you. I wrote twice before and both letters were in print. I was out of school for two weeks with the chicken pox, but I am going back to school again. I am in the fourth book at school and intend to try entrance at mid-summer. I like all the subjects except Grammar. Our teacher is Miss Forster from London.

There were lots of hickory and beech-nuts this fall so the squirrels will have a good winter's supply.

I am taking music lessons and have to practice half an hour every night.

I have read a great number of books but I like the one about "Uncle Remus" best of all. I also liked "Bad Little Hannah" and "Patsy", by Kate Douglas Wiggin.

Well I guess I will close.
MARION SYMINGTON.

Dear Puck and Beavers.—I have been a steady reader of the "Advocate" ever since I learned to read, and enjoy the Beaver's letters very much. So as I saw my other letters in print, I thought I might risk my third one. Last fall we moved to Vankleek Hill, from the

3 NEW SONG FOLIOS. 15 CTS. EACH

Battle Songs of the Great War
Life Songs
Heart Songs

400,000 copies of these songs sold in Sheet Music form. The folios contain \$1.25 worth of music. Send 45c. for all three.

THOMPSON PUBLISHING CO.
75 CAY STREET, TORONTO

A Better Separator For Less Money

VIKING

Cream Separators of Quality

FARM FOR SALE

Sunnyhill Stock Farm, 300 acres

One of the finest grain and stock farms in Ontario, twelve miles from Lindsay, one mile from Grass Hill C.P.R. station, and two and a half to G.T.R. Close to church and school. Excellent water, including good well and spring creek. Fine dwellings, bank barns on stone foundation, good stables. May be sold all in one or divided.

Sealed tenders received up to February 1st. Further particulars apply:

Wm. Manning & Sons, Woodville, Ont., or Wm. Manning, 99 Pacific Ave., Toronto, Ont.

When writing please mention this journal

Save Weeks of Time

Save Thousands of Feet of valuable Timber



THE best barns are no longer built with heavy timber frames.

The new idea in barn-building is to use trusses. This idea increases the space and convenience of the modern barn. It saves the waste of fine timbers that are so much more valuable for other purposes.

Anyone planning to build a barn should look into this idea before spending time needlessly in hauling out timber. A little investigation shows that wonderful savings in time and money can be made; the time of cutting and hauling the timbers; the value of the timber; the weeks upon weeks of time in the summer when time is so precious.

For the new-style barn—the Steel Truss barn—is put in a few days by a few men. There is no longer need for the old framing gang, the barn-raising bee, the hungry and high-priced crowd of mechanics.

The Old Idea Was Extravagant

Farmers have not always had time to figure out what these old-time barns actually did cost. To-day they must figure it out. Labor must not be wasted. To-day it is criminal waste to put into

barns fine timbers of oak, hickory, ash. We have even seen black cherry timbers in some barns. These items, the extra weeks of labor, the value of the timber, the cost of feeding a gang of barn-builders, should and can be saved. They are valuable. They are money. They add needlessly to the cost of building.

Learn What Other Farmers Have Done

Now, before you start carrying out your building plans, is the time to see some Preston Steel Truss Barn plans. They show how other farmers avoided trouble and waste; how they made the very best use of their barn and stable space.

We will plan a barn for you exactly as you want it and the plans will not cost you a cent. Our barn experts have planned many of the finest barns in Canada. Their

advice, after building so many barns, and "talking barns" to so many practical farmers, is worth money to any man. It is yours to command, free of charge.

100-Ton Barn, \$1,766

We still have large supplies of building material under contract at favorable prices. This makes possible a very low price to farmers in the early months of 1918. All the materials for a barn to hold 100 loads of hay or grain will be delivered, freight paid to any point in old Ontario, for \$1,766.

For a 50-ton barn the price is \$1,186. These prices include everything needed to build fine, fireproof and lightning-proof barns under the Steel Truss patent form of construction.

Write to-day for full information. Tell us something of the barn you have in mind. You will be delighted with the service we will give you in planning every detail of a fine barn for your farm. Please use the coupon.

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ADDRESS

F. Advocate

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BISSELL SILO

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The BISSELL SILO has strong, rigid walls, air-tight doors, hoops of heavy steel. Sold by dealers or address us direct. Get free folder. Write Dept. W.

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The latest in design for rural telephone systems. Write for particulars.

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For reliable Apple, Pear, Plum, Cherry, Peach and Ornamental Trees, Shrubs, Roses, Grape Vines, Berry plants, Evergreens, Hedges, etc.—good ones, too. We ship direct to customers. Our trees are extra fine. Write us for prices on your lists for early Spring planting. 38 years at it. No agents. A. G. Hull & Son, St. Catharines, Ont.



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BROWNS NURSERIES, ONT.

Gossip.

Baird's High-Producing Jerseys.

In glancing over the numerous live stock advertisements appearing in these columns, we would advise our dairy readers to make special note of the offering of young Jersey bulls mentioned in the copy of R. & A. H. Baird, of New Hamburg, Ont. In many respects, the Baird herd of Jerseys are unequalled in the whole Dominion. To be able to make the somewhat startling statement one needs only to glance over the daily records of the yearly production of not only three, four or five cows in the herd, but of the entire 50 head that are of milking age, and then a very simple calculation reveals the wonderful evidence of over 400 lbs. of butter for every cow, heifers included, in the entire milking herd. In addition to the 50 breeding females referred to, there are also in the neighborhood of 100 head of younger heifers, mostly yearlings, and every one was bred and raised on the farm. As yet, however, every thing in the herd is not pure-bred. Many of the better individuals and heavier producers among the grades are most excellent results of careful grading for the past 25 years, and the herd still numbers a few of their descendants. These grades, however, are both tested and cared for in the same way as the pure-breds, and even Baird grade heifers, safe in calf to the farm's good pure and richly bred sires, have been in great demand for years. The present stock bulls are Brampton Dairy Farmer and Brampton Bright Togo. The former is out of Primrose of Edgeley, a 11,264-lb. full sister to Sunbeam of Edgeley, Canada's champion butter cow. The latter bull, "Brampton Bright Togo," is by Brampton Stockwell Junior and out of a daughter of the great sire and show bull, Bright Prince. The young bulls now advertised for sale are got by these sires, and as no bulls are retained that are not from good record cows, each and every calf advertised should be worthy to head the best and strongest of herds. Full particulars and quotations will be gladly furnished by Messrs. Baird at all times.

The Heart of the World.

EDITOR "THE FARMER'S ADVOCATE":

The heart of nature is right; the heart of man is wrong, and where the heart is wrong the head is apt to be wrong also, hence come envy, avarice, inordinate lust of power, wars, tumults and "vaulting ambition" which "oft o'erleaps itself." Sandy Fraser was right, as usual, in a recent article when he said, "A change of mind and heart is needed." Man needs to get into harmony with nature. In the great universe about us, all is apparently tranquil. The stars roll on in their courses from year to year, from age to age, in evident regularity and peace, without friction, shock or collision. The astronomer, as he scans the heavens, viewing millions of orbs with his great telescope, discovers nothing but harmony and glory; no evidence of lawlessness, no clash or crash of contending worlds, as of man's armies and engines of war. Moral law and order, no less than natural law, is everywhere in evidence. Emerson says: "Moral law lies at the centre of nature and radiates to the circumference." Yes, the heart of the world is right. So long as man will not receive the light of knowledge his troubles will not cease. Man is his own despoiler and foe; nature is his friend, not his enemy. If she chastens him, it is to teach him the needed lesson—obedience of her law, or, as a necessary penalty for its violation. After much scourging, man will learn his lesson, but he must first be tried as by fire, and let us trust and believe that his exaltation will be the greater.

Nature, in its formative processes, passes through many transitions. Thus the worlds were born, the suns and stars were swung in their orbits and rounded into beauty, symmetry and grandeur. Man is part of nature, and there must be concord. Two thousand years ago, St. John, with the far vision of the seer, postulated this earth as the dwelling place of exalted man, when "there shall be no more death, neither sorrow nor crying."

Kent Co., Ont. W. J. WAY.

EDWARDSBURG GLUTEN FEED

The feed that means more milk and richer milk. Write for prices.

Guaranteed **23% PROTEIN**

The Canada Starch Co. Ltd.
TORONTO Fort William
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McQUAY-NORRIS LEAK-ROOF PISTON RINGS

The Piston Ring That Stands on Its Record —Not on a Promise

McQuay-Norris LEAK-ROOF Piston Rings have seven years of successful performance records behind them. Seven years of trial and test. Seven years building up a reputation with engineers and engine users founded upon what they've actually done in increasing engine efficiency and reducing operating cost.

Performance has proved the enduring quality of McQuay-Norris LEAK-ROOF material and the merit of its exclusive design by which alone equal tension (the secret of maximum compression) is possible.

Your dealer can get you any size or over-size quickly. Over 300 jobbing and supply houses in all parts of the country carry complete size assortments.

SEND FOR FREE BOOKLET
"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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McQUAY-NORRIS Superoyl RINGS

A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-ROOF Rings in lower grooves to insure maximum compression and fuel economy.

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BEATS ELECTRIC or GASOLINE

Here's your opportunity to get the wonderful new Aladdin Coal Oil Mantle light FREE. Write quick for particulars. This great free offer will be withdrawn as soon as some distributor starts work in your neighborhood. You only need show the Aladdin to a few friends and neighbors; they will want one. We give you yours free for this help. Takes very little time, no investment. Costs nothing to try the Aladdin 10 nights.

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common coal oil, no odor, smoke or noise, simple, no pumping up, no pressure, won't explode. Tests by Government and thirty-five leading universities show the Aladdin gives three times as much light as best round wick flame lamps. Won Gold Medal at Panama Exposition. Over three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed. And think of it—you can get it without paying out a cent. All charges prepaid. Ask for our 10-day Free Trial Offer and learn how to get one free.

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If you have a gasoline engine—if you have electric power then no longer need you even work the lever of a hand-operated power washing machine. Let power help your work as it does your husband's!

Of course you realize that a washing machine, even run by hand, is quicker, easier, better than washing by muscle-power. But here's a washer that does everything—all you have to do is "turn on the juice."

Maxwell

Power Bench Washer

—will do the washing while you do other work! No need to watch it—it can't go wrong. It will do the wringing too. Easy to operate—simple and strong in construction—perfect in mechanism. Made in one-, two-, or three-tub size; operated equally well by 1/2 h.p. electric motor, or any gasoline engine. Write us to-day for full particulars—it will be time well-spent.

38 MAXWELLS LIMITED, Dept. W ST. MARYS, Ont.



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Dual-purpose bulls, 20 young cows and heifers—bred, some calves by side.

Thomas Graham, Port Perry, R.3, Ont.

R. O. P. SHORTHORNS
THE EVERGREEN HILL HERD
Present Offering—Four young bulls from R. O. P. dams, and each tracing to three R. O. P. sires.

Plaster Hill Shorthorns
Two 2-year-old bulls, one yearling bull, one bull calf.

Glenfoyle Dual-Purpose Shorthorns
Herd bull College Duke 4th, 95430, big, thick, young cows and heifers for sale.

Questions and Answers. Miscellaneous.

Scours.

I have a two-months-old calf which has the scours. It has been fed clover hay, a little oat chop a handful of oil-cake meal, and 4 quarts of milk.

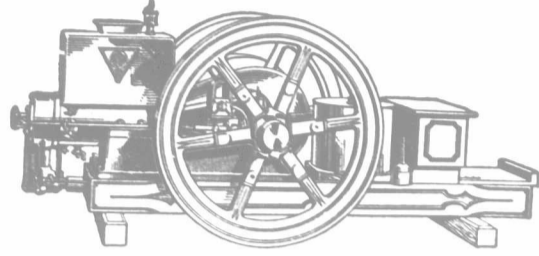
Ans.—The trouble may be attributed to a number of things. Over-feeding, sudden changes in feed, wet stalls, unclean feed pails, feeding the milk too cold, etc., may cause scours or it might be due to an irritation of the mucous membrane of the intestines.

Pigs With Sore Feet.

I have a bunch of pigs about three months old that have been kept in a box stall which has a concrete floor.

Ans.—From the symptoms given the feet must have been injured in some way. However, it is just possible that they are suffering from an attack of rheumatism.

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- An Alpha will saw more wood in a day than you can saw by hand in a week.
It will pump water all day long without watching.
It will run your separator, churn or washing machine.
It will run a thresher, feed cutter, or silo filler.

Ask for catalogue, prices and complete information. Made in eleven sizes, 2 to 28 H. P.

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Herd headed by "Best Boy" = 85552, and "Browndale Winner" = 106217 =. Bulls and females for sale. R. & S. NICHOLSON, PARKHILL, R. NO. 2, ONTARIO.

THE HAWTHORNE SHORTHORNS

5 young bulls, and several females bred to the herd sire, Royal Choice "79864," a Toronto winner. Both milk and beef strains. R. R. 4, PETERBORO, ONT. G.T.R., C.P.R.

WELLAND DISTRICT SHORTHORN BREEDERS' CLUB

are still offering young bulls of serviceable age, and a few breeding females. CHAS. GAINER, Secretary, Box 607, Welland, Ont. A. E. HOWELL, President, Fenwick, Ont.

BURNFOOT STOCK FARM

We have a choice collection of dual-purpose Shorthorns that are of fine beef form as well as good milk and butter-fat producers. S. A. MOORE, Caledonia, Ont.

HIGH-CLASS SHORTHORN BULLS

We have a number of choice young bulls on hand, ready for service. Some are straight Scotch and others are bred for milk production. GEO. MORDEN & SON, OAKVILLE, ONTARIO.

FLETCHER'S SHORTHORNS

Our herd of Scotch Shorthorns represents Orange Blossoms, Kiblean beauties, Matchless, Mysies, Missies, Clementina's, etc. GEO. D. FLETCHER, ERIN, R. R. 1, ONT.

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Herd headed by Gainford Matchless, one of the very best sons of the great Gainford Marquis. ELORA, ONT.

IRVINEDALE SHORTHORNS

Herd headed by Marquis Supreme 116022. For sale at present, 9 granddaughters of (Imp.) Right Sort, and a good lot they are; also 2 bulls (roans), 15 months old, by Gainford Select. JOHN WATT & SON, R. R. No. 3, Elora, Ont. G.T.R. & C.P.R.

SPRING VALLEY SHORTHORNS

Herd of seventy head, straight Scotch, good individuals. Headed by the great show and breeding bull, Sea Gem's Pride 96365 and Nonpareil Ramsden 83422. KYLE BROS., DRUMBO, ONT. (Phone & Telegraph Via Ayr.

\$800 MEADOW LAWN CLARET 2nd
Sired by Escana Ringleader 95963; dam, Claret Cup 66757; by Orange Victor 38371. A flashy roan heifer; long, thick, silky hair; loose, mellow skin.

Questions and Answers.
Miscellaneous.

Discharge of Mortgage.

Who should pay for the drawing and registering of the discharge of mortgage, the giver or the holder? A. R.

Ans.—The man upon whose property the mortgage was drawn should pay for registering the discharge of that mortgage.

Heating Water For The Stock.

I have a large water tank into which the water runs steadily, but it freezes over as well as around the sides so that the cattle do not care to drink. Would a cast-iron tank heater be all right? Has anyone had experience with one? G. S.

Ans.—Personally, we have not had experience with a heater, but we understand that they work satisfactorily. During cold weather it is undoubtedly better for stock if the chill is removed from the water. Where the tank and trough are located in the stable, the water does not become so ice-cold.

Pigs With a Cough.

What is the cause of pigs coughing from the time they are weaned until they weigh about 150 pounds? They have a warm, dry pen which is cleaned every second or third day. We had thought it was caused by worms but I tried worm cures without effect. Up to the weight above mentioned they appear restless and cough a good deal. What is the cause and remedy? S. E.

Ans.—It is rather unusual for the cough to continue for so long a time, and we are inclined to believe that there must be some infection in the pen. From the symptoms given, it is rather difficult to definitely diagnose the case. Coughing is a symptom of bronchitis, but this usually leaves the hogs in an unthrifty condition if they escape death. It may be due to an irritation of the lungs. Good ventilation in the pen would tend to alleviate the trouble. Lung worms may infest the air passages of the lungs and cause a spasmodic cough. In some cases they cause death, but when the worms are few in number no really bad effects are apparent. For this trouble there is no effective treatment. Clean pens, frequently disinfected, and the plowing up of old hog lots and re-seeding them are preventive measures.

Watering Stock in the Stable.

Describe a system of watering stock in the stable. Is a concrete trough in the manger bottom satisfactory? M. D.

Ans.—There are a number of ways of installing troughs for watering stock in the stable. The concrete trough in the manger gives satisfaction, but it is necessary to have a tight board cover in order to keep out the dirt. We saw one in use where the stock lift the lid and drink at will. The owner of this system has had no difficulty from dirt getting into the water, as the cover is on a spring hinge which closed it the moment the animal raised its head. One objection would be that feed might get in behind the lid and prevent the animal opening it sufficiently to get a drink; then, too, feeding grain, salt, etc., has a tendency to rust out the hinges. We have seen concrete partitions built between the stalls and a cement water box built in this partition; the feed pipe entering from the bottom. This was not difficult to make as a mould the size of the trough was fitted up at the time the partitions were being installed. The pipe was also put in so that the soft cement settled tightly around it. Some use a continuous metal trough running along in front of the cattle. It is raised sufficiently high to feed underneath it. True, it is a slight inconvenience for feeding. However, it serves the purpose and there is not much danger of it becoming filled with chaff, if care is exercised in putting feed into the manger. Metal-lined wooden boxes may be used. We were in a stable the other day where a box 6 inches deep and 6 inches wide ran the full length of the stable in front of the cattle. A pipe led from that trough at the far end to a trough on the opposite side of the passageway; water was pumped into the one and flowed by gravity to the other. This was an expensive outfit, but served the purpose.



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More than one farmer has told us—since he has got a copy of "What the Farmer Can Do With Concrete," that the advice it gave him netted him hundreds of dollars in actual profit.

Get the book—it's free—and by reading it you will see the profit there is in building improvements of CONCRETE according to its plain, simple directions. For instance, there's a page devoted to Watering Troughs—showing how to build the sanitary kind that will not rot, rust or leak. Several pages devoted to Concrete Silos. Others telling how to build concrete foundations for barns. All these are improvements a farm needs—its value will go up considerably if you use concrete in the building of them. And you'll be able to "work" your farm with less effort and on a more profitable basis if your buildings and utilities are of the modern Concrete type. This book gives all the directions you'll need.

Remember—Concrete improvements are fire-proof, rot-proof, vermin-proof and indestructible. The book also contains interesting photographs showing what other Canadian farmers have accomplished; with working plans revealing how they did it. Perhaps you are specially interested in some of the features listed in our coupon. Put a cross opposite the ones about which you want particular information.

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PLEASANT VALLEY FARMS

Herd headed by (imp.) Newton Grand Champion and Belmont Beau. We have for sale a goodly number of real good young bulls that will suit the most exacting; also females. Inspection invited Geo. Amos & Sons C.P.R., 11 miles east of Guelph Moffat, Ontario

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 and Shropshires. One hour from Toronto.

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We are now offering a number of young bulls, sired by our senior herd-header, Francy 3rd's Hartog 2nd, the noted son of the famous old Francy 3rd and Canary Mercedes Hartog; also a few females. All choice individuals. P. SMITH, Proprietor, R. R. 3, STRATFORD, ONT.

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Present Offering—A few bull calves.

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HOMESTEAD HOLSTEIN STOCK FARM

I must sell 12 or 15 young cows, due to freshen in March or April in order to make room for young stock, also a few young bulls. For further particulars, write B. R. BARR Harrietsville Station, C.P.R. Phone Connection. MOSSLEY, R. 1

A HOLSTEIN HERD YOU SHOULD KNOW

WM. STOCK & SONS, TAVISTOCK, ONT.

Home of the great Baroness Madoline, 34.48 lbs. in 7 days, 1,043.35 lbs. in 335 days. Write at once for a list of the good record bulls they are now offering, and plan now to spend a day this winter at the farm. It will be a day worth while and here there is always a welcome. Mention the Advocate.

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Holstein-Friesian Cattle, Tamworth Swine. We are offering a choice lot of 5 months' sows and boars and also several nice young litters. Must clear a number quick to make room. We are also offering White Wyandotte Cockerels at \$3 each. Satisfaction guaranteed. C. R. JAMES, R. R. No. 1, Richmond Hill, Ont. Take Yonge Street Radial car from Toronto—stop Thornhill.

WHO WANTS THIS BULL?

Lyons Colantha (No. 23221), Born Sept. 11, 1914. His sire is King Lyons Colantha, whose six nearest dams average 30.10 lbs. butter in 7 days; his sire is by a son of Colantha 4th's Johanna, 35.22 in 7 days, and 1,247 lbs. butter in 1 year. His dam is a 4,875 lb. 2-year-old in R. O. P.; her dam a 8,258-lb. 4-year-old. Must be sold at once; right in every way. For fuller particulars write: J. Mogk & Son, R. R. 1, Tavistock, Ont.



Farmers and Lumbermen

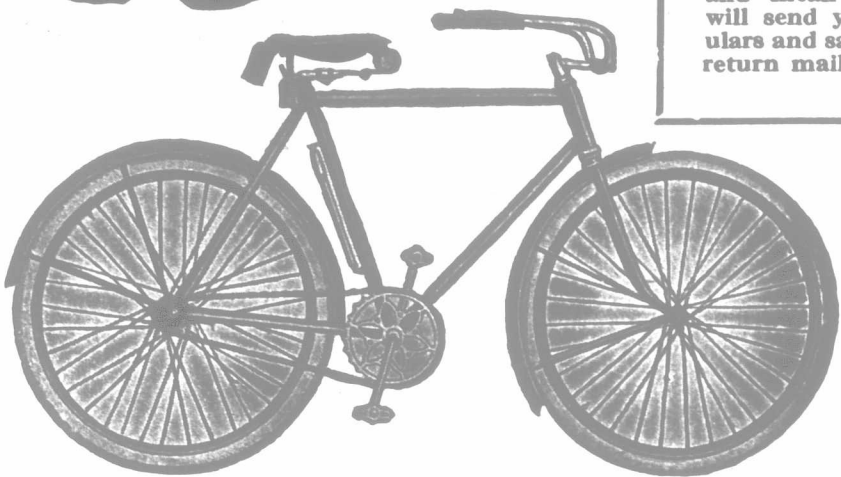
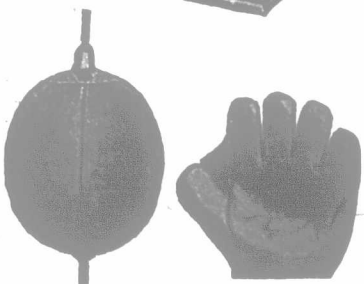
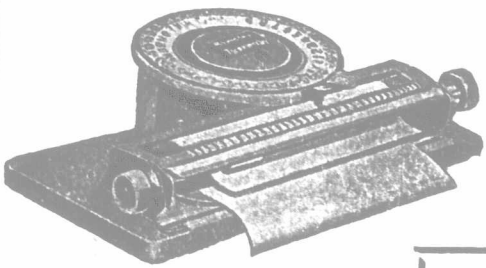
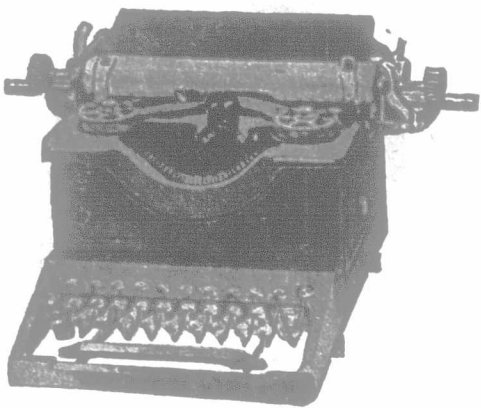
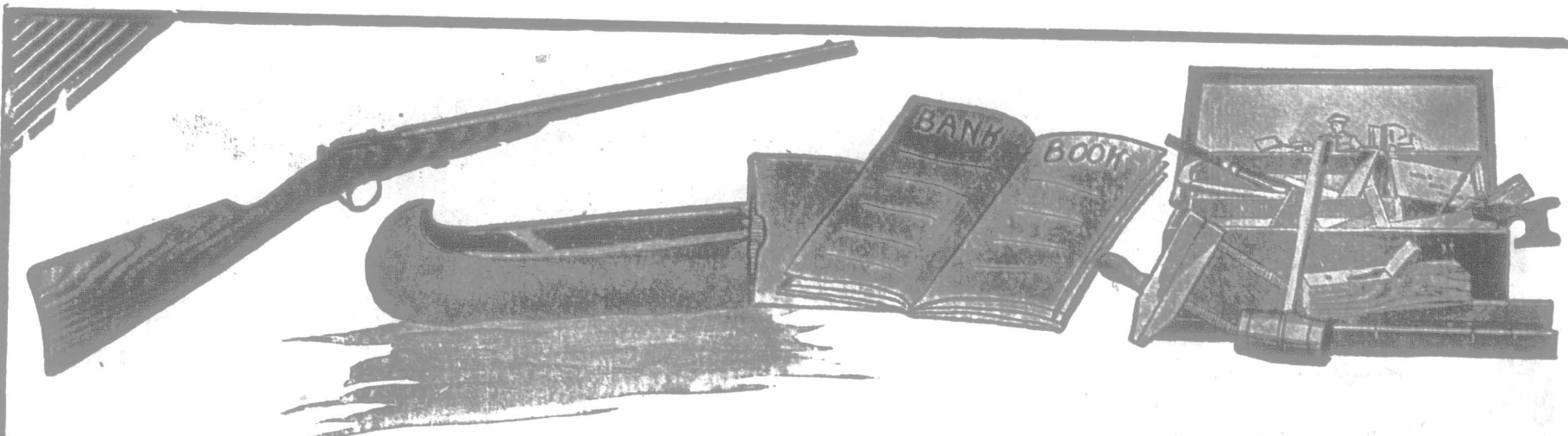
Why throw away your money to middlemen. We will furnish you, f. o. b. Watford, Ont., this beautiful set of strong and easy-running sleighs; usual price, \$35.00, for \$25.00. Fully guaranteed, made of the best of material, white oak runners, six or seven feet long—your choice; two inches wide. Spring steel shoeing; well painted; made to last a lifetime. Ask your neighbor about them. For 20 years the Hastings sleigh is known to be the best made, strongest, and easiest running sleigh in the market; you run no risk. Send us a P. O. money-order or your cheque. Address: HASTINGS SLEIGH COMPANY WATFORD, ONT. Robt. Taylor, Manager

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FOR TOWNSHIP ROADS
Snow Ploughs for sidewalks
Stone and Stump Pullers
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in the ground, in the shape of wooden posts. Use Standard Steel Tube Fence Posts, Write for prices. Standard Steel Tube & Fence Co. Limited WOODSTOCK, ONTARIO



Boys and Girls!

you may own these things

or anything else that you want, by working for us getting NEW subscribers among your friends and neighbors.

We give you a good cash commission on each NEW yearly subscription you get, and then when you have sent in ten, we mail you a special cheque of extra money. By keeping your earnings together, you soon have enough to get the things you want to own.

Little Norman Wilson, 9 years old, was the first to get us ten NEW subscribers and win the extra money.

Vera Costello, aged 11, has made over \$25. Her folks help her get subscriptions; she does well at it.

Leonard Annett got fifteen in a few days.

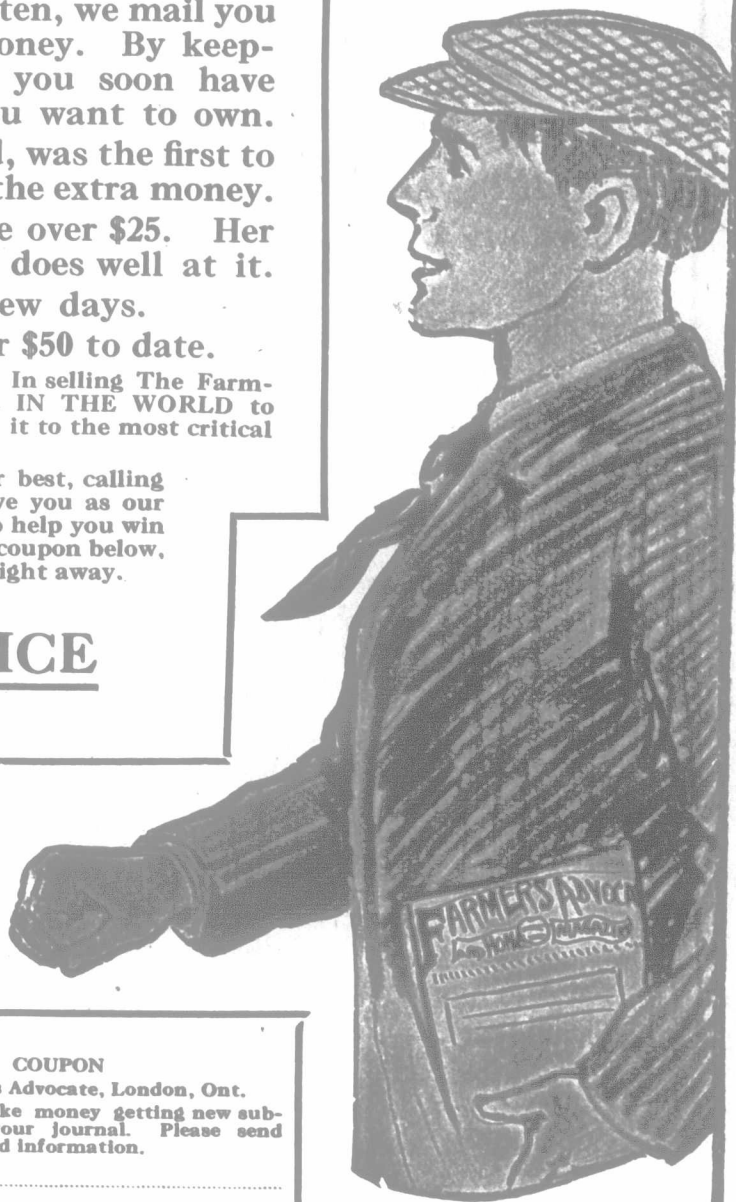
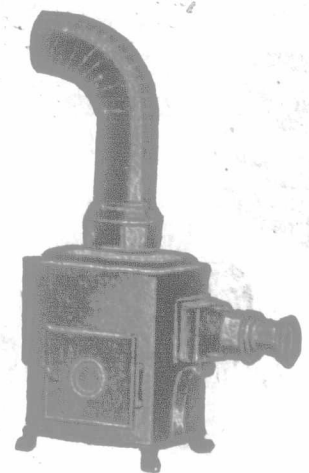
James McGrogan has earned over \$50 to date.

Now, you can do the same in your spare time. In selling The Farmer's Advocate, you have THE BEST FARM PAPER IN THE WORLD to offer the farmer, so don't be afraid to recommend it to the most critical man you meet.

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IMPORTANT NOTICE

We do not give the articles pictured here as prizes, but simply show them to give you an idea of what you can buy with your earnings. We allow you a liberal profit on each NEW subscription, and add a special commission cheque as soon as you have sent in ten NEW subscriptions. Fill in and mail the coupon if you are a hustler and mean business. We will send you full particulars and sample copies by return mail.



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I want to make money getting new subscriptions for your journal. Please send sample copies and information.

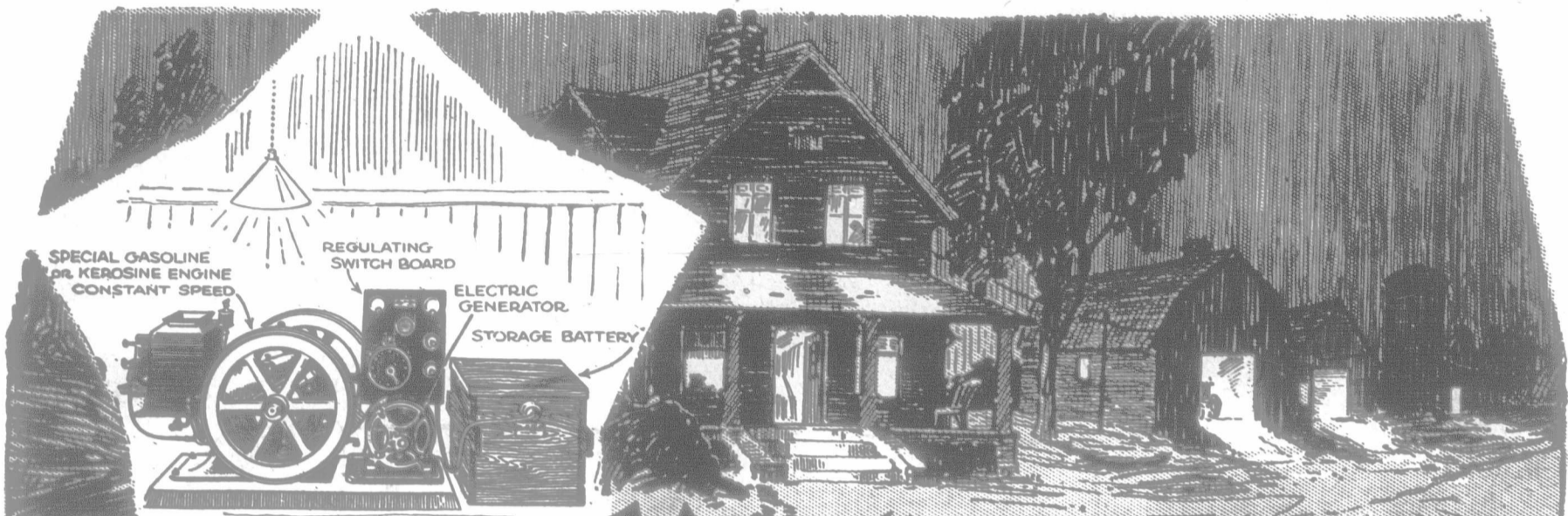
NAME.....

R. R. No.....

TOWN..... PROVINCE.....

AGE..... Do your people subscribe.....

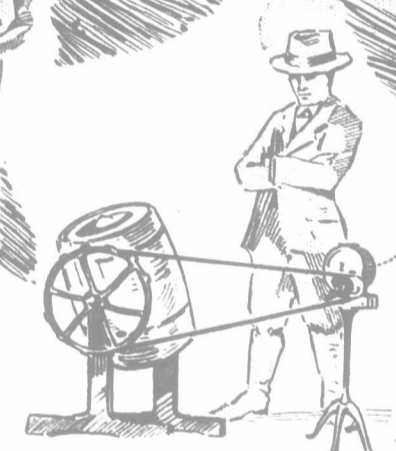
State "yes" or "no".



Northern Electric Farm Lighting Plant



**Better, Brighter, Safer
Lighting for the Rural
Home**



We have given the farmer of Canada the telephone. We have now the Northern Electric Lighting System which is destined to be the greatest medium for making the farm cheerful, comfortable and home like.

The Northern Electric Lighting System will, we believe, be as much of a blessing to the farm as the telephone has been; it will furnish Better, Brighter and Safer Lighting, for the Rural Home; **IT WILL MAKE IT A HOME.**

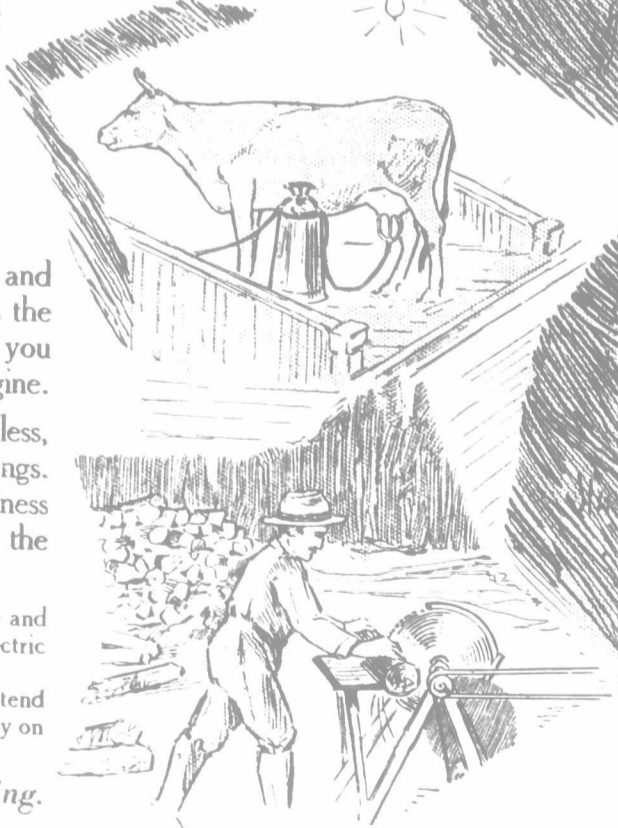
The Northern Electric Lighting System is THE PLANT of Farm Lighting efficiency and is the result of years of painstaking study and experiments. The equipment comprises the generator, switchboard and storage battery complete. You use your own engine, if you have one; if not, we will supply a plant with either a gasolene or kerosene-burning engine.

Think what a benefit this equipment will be to you and your family. Think of the odorless, fireless, dirtless and safe method of lighting your house, your barn, and your other buildings. Think of those long, comfortable winter evenings. Think of every comfort and cheerfulness of the city brought to your own country home. The Telephone, the Electric Light, the Electric Toaster, the Electric Iron, etc., etc.

We urge those who believe that there is a need for a safer and better way of lighting the house and barn than with the dangerous coal oil lamp and lantern to investigate the Northern Electric Lighting System.

Write our house nearest you for full descriptive literature free. If you do not intend purchasing just now you will surely be interested in the possibilities of electricity on the farm. **WRITE TODAY.**

Now is the time to plan for better and more economical lighting.



To the Northern Electric Company

Please send me full particulars and illustrated literature of the Northern Electric Farm Lighting System. **FREE.**

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