

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CL. No. 8
Whole Number 3981

DETROIT, MICH., SATURDAY, FEBRUARY 23, 1918

\$1.00 A YEAR
\$3.00 FOR 5 YEARS



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The Lawrence Publishing Co.

Editors and Proprietors

39 to 45 Congress St. West, Detroit, Michigan
 TELEPHONE MAIN 4625.

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 Canadian subscription 5c a year extra for postage.

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In common with other countries, our government has found a degree of price regulation to be desirable. The experience of other countries seems to go still further and indicate the desirability of fixing compensatory prices on many if not all staple food products. Such action would undoubtedly stimulate planting on a considerably increased scale in this country. In its absence, however, our farmers will do well to consider the fact that under market conditions which are likely to prevail this year, values for food stuffs of all kinds are likely to be higher even than compensatory prices which might now be fixed by government action.

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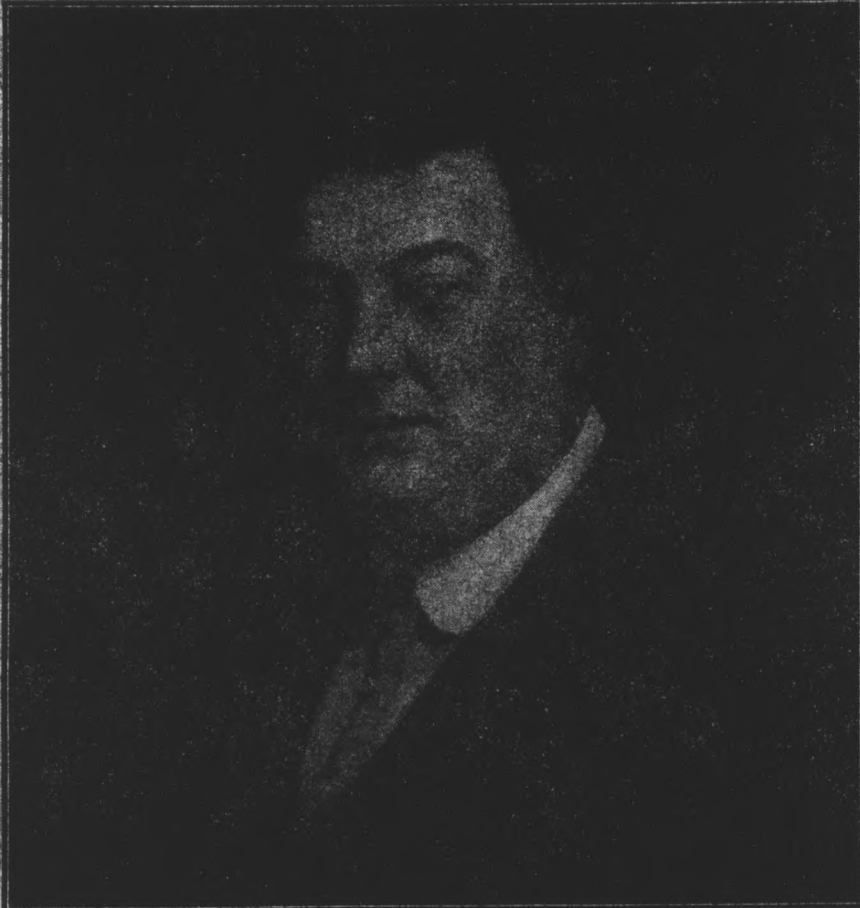
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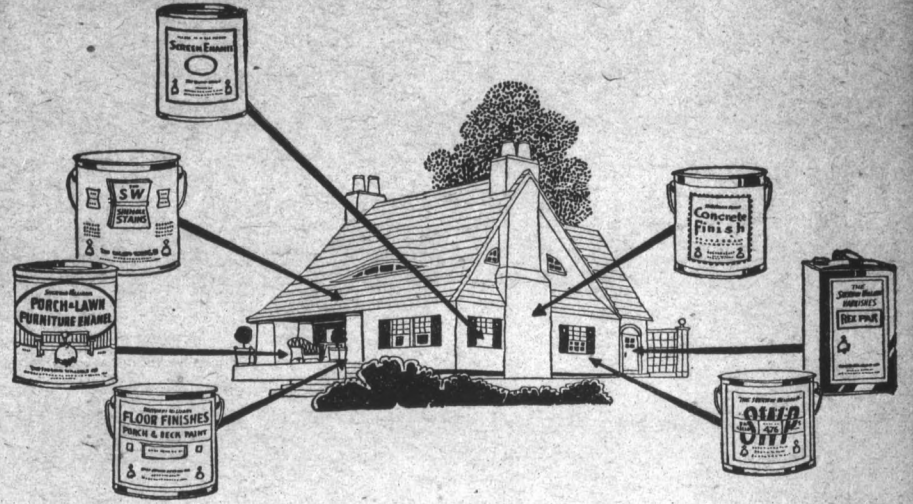
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Paint that goes farthest and endures longest

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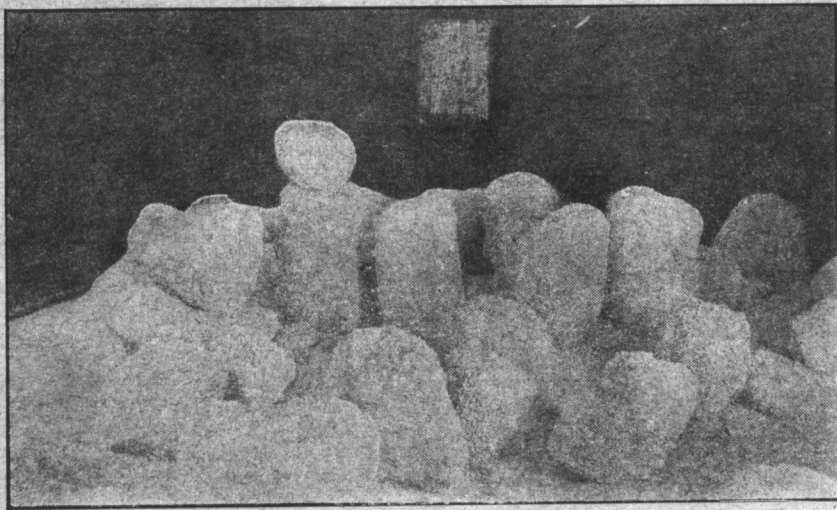
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This reliable insecticide quickly and thoroughly destroys all leaf-eating insects without injury to the trees or plants. Being a powder, there is no extra weight to haul, no chance of leakage or freezing. It mixes readily with water, sprays evenly and sticks fast. Try Sherwin-Williams Arsenate of Lead in powdered form for economy, convenience and best of all, effectiveness.

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What Are the Things to Look for in a Tractor?

The very light tractors on the market now are in many ways unlike their predecessors in design. They show, among other things, much greater refinement and a tendency toward lightness, compactness, and the use of roller and ball bearings to lessen friction. More attention is being given also to the protection of the engine and working parts from dust and dirt.

A good tractor should possess the following:

1. Simplicity.
2. Durability. This should include good material, good workmanship, and good design.
3. Accessibility. Under this should come engine parts, bearings, and transmission.
4. Interchangeability.
5. Well protected working parts.
6. Adaptability. By this is meant the ease with which the machine can be used for plowing, tilling, hauling, and with a belt for cutting wood, filling the silo, etc.
7. Ease of operation. That is, its ability to turn in a small radius, visibility of work, and ease with which it can be manipulated.
8. Weight. This should be sufficient to secure traction and light enough to prevent injury from packing the soil.

Among these points none are more important in the design of the tractor than those relating to accessibility and interchangeability of parts. It will not be convenient to run a tractor to the garage or repair station like an automobile. Repairs must be made in the

safe-guard is complete covering and lubrication of the working parts.

When the farmer purchases an automobile he comes into possession of a machine which surpasses anything he has hitherto used on the farm in complexity, number and quality of parts. He realizes that this machine needs the occasional attention of an expert. The tractor is almost as highly developed from the mechanical standpoint, and it naturally follows, therefore, that it should have better care than is sometimes given common farm machinery. The operator should at least be familiar with the principles of the gas engine, and its troubles. Further, he should have a thorough knowledge of the particular machine of which he is placed in charge. In the opinion of the writer, a whole week spent in looking over the tractor and in studying the instructions accompanying it will, in the end, be a saving in both time and money for the purchaser. It will be found that there really is nothing mysterious about a tractor and with a few years use, its characteristics will become as well known as those of the horse, which man has studied now for hundreds of years.

The tractor, to pay its way, however, must be kept busy, for the investment is large and costs entailed by interest charges, repairs, depreciation, taxes, insurance are very high. These charges must be repaid by the tractor during the time it is at work. If it is used but ten days in the year its earnings during each of these days will need to be great to offset the fixed charges. If the tractor is used a hundred days in the year these expenses per day will be proportionately smaller.—Farm Mechanics Department, M. A. C.

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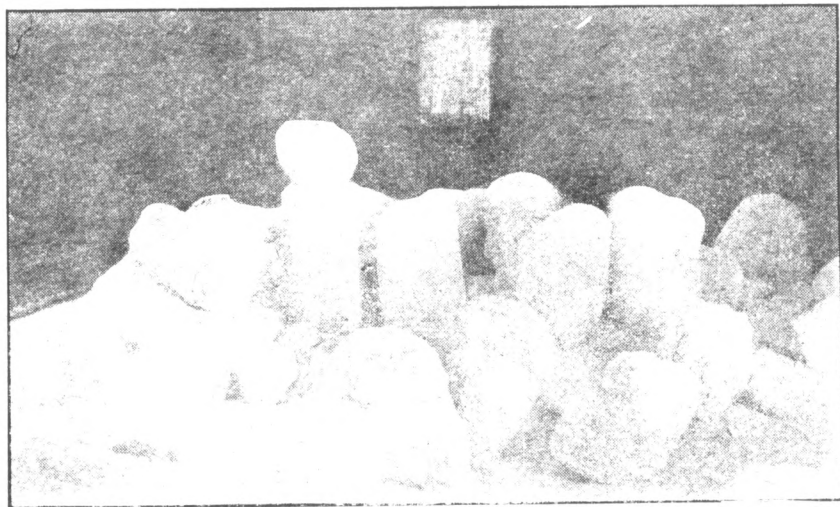
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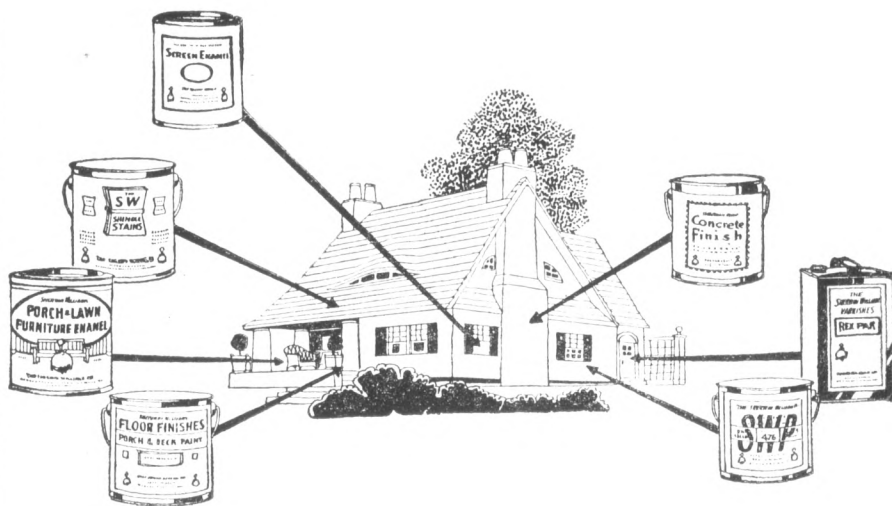
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When the farmer purchases an automobile he comes into possession of a machine which surpasses anything he has hitherto used on the farm in complexity, number and quality of parts. He realizes that this machine needs the occasional attention of an expert. The tractor is almost as highly developed from the mechanical standpoint, and it naturally follows, therefore, that it should have better care than is sometimes given common farm machinery. The operator should at least be familiar with the principles of the gas engine, and its troubles. Further, he should have a thorough knowledge of the particular machine of which he is placed in charge. In the opinion of the writer, a whole week spent in looking over the tractor and in studying the instructions accompanying it will, in the end, be a saving in both time and money for the purchaser. It will be found that there really is nothing mysterious about a tractor and with a few years use, its characteristics will become as well known as those of the horse, which man has studied now for hundreds of years.

The tractor, to pay its way, however, must be kept busy, for the investment is large and costs entailed by interest charges, repairs, depreciation, taxes, insurance are very high. These charges must be repaid by the tractor during the time it is at work. If it is used but ten days in the year its earnings during each of these days will need to be great to offset the fixed charges. If the tractor is used a hundred days in the year these expenses per day will be proportionately smaller.—Farm Mechanics Department, M. A. C.



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This field of corn was grown at Molino, Mo., and the above photograph was taken seven weeks after planting. On the left 100 pounds of A. A. C. Fertilizer was used to the acre, and on the right none. This illustrates what good fertilizers will do in the Mississippi Valley, even when used in small quantities.

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40

Characteristics of Good Seed Corn

By MYRON A. COBB

THE testing of several thousand ears of seed corn brought in by farmers has taught us a few things that seem to be worth while. These things will especially apply in a year when one is confronted with a seed corn situation like the present. Some of the lessons taught from the testing are clear, others are not.

Immature Seed.

Will immature seed grow? Yes, if properly dried before freezing, but no, if the ears have been frozen while containing considerable moisture. Even one hard freeze will kill the germ. We took several immature ears of corn that contained considerable moisture, properly dried one-half of each ear and tested it, the other portion of the ear was frozen in a cream tester and then tested; the former grew, the latter did not. One freeze had killed the germination.

Chaff on the Tips of the Shelled Kernels.

Corn showing chaff on the kernels after shelling will grow if the ears have been properly dried.

Rapid Drying and Germination.

Various trials under different conditions show that seed dried rapidly will grow and give good germination. To insure good germination the room in which the corn is stored should be well ventilated. Some seed corn this year has moulded because of the excessive moisture, warm temperature of storage rooms, and poor ventilation.

Kernels with Black Tips.

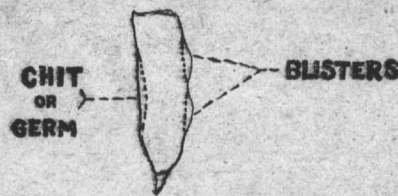
Shelled seed corn showing black at the tips of the kernels will grow if properly dried. Many do not understand that all kernels have a black layer underneath the tip; this layer

in by a farmer and had been stored in the same place and under average conditions, I suspect.

Age.	Bad.	Weak.	Good.
	%	%	%
One year	0.8	4.6	94.6
Two years	2.0	15.0	83.0
Three years ..	19.0	32.1	58.9

Is there any one characteristic about an ear of the kernels by which one may know an ear will not grow? Any-

FIG 2



thing that indicates that the ear has not received good care, as mold, should be noted carefully. Kernels with dark or discolored chits or germs will not grow. One of the most important factors in detecting poor germination is to examine the backs of the kernels, the side opposite the chit, for blisters. Corn that has been frozen while containing too much moisture will often show small raised portions—the covering puff out leaving air underneath as indicated in the accompanying cut. Such ears should be discarded, they will not grow.

BARLEY FOR MARSH LAND.

I have a few acres of rather heavy marsh land. Would this grow barley successfully? What variety, when and how much should be sown for the best results? Is barley straw as good for feed as oat straw? Is millet good feed for dairy cows?

Shiawassee Co. S. G.

If this marsh land is well drained and is not so rich in nitrogen that the barley will lodge, it ought to grow good barley. Marsh land is usually rich in nitrogen, and oats or barley are liable to lodge badly on such land so that it costs a good deal to harvest it. One cannot tell from the inquiry anything about the natural fertility of this land. On most freshly drained marsh land it would be safer and better to plant corn. It is better to grow corn two or three years in succession until it is thoroughly subdued and until the land is somewhat deplete in nitrogen so that when you sow cereal crops they will not lodge.

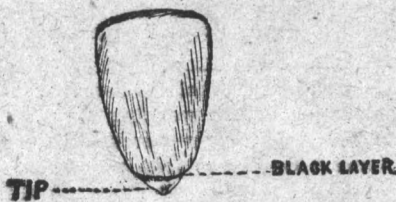
You know more about the condition of the land and will be better able to judge than anyone else. Barley wants good rich land. In fact, any crop does, if you want to grow a maximum crop.

Your county agent would be able to tell you probably the best variety of barley to be grown in your vicinity. The variety that is very popular in Wisconsin is known as the Oderbrucker. There will undoubtedly be a very large acreage of barley sown in Michigan this year as barley is a splendid substitute for corn in fattening hogs or in fact, any kind of stock. It will take the place of corn quite satisfactorily. Barley straw is not considered as good to feed as oat straw and yet if the barley is harvested before it gets too ripe the straw makes good, fair feed for stock. Many people object to raising barley on account of the beards which are more or less of a nuisance, yet these beards rarely are injurious in feeding live stock.

Millet hay is a splendid feed for dairy cows if it is cut before the seed of the millet gets hard. It ought to be cut when it is in about the same condition as timothy hay to make the best quality of hay. If it is cut then and cured in good condition it is a splendid feed for any kind of stock, and cows, especially like it very well.

COLON C. LILLIE.

FIG. 1



covers the germ. Extremely dry immature ears will break sometimes, leaving the tip on the cob and therefore show the black layer.

Will ears grow when the kernels show a wrinkled appearance over the germ or chit? Yes, as the kernels shrink and the chit becomes depressed there is quite apt to be a wrinkling of the covering. However, if the covering be very wrinkled, the germination may be poor.

What is the highest per cent of moisture that an ear may have and still grow after being frozen? This is a practical question and one that has not been answered as far as I know. We have done only a little work along this line. So far our results have been approximately, as follows: With forty to fifty per cent the germination has been killed by a freeze; with twenty-five per cent most of the ear would not grow; with less than twenty per cent the germination was not affected by a freeze.

How long can seed corn be kept and grow? Like the last question, it has not been answered and probably cannot be, due to difference in storage conditions. I have tested corn seven years old, that had been kept in ideal conditions and the corn showed good germination. The principal factor in the storage of any seed is freedom from moisture. All seeds deteriorate rapidly in germination power if the storage room be not dry. Under ordinary farm storage seed corn seems to deteriorate rapidly as the following results will show. This corn was brought

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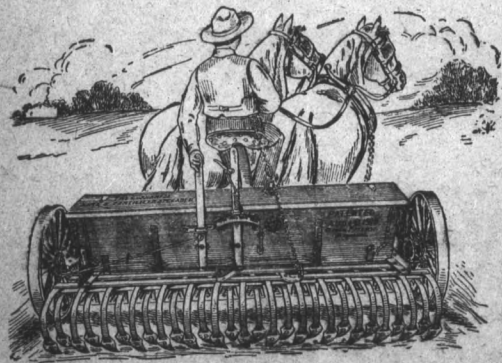
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FARM NOTES.

Sweet Clover vs. Mammoth Clover.

I bought eighty acres of level sandy loam last fall which has been somewhat run. I intend to lime this land, and had thought of seeding same to mammoth clover. Would sweet clover be any surer crop on a light soil? Would it be equally good hay for cattle and horses? How does the price of the seed compare with mammoth clover seed, and how much should be sown to the acre?

Osceola Co. A. B. C.

From the writer's experience, land which is in a condition to successfully grow the other clovers should preferably be devoted to such use in preference to seeding sweet clover on an experimental scale. As a crop for soil improvement on land that is particularly low in its content of vegetable matter or humus there is no question about the superiority of sweet clover, provided it is seeded in a manner suitable to its requirements.

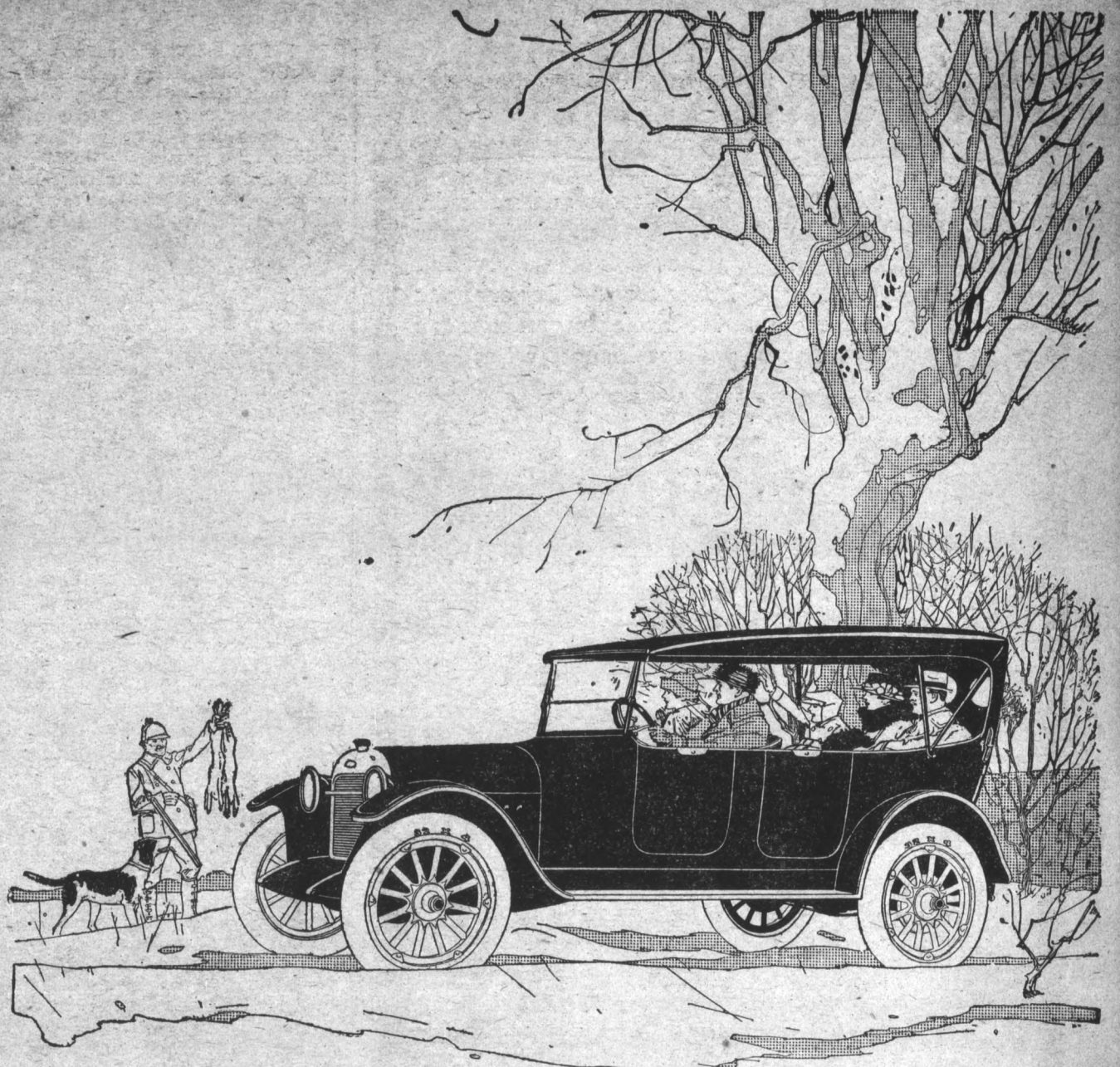
Lime appears to be just as essential for sweet clover as for alfalfa, and will be beneficial to this soil whether sweet clover or mammoth clover is to be sown. Something will depend upon the manner in which the soil is to be handled previous to and at the time of seeding, as to which crop will be preferable to sow. Sweet clover requires a firm seed bed for best results, and will give a better stand where sown on fall-plowed ground than where sown on spring-plowed land, unless special pains is taken to make a very firm seed bed. If the crop is to be sown alone without a nurse crop, then if these conditions can be provided and the soil is limed, sweet clover would probably be more profitable to sow, since if sown in the early spring it should under favorable conditions produce a fairly good cutting of hay the same season. The plants would then live over winter and produce a heavy crop of forage the following year, which could be utilized to plow down as a green manure crop, thus serving the double purpose of furnishing a forage crop and improving this worn land.

Last year we cut some first crop sweet clover in this way as an experiment. It made a very fair quality of hay which was eaten fairly well by the live stock, although with not as much relish as was alfalfa hay of a somewhat better quality. This year the same sweet clover was again cut for hay, making a very much coarser and less desirable hay, which has also been consumed with fair results. Sweet clover is, however, much finer, giving a better quality of hay when cut in the fall after early spring seeding than when cut the second spring after it sends up seed stalks, and it will be found a better plan to pasture it in the spring after seeding and plow down as a green manure crop as above suggested.

Where soil improvement by this means is not the object desired, the other clovers will fit into the crop rotation more desirably and with better average results than sweet clover, at least, this is the conclusion reached after a limited trial of this plant, which is, however, a much more valuable plant both for forage purposes and for soil improvement than is generally appreciated.

We have used about ten pounds of seed per acre which has given a satisfactory stand where good germination was secured. As sweet clover contains a large number of so-called hard seeds which are nearly impervious to moisture, better results will be secured if the seed is scarified, or even if it is soaked in warm water over night before sowing.

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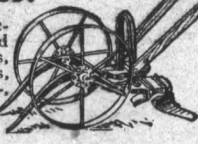
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Fruit Growers' Mid-Winter Meeting

ONE of the first questions of order at the recent State Horticultural Society meeting, held at South Haven, was peaches, considerable apprehension being felt lest the tremendous cold weather would have killed the fruit buds. Professor Halligan was of the opinion that the peach trees went into winter quarters in as favorable a condition as they ever had and this statement was backed up by many of our local men. However, reports from Berrien county and a few growers gave evidence of not only frozen buds but also frozen branches. It was brought out, however, that as soon as this could be in any measure determined, that pruning should be resorted to since it is an invigorating process and, as freezing is a weakening process, this will be needed to counteract the effect on the tree.

Labor Saving in Spraying.

Due to the probable scarcity of labor the dust spraying system came in for its share of discussion. Without exception men were agreed upon the adaptability and efficiency of the dust for all but the dormant spray and here the liquid still holds undisputed sway.

Dust spraying is not a cheap method but is a quick and effective method that requires less labor. Prof. Halligan cautioned the men to go slowly, saying that, although their results had been gratifying, a more general test of this method was necessary before the college would sanction it.

Mr. Eckard, assistant county agent for Van Buren county, briefly outlined the different systems of management but spoke mostly on liming and fertilization, pointing out the necessity of sufficient nitrogen to maintain the crop year after year. One of the best ways Mr. Eckard says, to obtain nitrogen, is by the proper use of legumes and to get the legumes, you must have previously limed the soil. The old idea that trees responded equally well to acid and normal soils is past.

Pruning Pointers.

Prof. Halligan then gave a talk on pruning and said that we should be careful in our pruning until we are sure of the extent of winter-killing. Pruning after winter-killing helps to regulate the trees and concentrate the effort where it will do most good. It was also pointed out that the closer you keep to the one-year-old wood when cutting back frozen limbs that the greater will be our results, however, a great deal of good judgment is required to know the exact amount of pruning to do.

In extreme cases of tardy foliage it was brought out that a light application of nitrate of soda was decidedly beneficial.

Mr. L. R. Taft gave a very interesting discussion as to Michigan orchard laws. He stated that all the precautionary measures necessary to control disease in trees had been taken by the government but that it required public sentiment to back up local men in the enforcement of these same laws. Buyers should make a careful inspection of stock from any source for wooley aphids and crowned gall and unless free from disease the stock should not be planted.

A Serious Disease.

The white pine blister rust is causing considerable damage to currant, blackberries and gooseberries. It is also in evidence on the base of some of the small nursery stock, causing girdling and sometimes on the branches of some of the older trees.

The one big point driven home by the speaker was public sentiment in large enough quantities to enforce the laws that the state has placed in the hands of every fruit grower.

The Wednesday morning session was given over to the question box conference in charge of Mr. Lurkins, county agent of Berrien county. The

old question of variety adaptation was threshed out again, with the result that it was left to individual taste. The Hale peach came in for a considerable amount of discussion and its desirable points were summed up against the Elberta as follows: The Hale has better size, better quality, is a peach which you can pick both earlier and later than the Elberta and stand storage equally well. Along this line came the question of replanting orchards on the same soil that had previously grown peaches. It was pointed out that this could be accomplished very well, provided a system of management was given over to the site for a period of three years between the time of removing the old orchard and replanting the new.

The Labor Problem.

One of the big things in the session was the discussion of tree paint and a resolution was offered to the effect that no nostrum for fruit trees should be offered for sale in this state until it had previously been passed upon and ratified by an inspection committee, preferably located at the college.

This matter is to be taken up by the legislature and thoroughly threshed out, and as we have the same quack doctors for trees that we do among the human family, the necessity of such a measure is easily seen.

The labor problem for 1918 was discussed by A. D. Cook, State Farm Labor Specialist. He brought out the fact that higher wages for farm labor was almost certain and he also advised the utilization of local help wherever possible. He divided the help problem into four classes. Class A, local help, which, in Mr. Cook's estimation, is the very best possible source of help. Class B, agencies, of which there are several. Two, however, received special mention, the one at Detroit and the one at Chicago, but Mr. Cook was of the opinion that a man who should be in the employ of the government should be at these places to list and look over the help which came and recorded as having had farm experience.

The Importance of Boy Help.

Class C, the boy help, which was pointed out as one of the greatest sources of latent energy which the American nation possesses, and last, Class D, the retired farmers' list which under Mr. Cook's definition does not exist. He very clearly defined his views on the man who is today retired because he happens to have money enough to keep him for the rest of his life. Mr. Cook in very forceful terms said that a man who fell in this class was "a slacker gone to seed."

His last advice to the men was to pay more, and work less hours, therefore placing themselves on a competitive basis with city concerns employing help.

Following this Mr. Farrand, county agent for Van Buren county, gave a brief summary of the boy labor question for his county. During the past year 1,175 boys were employed in the county, working a total of 16,927 days and receiving a total wage of \$2,900.63. This does not take into account the great number of boys who worked at home on their father's farm, receiving no wage which could be listed as such. Of these boys practically 100 per cent of them were efficient which, as Mr. Farrand expressed it, is evidence enough as to the advisability of the employment of this kind of help.

Orchard Fertilization.

The question box was taken up at this point. Of the animal manures hog manure seemed to have the edge on all the others, according to Mr. Lurkins, who has carried on extensive experiments in Berrien county with different fruit growers. Mr. Lurkins said that where the trees were fertilized with hog manure the color of the fruit and foliage were noticeable and that

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it took one less layer of peaches per basket from these trees than it did in the case of the other trees fertilized with different forms of manure.

Prof. Simonson gave the talk on the aphid and recommended most of the contact insecticides for aphid control, of which kerosene emulsion and nicotine sulphate solution received special mention. The nicotine sulphate may be put on with the lime-sulphur or Bordeaux, or alone, two or three days after the green and rosy aphid appear, which should be looked for about the fifteenth or sixteenth of April. A careful watch must be kept in order to know when to spray and it might be recommended to cage some of the eggs and place in an exposed condition and watch for developments. Spraying in the cluster cup stage for aphid is not to be recommended as it offers too many hiding places. It is also too late to spray after the little apple has been injured.

One of the big things is preparation. It was urged that everything be done this winter that could be in regard to getting the spray rig ready and not leave until the last thing. Prof. Simonson's last remarks were to urge the fruit growers to get Farmers' Bulletin No. 804, Bureau of Publications, Department of Agriculture, Washington, D. C. Every man should post himself on the aphid this spring and avoid the disaster of last year.

TROUBLE DEPARTMENT.

Apple Varieties and Soil Fertility.

What are the best kind of apple trees to plant on sandy soil for home use or market, the good varieties that can stand hard winters? It has been thirty to thirty-five degrees below zero out here on February 1; can all apple trees stand that much? Can you give me some information in regard to getting clover started on sandy soil? I have a piece of ground that was put to corn last year and harvested a light crop, so you can imagine it is run down quite a bit. Now, I would like to get clover started on it. Would fertilizer be good on sandy soil to get clover started? If it is, what kind and how much to the acre? Would it be a good plan to sow it in oats or would you recommend something else? This land has not been fall-plowed for the reason of blowing. It is pretty clean from weeds. Would you advise me to plow it this spring or disc and harrow it?

Ottawa Co. K. B.

The best varieties of apples to set hardiness and good growth is the on a light soil are those which naturally make very thrifty growth. The best variety from the standpoint of Northern Spy. This will do quite well on your soil and will stand the temperature you mention, if any variety will. We believe that if the trees are properly hardened in the fall, thirty to thirty-five degrees below zero will not be detrimental to most of the Michigan varieties.

The Greening and Baldwin ought also to do well on your soil, but such varieties as the Wagener, Wealthy and Jonathan will not give a large enough production area to make them profitable.

It is usually quite difficult to get clover started on sandy soils. The common practice among those who have such soils is to sow vetch, which is considered the best light soil legume. This produces a large amount of top, has better nitrogen-gathering facilities and usually starts well on a light soil. The usual custom is to sow it in the fall, with rye preferred, and then turn it under in spring after a fair amount of growth has been allowed.

A commercial fertilizer will be of little value for you to use, as there is not enough plant material in the soil to hold the fertilizer. Barnyard manure, or anything else which has vegetable bulk to it would be the better kind of fertilizer to use.

As your land is quite free from weeds and sod, discing would probably be the best way of preparing it.

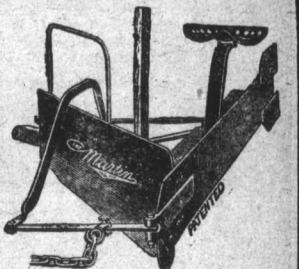


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Farm Ditcher, Terracer, Road Grader

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Reversible, adjustable, no wheels or cogs. All steel. Made in 2, 4 and 6 horse and tractor sizes. Economical from first cost on. Thousands of satisfied customers. No farm or ranch outfit complete without a "MARTIN."

Get the Full Story—Insure Against Crop Failure—Mail the Coupon—Get the Free Book

Don't turn away from this page in your paper without sending me your name so I can show you how farm after farm, all over the country, has been brought from ruin to big returns. I just want your name. No obligation on your part. I want to tell you a wonderful story.

Mail the Coupon Now to W. A. STEELE, Pres. and Gen'l Mgr.
OWENSBORO DITCHER & GRADER COMPANY
Box 1015 Owensboro, Ky.



Mr. Steele, Owensboro Ditcher & Grader Company, Box 1015 Owensboro, Ky. Send me a copy of your new free book.

I own..... acres of land.

Name

Address

Am interested in Ditching, Terracing, Irrigating, Dike Building, Tiling, Road Grading.

X (Put cross before subjects in which you are most interested)

Hardie Orchard Gun \$12.00

The most effective and simplest spraying device ever made. Growers all over the country find it saves them time and labor. Does the spraying job quickly and thoroughly. It's easy to use—just fits the hands—quickly adjusted to throw from 10 to 30 ft. No hard work or tiresome effort any more. Spray all day and hardly know it. A big improvement over the old method. Shoots a big cloud of penetrating spray, covering the tree quickly and thoroughly. Make sure of your Hardie Orchard Gun by ordering promptly. They are selling fast. Don't delay.

Hardie Spray Pumps are fast taking the places of other pumps on spray rigs—the growers are getting Sprayer-wise. Over 40,000 of them know that Hardie Sprayers last longer and give more constant service with a lower upkeep cost. This is because they are designed better, built more carefully with better materials and better workmanship. Not built just to sell, but for long and satisfactory service. Our catalog tells you things you ought to know.

THE HARDIE MANUFACTURING CO.
Hudson, Mich.
Branches in Portland, Ore.; Kansas City, Mo.; Hagerstown, Md.; Brockport, N. Y.

PLANT MICHIGAN TREES

at wholesale prices, direct from Nursery to planter. Healthy acclimated, high grade, true to name fruit trees, berries, ornamentals. The nation needs more fruit. He who plants this spring serves his country. A postal today will bring prices and descriptions.

Celery City Nurseries Box 18, Kalamazoo, Mich.

You Must Spray

To Make Crops Pay

There's a Brown's Auto-Spray that will suit you. 40 styles—hand, traction and power. All have non-clog nozzles—save endless trouble. Used by Experiment Stations, and over 450,000 farmers, gardeners, etc. Send today for catalog and Spraying Guide—both free.

E. C. BROWN CO.
852 Maple St., Rochester, N. Y.

Owens Transplanter

Only Self-Setting machine. Transplants sweet potatoes, tomatoes, tobacco, strawberries, cabbage, nursery cuttings, etc. Any desired depth. Better than hand. As plant is released, water valve opens, then close rollers press dry soil around plant! Holds moisture but leaves no wet surface soil to bake.

J. L. OWENS CO.
1143 Dartmouth St., Minneapolis, Minn.

LIME

Pulverized lime rock for "sour" soils. WE SELL YOU DIRECT. Shipment from our Muskegon, Mich. yard. Write for sample, literature, analysis and price.

LAKE SHORE STONE COMPANY,
P. O. Box 175, Milwaukee, Wis.

Strawberry Plants

1000 for \$2 Everbearing at \$1 per 100. All kinds at other prices. Raspberries, grapes, everything to plant. Free catalog of bargains. Write the **ALLEGAN NURSERY**, Box 205, Allegan, Mich.

TREE SPRAYING GUIDE

One of the most practical guides ever printed. Tells how to control every pest and disease. This book and Fruit-Fog, the perfectly atomized Super-Spray, positively guarantee you a maximum 1918 yield. Write for it at once. Send no money. Hayes Pump & Planter Co., Dept. 1) Galva, Ill.

THE ROSS SILO

Wood Stave

The Ross Wood Silo is pleasing thousands of users all over the country. The high quality of material and workmanship put into the Ross Wood Stave Silos guarantees their durability and insure complete satisfaction. Exclusive features too numerous to mention here. Catalog explains. Your choice of Long Leaf Yellow Pine, Oregon Fir or California Red Wood.

Buy Your Silo Now and Be Safe. Do not wait until too late. Conditions considered, prices were never lower. You owe it to yourself, as well as to the Government not to be without one.

The E. W. Ross Co.
Box 314 Springfield, Ohio

Special proposition to Agents.

"In-de-str-uct-o"
Metal

The Silo without a single objection. The only Silo on the market, the good qualities of which permits of a guarantee equal to what the purchaser himself would write. Produces 99% Food Value Silage. Resists fire, and is, without question, the most permanent Silo. Ask for Catalog and Testimonial Circular.

The Silo Beautiful that Lasts for Ages



Get the beauty and durability of tile in the Lansing "ship-lap" block. Ends overlap—extended shoulders top and bottom—less mortar exposed, better settling of silage—less chance for frost, better looking silo, blocks uniform in shade. Stronger walls. Notched ends on blocks prevent mortar from slipping. Twisted steel reinforcing. Steel hip roof—steel chute—fire proof—adds beauty to the silo. Write for Catalog.

J. M. Preston Company
Dept. 309, Lansing Mich.
Also get offer on Climax Silage Cutters and Bidwell Threshers

Lansing

The Unified Tile Silo

Pulled!—by One Man!

Prove It. By 30 Days' Free Trial!

That's what you can do—use this great puller for 30 days! Hook it onto any stump, pull it alone, unaided. Then—

—if you don't agree that the giant Kirstin pulls stumps quicker, cheaper, easier than you ever dreamed possible, send it back! Trial costs nothing! Think what an easy way to turn WASTE into PROFITS!

Pulls Stumps for 5c

—pulls 'em in from 4 to 10 minutes! That's what hundreds do with the wonderful 6-Speed, Triple-power Kirstin One-Man Clutch Stump Puller. Double leverage—that's why! A few pounds on handle pulls TONS on stump—gives boy power of giant! With it, you can laugh at labor scarcity!

Has Take-up for slack cable—soft steel clutches that can't injure cable. Simple! Durable! A Three-Year Guarantee—law or no law. Used by U. S. Gov't.

4 Liberal Offers

with a No-Money-in-Advance and Easy 6-Months-to-Pay Plan. All described with pullers both in 1-Man style or horse power in FREE Book—fully illustrated. Solve your stump pulling problem. Write quickly! Get SPECIAL offer before too late.

A. J. KIRSTIN COMPANY, 314 Ludington St., Escanaba, Michigan

Kirstin ONE-MAN Stump Pullers

Mention the Michigan Farmer when writing Advertisers

Getting the Most Out of Timber

THE following suggestions may be helpful to the farmer in selling his woodlot products:

- (1) Find out from as many saw-mills and wood-using industries as possible what prices they offer for various wood products, in order that advantage may be taken of the best market. This applies to sales requiring shipment as well as to local sales.
- (2) Before selling, inquire from neighbors who have recently disposed of their timber and use their experience as a guide. Failure to do this has resulted in many instances in not getting the full value of the product.
- (3) Thoroughly investigate all local timber requirements and prices, since in many cases local markets pay better prices than outside markets because of the saving of transportation charges.
- (4) Advertise in the papers and otherwise secure competition among outside purchasers. The expense will be small and outside buyers will thus learn of chances to bid on timber in competition with local buyers.
- (5) Secure bids whenever practicable both by the lump and by log-scale measure. A choice is thus offered and the more profitable form of bid can be accepted.
- (6) Consider the responsibility of the prospective purchaser before making the sale, in fodder to avoid slow payment, costly collections, and losses.
- (7) Prior to making sales, secure at least a fairly good estimate of the amount and value of the material for sale. Persons acquainted with the business of measuring or estimating timber can usually be found in every region where timber has been handled in the past.
- (8) Market the higher grades of timber instead of using them on the farm for purposes for which cheaper material will prove as serviceable. This should be done in many cases even if it makes necessary the purchasing and hauling of lower priced lumber to the farm. Markets which pay good prices usually buy on grade and inspect closely.
- (9) Remember that standing timber does not deteriorate rapidly nor do the uses of wood change greatly within a few years. The owner, therefore, is not forced to place his product on the market regardless of market conditions.
- (10) Use a written timber-sale agreement in selling woodlot timber, particularly where the cutting is done by the purchaser.

INCOME TAX LAW MAKES FARM ACCOUNTS NECESSARY.

Many farmers will be compelled to make returns under the provisions of the federal income tax law. Thousands who have kept no account of their business heretofore, this year must keep close tab on their finances. Each farmer will have to become his own book-keeper, if he has not done so.

The law provides that every married man who had an income of \$2,000 or more and every single man who had an income of \$1,000 or more in 1917 must report to the income tax collector. This must be done by April 1. Delay lays the offender liable to a severe penalty.

All income from the sale of crops, animals, animal products, in fact, everything produced on the farm, must be summarized. Crops or live stock are not regarded as income until sold. If a farmer carries over his corn or hogs until 1918, they are not counted for last year but this instead. Likewise, products carried from 1916 and sold last year are listed as 1917 income. Values of groceries or clothing received in exchange for butter, eggs or other products, must be counted as income. Value of the living each man obtains from the farm, such as food, fuel and house rent, must be reckoned as part of the fund on which to pay taxes.

These and many other details of the new law require accurate systems of accounting on the part of every farmer. Those who have kept books showing their incomes and expenses will have little trouble reporting to Uncle Sam's income tax man now in the state. Those who have not kept accounts will have to get busy at once and prepare to keep them as they will be more necessary than ever this year.

DIRECT MARKETING.

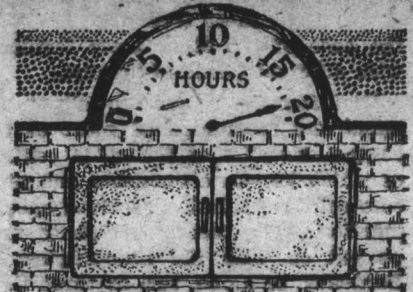
Are you in a position to sell butter, eggs, and other products that do not need to be processed in any way before being used, direct to the consumer? Should you care to do this, but do not have the names and addresses of consumers to whom you may dispose of these products, this journal would be very glad to receive your name and the names of the things you would like to sell under this plan, with the idea of putting you in communication with parties who would like to purchase what you have to sell. Not only

have arrangements been made with the postal authorities for getting the producer and consumer in touch with each other, but also the department is doing everything within its power to improve the service so as to handle these crops with the greatest dispatch and to the satisfaction of all parties concerned. If you are interested forward your address to the Michigan Farmer immediately, as it will require a little time to place these names before prospective buyers of your products.

WAR DEPARTMENT PURCHASES POTATOES.

During the remainder of the potato season the war department will be a liberal purchaser of potatoes to supply the various military camps throughout the country. Bids for the supply required for March closed on February 19. The needs for that month are estimated to total 230,833 bushels. The regular purchase of this and a similar amount each succeeding month ought to give a little aid to improving the conditions of the market. The weaker feeling of the trade which has recently obtained in the various important cities no doubt is due to the sudden rushing marketward of supplies that had accumulated at shipping points during the long period of cold weather. It is generally believed, however, that with the catching up of consumption and the normal movement of the crop, together with other factors, including the above noted war contracts, a stronger tone should obtain in trading centers. The war department is calling for United States grade No. 1 in sacks. Any parties wishing to correspond with the officials should address the Subsistence Division of the above office.

The Chicago milk consumers are paying twelve cents a quart for that important article of food, and the milk commission has recommended that this price be continued for the present, with compensation to producers to be 5.85 cents a quart and that to distributors 6.15 cents a quart. It is recommended that compensation to producers be lowered gradually up to July, so that February producers receive \$3.07 per 100 pounds and July producers \$1.80. Dairymen have made objections to this schedule, and many have stopped selling. By dividing the distribution among far too many firms, the cost to consumers is unduly increased, the farmer getting less than the city milk firms.



A Baked Cereal Food

Different from the usual run of toasted or steam-cooked cereals,

Grape-Nuts

is baked in giant ovens—baked for nearly twenty hours under accurate conditions of heat, so that the whole wheat and malted barley flours may develop their full, rich sweetness.

You don't need sugar on Grape-Nuts.

"There's a Reason"



OTTAWA ENGINES

Kerosene Oil, Gasoline and Gas

Let me send you an engine to earn its own cost while you use it—for my Kerosene engine gives more power from a gallon of 6-cent kerosene than you can get from a gallon of 20 or 25-cent gasoline in a gasoline engine—Easy to start; easy to operate; no cranking; no batteries. All sizes—2 H.P. to 22 H.P.—Stationary, Portable and Sawing Outfits. **10-Year Guarantee on Every Engine.** Write for Latest Prices.

Direct From My Big Factory

Ever since I started my factory, years ago, I have been selling engines direct from the factory to the man in the shop or on the farm. Now, as before, any honest man can have my engine on

90 DAYS' TRIAL

Every engine I send out must make good all I guarantee. No need to pay double my price for any good engine, or take an out-of-date engine for any kind of a price. Let me show you how to figure what an engine is worth and

How To Know Better Engines

My newest book helps you choose a safe and value-received engine—How to make simple tests—and all about valve in head motor. Send me your address today. Just a postal card will bring this newest and latest book.

Geo. E. Long, OTTAWA MFG. CO.
1364 King Street, Ottawa, Kansas.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow crops with less expense and labor? How can I grow fancy fruit at low cost? The

IRON AGE Barrel Sprayer



(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy working pump placed outside the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.

Bateman M'fg Co., Box 24E, Greer, N.J.

BIG PROFITS NOW

In sawing lumber with our up-to-date saw mills. Make your engine earn money all year. Start now when the price of lumber is highest ever known, and the demand enormous. Don't miss the chance to make big money. Write for our FREE catalog and prices.

R. R. Howell & Co., Mfrs., Minneapolis, Minn.

Good Plowing

is necessary for good crops, and good plowing is largely dependent on the plow you use. Moline plows have long been famous for the good quality of their work. In addition they have many improvements which add to their convenience, durability and light draft. No matter what your plowing requirements or the type of your soil, there is a Moline plow made for you.



Moline Junior Sulky

An extremely simple, light draft plow of splendid working qualities. Pulls as easily as a walking plow. All the driver has to do is guide the horses. Automatic wheel guide is controlled by the hitch, and the plow always follows the furrow. Makes a square turn to the right or left. Equipped with Moline guaranteed chilled bases or steel bottoms.



Moline Two-Way Sulky

An excellent plow for hillside work and difficult plowing. Plows deeper and is lighter in draft than the ordinary two-way plow. It is made extra strong and is easily operated. Pole is self-aligning. Beam has 3 to 6 inches more clearance than other plows and wheels are set further apart. Bottom is raised by pressing a foot lever. Seat easily and quickly adjusted so that operator always sits level. Equipped with Moline guaranteed chilled bases.



Moline Best Ever Sulky and Gang

An easy foot lift plow made in 1 or 2-bottom sizes. Extremely light in draft because the wheel control is correct. The rear wheel is not affected by any motion of the tongue, and the tongue is not crowded against the horses by the rear wheel. Does splendid work under all conditions. Equipped with either Moline guaranteed chilled bases or Moline steel bottoms.



Moline Power Lift Gang

Fits any size of tractor. Power lift is so arranged that bottom can be raised entirely out of the ground or any intermediate distance by simply pulling a cord—a desirable feature in difficult plowing. Very strongly constructed for hard usage. Thoroughly turns soil and covers trash. Made in 2, 3, 4 or 5-bottom sizes. Equipped with either Moline guaranteed chilled bases or Moline steel bottoms.

Your Moline dealer will be glad to show you these plows. If there is no Moline dealer in your locality write us for further information. Address Dept. 42.

Moline Plow Co.
Moline, Illinois

GOOD SEEDS

GOOD AS CAN BE GROWN
Prices Below All Others
I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.
Big Catalog FREE
Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.
R. H. SHUMWAY, Rockford, Ill.

PLAN FOR EGG AND POULTRY TRADE.

After a two-day conference with representatives of the egg and poultry trade, it is expected by the food administration that definite agreements regulating the price and distribution of these products, both fresh and storage, will be worked out. More than thirty of the big shipping and distributing interests were represented at the conference, and after hearing the views of the food administration experts they appointed two general committees to draft the agreements. One committee represents the egg and the other the poultry trade. If the plan submitted is acceptable to Food Administrator Hoover it will be put in force as a voluntary measure and the necessity of compulsory regulations obviated.

Chief among the reforms desired by the food administration are the elimination of unnecessary handling and the abolition of speculation, both of which will have a direct effect upon prices. A sharp differentiation probably will be made between the distribution of fresh and cold storage eggs. The cold storage product represents what is considered as practically a non-perishable product, and the food administration wishes its sale to be governed along the same general lines followed in the sale of other non-perishables—price to be based upon purchase price, without consideration of its replacement value. Each sale, it holds, should be regarded as a separate transaction, to be governed by a regulation prohibiting more than a normal profit on the individual transaction. Fresh eggs and poultry are regarded as belonging in an entirely different category, and the profits may be gauged on the seasonal business rather than on separate transactions.

COOPERATION IN MICHIGAN.

The Muskegon-Grand Haven Growers' & Shippers' Association has just closed its first year's business and fruit and vegetables handled, amounting to \$54,898.72 through the cooperative system, brought about savings sufficient to cover operating expenses and the return to members of the membership fees paid July 1. Officers were reelected as follows: President, Arthur DeBaker, Muskegon; secretary, Frank Hile, Muskegon; treasurer, Wm. Foster, Grand Haven.

The Branch County Cabbage Growers' Association met at Coldwater and reports showed a prosperous year. The 1917 crop brought \$20,098.73, with average price to the grower of \$17.32 per ton net. Officers were elected as follows: President, Guy O. Widner; secretary-treasurer, W. D. Tripp.

The Square Deal Cooperative Association of Charlotte, Eaton county, received \$381,040.31 for live stock shipped during 1917, and stock losses were reduced one-half as compared with the previous year. P. M. Granger is the new manager and Percy Young is secretary.

The Fremont Cooperative Produce Association, Newaygo county, has closed the best year's business in its history and has reelected D. H. Brake as president and Dirk Kolk as secretary-treasurer.

The Farmers' Elevator Company met at Freeport, Barry county, and reports showed net profits for the year of \$2,720.11, despite large expense incident to installing new engines and other equipment, during which time the elevator was closed. It was voted to run the business in the future on a cash basis, also to pay stockholders a dividend of four per cent per year from the date of organization.

The Burr Oak Cooperative Association in Branch county has done business amounting to \$214,670.12 during the past year. A new warehouse will be built.
ALMOND GRIFFIN.

150,000 Farmers Quit Guessing When They Paid Our Dealers \$10,000,000 for "Z" FARM ENGINES

150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks-Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
3. Simplicity and staunch durability.
4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

Economy and efficiency, with "more than rated power" in an engine is the war-time-demand of farmers of America.

They have "quit guessing"—they demand action, proof-performance on their kind of work.

So 150,000 leading owners have backed their judgment on the FAIRBANKS-MORSE "Z" Engine with \$10,000,000.

That's a lot of engines bought for reasons you'll find are wise ones.

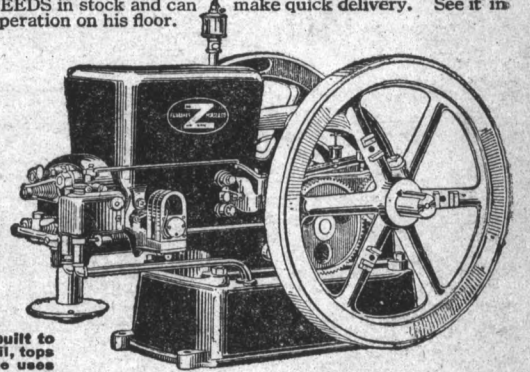
"Z" 3 & 6 H. P. ENGINE Uses Economical KEROSENE Also Distillate, Coal Oil Tops or Gasoline

Kerosene, easy to get, at half gasoline costs, does the work in a "Z" with more than rated power. FAIRBANKS-MORSE engine designers saw this war-demand coming and built "Z" Engines to fit the farmers' needs. The farmers know it now—over 150,000 strong—Will you too investigate? Compare. Figure out the FACTS—before you buy ANY Engine. *Alright—we know the result, because—*

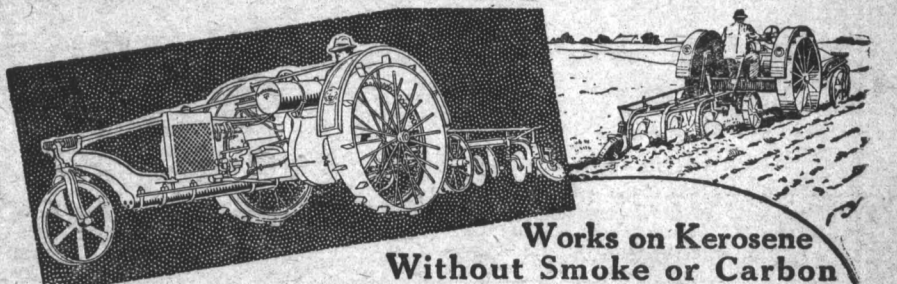
You Also Get This Local Dealer Service Go to the Fairbanks-Morse Dealer. He is in position to render you prompt and personal service. He has exactly the "Z" for your NEEDS in stock and can make quick delivery. See it in operation on his floor.

3 H.P. \$89.00
6 H.P. \$156.00
Both With Throttling Governor
1 1/2 H.P. (Gasoline) \$48.29 on skids
All F.O.B. Factory, With BUILT-IN MAGNETO

The 3 and 6 H. P. sizes are built to use kerosene, distillate, stove oil, tops or gasoline. The 1 1/2 H. P. size uses gasoline only.



FAIRBANKS, MORSE & CO. Chicago - Manufacturers



Works on Kerosene Without Smoke or Carbon

The La Crosse Happy Farmer Tractor is a regular kerosene tractor. It's not just adapted to work on kerosene—nor just equipped with a kerosene carburetor, but is built with every unit of the motor designed to operate on kerosene and do it well. That's why Happy Farmer owners have no carbon trouble—no smoke nuisance. Patented short intake with hot exhaust passing through it completely vaporizes fuel charge. Positively prevents waste of fuel and guarantees full power all the time. Water jacketed twin cylinders—automatic control of spark—easy accessibility to working parts—sturdy construction—simple design. Economy of operation and ease in handling make the Happy Farmer the tractor you want for all around farm work. Write for full description. We have a distributor near you for prompt service.

LA CROSSE TRACTOR CO., Dept. 40, La Crosse, Wis.
Turns in its tractor
La Crosse Happy Farmer Tractor
The Perfect Kerosene Burner
Model "B" \$975
12-24 H.P.
Model "A" 8-16 H.P. \$685.00

WERTHAN PAYS HIGHEST PRICES FOR EMPTY BAGS
CASH FOR EMPTY BAGS
We pay highest prices and also freight charges. Be sure to get our prices before disposing of your bags. They're worth money to you and we'll pay you best cash price for them as soon as received and assorted. Write us at once stating how many you have.
WERTHAN BAG COMPANY
61 Dock Street St. Louis, Mo.

CLOVER AT WHOLESALE
We save you money. Buy now before advance. Crop short. We expect higher prices. Don't buy Field Seeds of any kind until you see our samples and prices. We specialize on Guaranteed Quality, Tested Clover, Timothy, Alfalfa, Sweet Clover and Alsike; sold subject to your approval and government test. Write today for samples, special prices and big Profit-Sharing Seed Guide.
American Mutual Seed Co., Dept. 131 Chicago, Illinois
BEAN Seed. 100% purity, sample and price on request.
MAYERS PLANT NURSERY, Merrill, Mich.
Western Alfalfa Seed. Grown in Wyoming and Montana. Write us for prices. Lovell Commission Company, Lovell, Wyo.



The Way to Measure Rubber Footwear Quality

Count the number of days wear you get from your rubber footwear and figure out the cost per days wear.

Do this with "Ball-Band" Rubber Footwear and you will see that it wears longest at the lowest price.

"BALL-BAND"
Rubber Footwear

Wear it yourself and buy it for your boys. Because it is vacuum cured into one solid piece it gives you more comfort and more protection — and saves your expensive leather shoes.

Nine and one-half million people buy "Ball-Band" Boots, Arctics, Knit Boots and Light Weight Rubbers. Sold by over 55,000 dealers. Look for the Red Ball Trade Mark when you buy and be sure you are getting the genuine "Ball-Band."

MISHAWAKA WOOLEN MFG. CO.
319 Water St. Mishawaka, Indiana
"The House That Pays Millions for Quality"

Preparing for the Spring Pigs

By N. A. CLAPP

NOTWITHSTANDING the fact that the great law-giver, Moses, taught the children of Israel that swine flesh is unclean and unfit for human food, the modern hog has been so bred, fed and developed that he has challenged the approval of the modern civilized world and stands today the most economical meat producer among our domestic animals. His flesh more closely meets the needs of humanity under varying conditions like well arranged enterprises in times of peace and the binding necessities during the periods of war.

At the present time the pork meats are the first to be considered by those who are planning for the needs of the allied armies now in the various army camps in our own country as well as those in active service in Europe. Statisticians are careful to tell us that there is, and is likely to be for some time to come, a shortage in the number of hogs that will be raised and marketed during the coming years. Too many farmers are taking to the plan of selling their grain instead of marketing it at higher prices through the hogs. It is estimated that at the present time there is a shortage of about six million hogs. In other words, there are six million hogs less than the estimated number required to meet the home needs and the demand from abroad.

In order to encourage farmers to keep and breed more sows, the Federal Food Administrators have fixed the prices for hogs proportionate to the prices for corn, and have planned for a good margin of profit, and yet, with the exception of some favored localities, and favored individual conditions, there does not seem to have been as general a response to the urgent call for more hogs from the prospective crop of spring pigs of 1918 as there should have been. We might mention several reasons why the number of hogs that it will be possible to bring forward to market the coming summer and fall will not be equal to the requirements of consumers at home and the soldiers in Europe.

The food administrator has said that he should rely on the American hog to win the war. With such a statement it seems that the patriotism of the American farmers ought to be aroused sufficiently to encourage them to make the effort to meet the needs of our own people and to supply the armies in Europe. With such a view in mind it is evident that great responsibilities rest on the American farmers.

Precautions Needed.

With all the urging by the food administrator and the Department of Agriculture to plan to raise more hogs, there has not been a word of caution or a practical suggestion given which would help to guide the inexperienced in a way to help them carry out the task of securing an increase in the number of pigs the coming spring.

Conditions the present winter are very unusual and extraordinary. For eight weeks the weather has been severely cold. Under such conditions sows that have been bred for spring litters are pretty likely to spend a good deal of time in the nest and neglect to take the proper amount of exercise to enable them to impart life and vigor to the pigs. Inexperienced pig raisers may think they are doing well by the sows by keeping them confined to the pen during the cold weather, when it is one of the worst things that can be done for them. The sows should have considerable exercise each and every day, even if the weather is cold. To encourage exercise the sows may be compelled to go a considerable distance from the nest for their feed. Such a scheme will give regular exercise and will be productive of good re-

sults. It helps to keep the sows in possession of themselves, prevents stiffness and forces a healthy circulation of blood throughout their whole system and the foetus will partake of the same healthy condition.

Feed for Brood Sows.

While the sows should have a great variety of feeds to enable them to do the double duty of sustaining themselves and furnishing nourishment to the pigs which they are carrying, preference should be given to the rather bulky feeds which are rich in protein. Ground oats, wheat bran and middlings, with a small percentage of corn meal, or whole corn, is better than feeds rich in carbohydrates. It is well to give the grain feeds in the shape of sloppy feeds, and if the weather is severely cold it should be warmed before it is given each time.

The sows should be habituated to eating some forage feeds, such as clover hay, alfalfa and cornstalks to chew on. Such feeds supply the mineral matter needed at this time and aids in bulking the feeds and promoting perfect digestion. This part of the feeding should not be neglected if excellent results are desired.

Make the Sows Comfortable.

By all means make the sows comfortable by giving them a dry, warm place in which to sleep and remain during stormy weather. Do not let them be harassed by other kinds of stock or compel them to remain with the boar or other pestering swine. A comfortable, quiet place in which to sleep will help to cultivate an agreeable disposition which will in a great degree be imparted to the pigs.

If exercise is given, a variety of feeds are used which will prevent constipation and comfortable quarters furnished, good results may be expected. If the exercise is not attended to, and laxative feeds not furnished, dead litters and sows eating their pigs at farrowing time may be considered the probable results.

FEEDING BUCKWHEAT TO COWS.

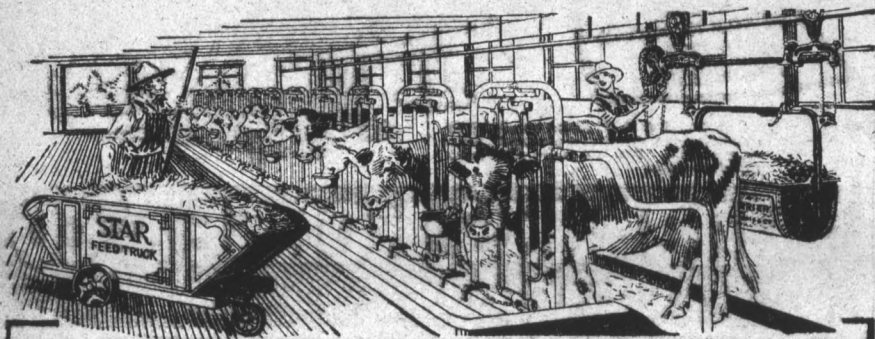
I have five acres of buckwheat not threshed as yet, and have been considering feeding same to my cows, as I do not know when the thresher will get around, and the sparrows are feeding from it pretty much. Do you believe I would better feed it to the cows or wait for the thresher? If I feed it, about how much should be given at a feed per cow, giving 20 lbs. of milk daily?

Kalamazoo Co.

S. L. P.

I don't believe you will get very satisfactory results in feeding this buckwheat in the bundle to dairy cows. In the first place, a grain as small as buckwheat ought to be ground or the cows will not masticate it sufficiently to get satisfactory digestion and assimilation. If fed whole much of it will pass through the alimentary canal without being assimilated. Again, the buckwheat straw, unless it was cut early, will not be relished very well by the cows, and besides, no one can tell you how much of this feed should be fed. It would be difficult to offer an intelligent opinion. Of course, if one fed it as a small portion of a ration and would only use a very small amount for each cow it would help make a ration. No harm would come and there would be less likelihood of loss. But my judgment would be to wait for the machine and get the buckwheat threshed, then in all probability it would pay to get the grain ground, sell the buckwheat flour for human food and feed the middlings and bran to the cows. Buckwheat middlings are a splendid food for dairy cows, being rich in protein. It is a good grain to feed in connection with corn meal because it helps supply the protein which the corn meal lacks.

COLON C. LILLIE



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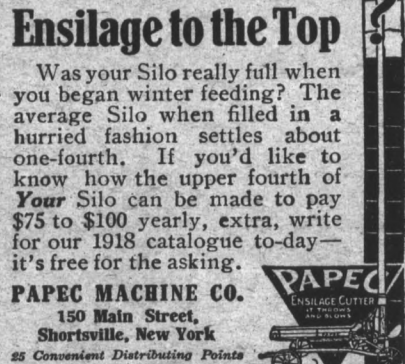
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Shortsville, New York
25 Convenient Distributing Points



Bone Spavin

No matter how old the case, how lame the horse, or what other treatment has failed, try

Fleming's Spavin and Ringbone Paste, \$2 a Bottle
One application usually enough; sometimes two required. Intended only for the established cases of Bone Spavin, Ringbone and Sidebone, causing chronic lameness.

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MINERAL HEAVE COMPOUND

in use over 50 years CURES HEAVES

Small Free 50 Package guaranteed to give satisfaction or money back. 50 Package sufficient for ordinary cases.

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MULES VS. HORSES.

I would appreciate it very much if you would tell me what you can about mules. At what age do they get their growth? If a pair of long two-year-olds weigh 850 pounds each and stand fifteen hands high, what ought they to weigh and measure when matured, providing, of course, they are not over-worked and are well kept. They have always been grained when stabled, the same as our colts have, and our colts generally weigh 1600 to 1700 pounds when grown. We have found that it takes three horses weighing around 1400 pounds each to do our plowing. How would a pair of mules as described above compare with a pair of 1400-pound horses on a plow? Some tell me they will be the equal, but it hardly seems possible, as they seem so small. They are an experiment with us, and no one around here seems to know much about mules. They are out of an 1100-pound Hambletonian mare and a jack weighing around 800 pounds.

B. C.

Mules attain their growth at a slightly earlier age than horses. Those from mares of the lighter breeds—such as our correspondent's—will mature earlier than those from mares of draft blood. The size of mules at maturity, too, varies in accordance with the kind of mares they are from, those from draft mares reaching a greater size than those from mares of the light breeds.

When mares of draft blood are mated with a heavy-boned jack it is not uncommon to get mules that, at maturity will be from sixteen to seventeen hands high, and weigh from 1300 to 1650 pounds. As a rule, those from mares of the lighter breeds will range from fifteen to sixteen hands and will weigh from 1000 to 1250 pounds, these figures applying to mules from mares not under fourteen and three-quarters hands. It is hardly to be expected that our correspondent's mules will mature to the weight of the horse colts he has been raising, which evidently were sired by a heavy draft stallion. They may attain a weight of 1250 or 1300 pounds, in which case they will do as much work as horses weighing considerably more.

For steady, hard pulling the mule has no equal. Extreme heat affects him not at all, nor does extreme cold. He has more endurance than either of his parents and, as a mule will seldom eat more than is good for him it is very rarely that he suffers from the diseases brought on by over-eating, which the horse is so subject to, nor is the mule as particular as the horse about what he eats.

The nearer the mule comes to the draft horse in body conformation the more desirable is he, and unless from smooth, draft mares mated with a jack having lots of bone, are quite certain to have the right conformation with weight ranging from 1500 to 1700 pounds. Such mules sell readily for prices fully as high as are paid for draft horses of the highest grade.

New York. H. L. ALLEN.

LIVE STOCK NEWS.

H. F. Jordan, of Colorado, recently marketed in Kansas City, a wind-up shipment of 16,000 head of pea-fed ewes. He has been known as an extensive sheepman for twenty-five years and besides the ewes he has marketed, he is wintering 40,000 head of breeding ewes, which will be fed hay all the winter. These ewes shear close to seven pounds of wool each. He sold his clip of wool last year for over \$100,000. Mr. Jordan attributes the enormous falling off in the production of wool and mutton in the United States in a series of years to the taking up of the former vast ranges by settlers, and as much of the land cannot produce crops large enough to support these settlers, much of it is being bought back by rangers and turned back to grazing, the only way it can be made to produce fair returns. The sheepmen now must buy mountain range lands for summer grazing and own lands for wintering their flocks or else abandon the industry. The sheepmen have been extremely prosperous during the last few years, with high prices and have made substantial profits.



In The Nation's Service

America is sending its best men to fight for freedom and in their honor the whole land is dotted with service flags carrying the stars of sacrifice.

It is a far cry from the crowded city streets above which floats our service flag to the telephone exchange hidden in the front-line trenches. But the actuating spirit of service here and abroad remains unchanged.

The Stars and Stripes is the emblem which unites us

in war for human liberty and national honor. The service flag is the emblem which unites us in mutual sympathy for the men who give themselves and for those who give their men.

These flags should inspire all citizens to greater endeavor and greater sacrifice. As one of the agencies of preparation and military support, the Bell System is honored by the opportunity to do its share.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES
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GALLED AND SORE SHOULDERS, NECKS, CUTS, WOUNDS
HOOF, SORE FEET-SCRATCHES-SORE TEATS ON COWS

C. G. PHILLIPS The Wool Fat Man

I Want You to Try this Healing Compound at My Expense

I am making this liberal offer because I know that after you have tested this wonderful remedy you will never be without it again.

CORONA WOOL FAT is extracted from the skin and wool of sheep—its healing, soothing, penetrating qualities are unlike anything you have ever used. For Galled and Sore Shoulders, Necks, Collar Boils, Barb Wire or other Cuts, Wounds, Scratches, Split Hoofs, Sore and Contracted Feet on horses, Sore Teats on Cows, etc., it has no equal. It will not blister.

I don't ask you to take my word for it—get this free box and prove it for yourself. A postal brings it free and postpaid. We also manufacture Corona Distemper Cure for horses and cows and Corona Balm for household use. Corona Remedies are for sale by leading Blacksmiths, Druggists, Hardware dealers and Harness dealers. Send for free trial box TODAY.

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BAG BALM

MADE BY THE KOW-KURE PEOPLE

The great healing ointment that thousands of dairymen swear by. Used with quick effect on Caked Bag, likely to occur when a cow freshens; also splendid for all udder sores, cuts, chaps, bruises, cracks, bunches or inflammation. Bag Balm protects, penetrates and induces quick, normal healing. Keep a box on hand constantly.

Sold in big 50c. packages by feed dealers and druggists. Write for free booklet, "Dairy Wrinkles."

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Grind corn and cobs, feed, table meal and alfalfa. On the market 50 years. Hand and power. 23 styles. \$4.80 to \$40. FREE TRIAL. Write for catalog.

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Dairy Problems

By COLON C. LILLIE

CREAM DOES NOT PROPERLY MIX.

I have one cow, Jersey and Guernsey, and when churning her cream alone there will come large and small flakes of something that looks, tastes and feels like cream, but it will not mix with the butter while in the churn. If you churn the cream for just a few minutes the churn will be lined with these flakes, some nearly as large as a small Canadian five cent piece. As much as two cups have been taken from one churning. It was not nearly so bad early in the fall as it is now. I am feeding cornstalks now with a bran and chop slop. These flakes will smell strong in just a short time. It will mix in with butter when working it, but I think it makes the butter get strong quick. How can I eradicate the trouble? Any suggestions will be greatly appreciated.

SUBSCRIBER.

I am of the opinion that your trouble all comes from the fact that your cream is not uniformly mixed and ripened before you churn. Where one has a number of cows and churns at least three times a week, there is never any trouble in anything of this sort, but in the case of very small dairies where the cream is kept for several days, as it must be before enough accumulates for a churning, and the weather is cold, very often one has all kinds of trouble in getting a proper separation of the fat from the cream.

In the first place, warm cream should never be mixed with the cold cream. If you skim the milk and put the cream in a cool place and then at the next skimming mix warm cream with it, you won't get first-class results. The cold cream should be warmed to the same temperature before it is mixed and when you have a sufficient amount of cream for a churning, then the cream ought to be all warmed up by setting it in a vessel of warm water and gradually heating the cream until it is of even temperature of seventy degrees throughout. This cream now should be allowed to stand for twenty-four hours at this temperature, occasionally stirring it, then you get a homogeneous mass all of the same temperature. Now, before churning, the vessel containing the cream should be put into a vessel containing cold water and the temperature gradually reduced to at least 60 degrees before churning.

The churn should be warmed up if it has been kept in a cold place, until it is about the same temperature as the cream. Now, if you will churn the cream at a temperature of sixty degrees I don't believe you will have the trouble that you indicate.

BALANCING A RATION FOR DAIRY COWS.

I have no ensilage. I will have three good cows this winter, but am short of feed. At present am feeding corn stover twice a day and alfalfa hay at night and for grain am feeding corn and oats ground together equal parts by weight. How can I improve this ration? I have plenty of oats but not much corn and cannot get any unless imported, as the corn is all soft in this locality. I can buy bran for \$1.90 per cwt, oil meal for \$3, cottonseed meal for \$2.75. Will have to buy some hay, which will cost me from \$15 to \$20 if I can find any. Would like to know how I can feed my cows so as to get the most milk for a dollar, and keep them in good condition.

Branch Co.

SUBSCRIBER.

A feed of alfalfa hay, which is rich in protein, helps to balance the corn stover, which is deficient in this element. But you would not have an excess of protein, even though more than a sufficient amount of your roughage were fed.

Corn and oats ground together are the basis of one of the best grain rations that a man can compound, but they also are a little deficient in protein to get the best results so the thing to do is to add to this grain ration you have, some concentrated food rich in protein, like oil meal, cotton-

seed meal, gluten feed, etc. As you have no corn silage or succulent food of any nature, I would prefer oil meal to cottonseed meal because cottonseed meal is inclined to be constipating. My judgment would be to add two pounds of oil meal to this ration and then feed enough corn and oats so that your cows will get about one pound of grain for every three or four pounds of milk they produce a day.

If you have not sufficient corn to last you through, this can be dropped from the ration and ground oats fed alone, or you could purchase dried beet pulp to substitute for the corn meal, and if you have plenty of oats and will feed them with the oil meal, I don't think you could do better.

If you haven't sufficient hay to last through the winter, I am quite sure it will pay you to buy more if you can find it, even though it is high, because cows to do their best ought to have one feed of hay a day at least. It is perfectly proper to feed straw and cornstalks when we want to turn these waste products into money, but they should be fed in connection with hay if possible. The cows will do better. It makes the whole ration much more palatable.

THE BUTTER IS HARD.

I am making butter from two Jersey heifers, one three years old and the other two years. The trouble is that the butter is too hard. It seems almost impossible to soften it so that it will spread readily. My cream is always in fit condition and I have it at a temperature of from sixty-three to sixty-five degrees when I churn, and it takes me from three to five minutes to churn.

Hillsdale Co.

Mrs. E. M. McB.

It is characteristic of Jersey cattle that the butter-fat in their milk is firm or solid, more so than almost any other breed. In warm weather this is a very desirable quality because the butter will stand up when served on the table. The fat from some breeds of cows is so soft that in warm weather it will fairly melt on the table. Now, while this quality of firmness in the fat is very desirable for the warm portion of the year, when it comes to cold weather it is not so desirable. If Jersey butter gets cold it is so firm that it is difficult to spread it on the bread. This can be overcome, of course, by keeping it in a warm place in the winter time and that is the way to handle it.

Again, different foods produce different effects on the butter-fat with any breed of cattle. For instance, cattle that are fed heavily of cottonseed meal produce a firm fat. In well regulated creameries in the summer time when butter is apt to be warm when it gets to the market, and therefore not as salable it is a common practice to have a few of the large dairymen feed their cows cottonseed meal on pasture. This will firm up the fat so that it makes the butter stand up better. Again, oil meal tends to produce a softer fat and so if we want to have a softer butter in the winter time we can change its texture quite perceptibly by feeding quite heavily of oil meal. Corn meal also tends to produce a soft fat, while bean meal tends to make a hard or tallowy fat. For one's own use it doesn't make so very much difference because if the butter is too hard in the winter time it can be kept where it is warm and in the summer time it can be kept on ice until it is ready to be served. In real warm weather, however, even if it is on ice it melts before it can be eaten on the table. In your case, all I can recommend would be to feed corn meal and oil meal, one balances the other so far as food nutrients are concerned, and feed them quite liberally and this will tend to produce a softer product.



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Perfect heating guaranteed at a cost of 35% less fuel than by stoves. Save fuel—it is needed. Get comfort—you are entitled to it.

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Over 50,000 homes in the United States heartily endorse Caloric quality. The owners know the merits of the Original Patented Pipeless Furnace. They have daily proof that it correctly applies Nature's own law of circulating heat, that it saves at least 35% of the fuel and that its Ironclad Guarantee of comfort and economy is always made good by its performances.

Caloric success is due to its principles of construction. The Caloric is not a pipe furnace with a casing, nor is it a makeshift to meet a new demand. The best efforts of scientifically trained engineers resulted years ago in this new type furnace, which has been refined and improved until it embodies principles necessary to your satisfaction not found in imitations, because they are fully protected by patents. There is as much difference in pipeless furnaces as in horses—you can buy quality or you can get cheapness, which costs more in the long run.

Let our dealer show you the Caloric and explain its exclusive features. Then you will never be satisfied with any other, and will know that it represents the most for the money. You will not make the mistake of a poor investment when you understand why the Caloric is so superior, why it stands alone in leadership and why imitations cannot produce its satisfaction to users.

The Caloric can be installed quickly in old or new houses. It burns coal, coke, wood or gas. Clean, fire-proof, well made and fully guaranteed. If you don't know the dealer, our free book "Progress" tells the facts about pipeless heating. Get it and study the question.

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"THE JAMESWAY" will show you how to accomplish greater barn results with less effort—how to increase your milk yield even if you are a man or two short. Labor is the big farm problem now—with a lot of men gone to war and many others attracted to different industries. But why worry about that when a new JAMES barn, JAMES-equipped, or new equipment in an old or remodeled barn, may be more than equal to the help you've lost. The dairyman will have to reduce his barn work—make it easier. He must substitute machinery for human muscle. He must force his cows to give more milk, with less effort on his own part.

JAMES Sanitary Barn Equipment

will enable you to do these things, at the same time taking the place of labor which is hard to get. "The Jamesway" book should be your chief assistant when you build a new barn, or remodel the old one, or install new equipment.

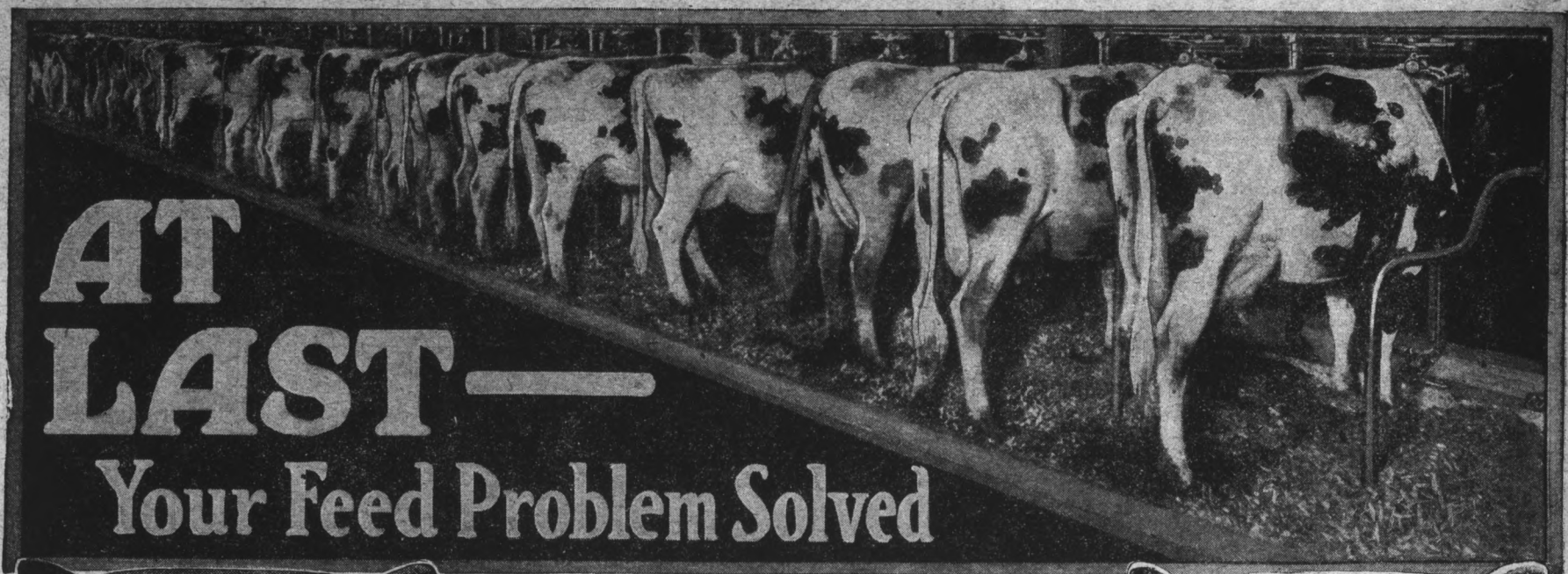
In it you get floor plans, directions for plank frame construction, advice about drainage, ventilation, etc., and descriptions of labor-saving, milk-increasing equipment.

For brass-tack reasons why James Drinking Cups, for instance, pay for themselves in one season, you need "The Jamesway." Fill out the coupon and mail today.

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I have.....cows. I am interested in the items checked: Building and arrangement of the dairy barn..... Handling the Manure..... Saving Barn Work..... Bigger Milk Yields.....

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You Can Now Feed Any Cow the Right Feed to Meet Her Individual Need

Dairy farmers and breeders have been urging us for some time, and particularly of late, to give them an ideal, high protein mixture to be used with SCHUMACHER FEED — the old reliable, ideal carbohydrate feed. They wanted a ration that would better meet the INDIVIDUAL NEEDS of their dairy cows—that would eliminate labor and guess-work of home-mixing—that had as great a variety in its protein content as we have in the variety of carbohydrates in SCHUMACHER FEED.



We are pleased to announce that after much scientific research, backed

by exhaustive practical tests, we have produced a most remarkable, high protein feed in our BIG "Q" DAIRY RATION. It is as much superior to other protein mixtures as SCHUMACHER FEED is superior as a carbohydrate feed. In addition, by feeding these two feeds in combination, we have given to dairymen the most simple, easy-to-feed ration possible to compound—one that will not only produce exceptional results in the pail, maintain the best physical condition in their cows, but save a lot of time and labor and relieve them of all guess-work incident to mixing their own. With

SCHUMACHER FEED AND BIG "Q" DAIRY RATION

fed in combination, you can easily and quickly proportion the amount of protein and carbohydrate content to suit the individual requirements of all your cows. BIG "Q" DAIRY RATION is the result of new thought and new feeding knowledge, which have eliminated the shortcomings of old time feed formulas and feeding ideas. It is a result of extended actual tests in order to eliminate all guess-work as to results. It is first, last and all the time a quality feed, combining the five essentials of an ideal protein mixture, i. e., **Palatability, Digestibility, Nutrition, Variety and Bulk.** Its analysis shows digestible protein 18.5%; total digestible nutrients, 78%.

SCHUMACHER FEED needs no introduction. It has proved its merit time and again and has to its credit (fed with high protein concentrates) more world's champion milk and butter records than any other feed. It is a highly scientific combination of the by-products of corn, oats, barley and wheat, which give it that necessary variety of grains so important in either a protein feed or a carbohydrate feed. It is particularly **Palatable, Nutritious, Digestible** and furnishes vigorous **Vitality** for both physical stamina and heavy milk production.

Schumacher Feeding Plan Suggestions

To Dry Cows { 4 parts Schumacher Feed
 { 1 part Big "Q" Dairy Ration

General Herd Ration with { 1 part Schumacher Feed
 { 1 part Big "Q" Dairy Ration
 Ensilage or Roots

To Fresh Cows with Green Feed { 2 parts Schumacher Feed
 { 1 part Big "Q" Dairy Ration

Test Ration { 1 part Schumacher Feed
 { 2 parts Big "Q" Dairy Ration
(Increase Big "Q" Dairy Ration if cow can handle more protein without bad effects.)

You will find in these two wonderful result producing feeds, that ideal combination of a variety of proteins and variety of carbohydrates you have been wanting — looking for — wishing for — a long time. Go to your dealer, get a supply, and let your cows prove for you all and more than we are able to tell you in this advertisement.

The Quaker Oats Company Address Chicago, U.S.A.

B.V.T. Silo

The B. V. T. is built like a skyscraper—to last a thousand years. Frost, heat, moisture and decay can't touch it, because it is of everlasting vitrified fire clay. These blocks are reinforced with heavy steel rods bedded in cement.

You Only Build It Once!

Four layers of tile and three dead air spaces protect silage from freezing. The patented block gives tongue-and-groove air-tight joint construction. Looks as bright and new ten years after as the day it was built. No hoops to adjust. Never needs painting or repairs. As clean and solid as a jug.

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Every B. V. T. Silo owner is a booster. Ask them what they think. Don't get any kind of silo until you at least know all about the B. V. T., the kind you never have to rebuild.

Ask us for Booklet D. Brazil Hollow Brick & Tile Co. Brazil, Indiana

The B.V.T. Block Study it carefully. It's the only perfect silo block.



HOLSTEIN BREEDERS AT GRAND RAPIDS.

The West Michigan Holstein Breeders' Association held its annual meeting at Grand Rapids, February 6, and elected officers as follows: President, H. E. Rising, Woodland; vice-president, Dr. A. J. Patterson, Grand Rapids; secretary-treasurer, W. R. Harper, Middleville; executive committee, Ray Newton, Freeport; C. Boven, Holland; Dudley E. Waters, Grand Rapids; M. D. Bath, Grand Rapids; Wm. Anderson, Kent City.

M. W. Willard, of Grand Rapids, retiring president, presided and in his annual address advised that the spring and fall consignment sales be continued, with nothing offered but guaranteed stock. He suggested that Holstein cattle be advertised more thoroughly, that accurate records be kept and that best business methods be followed.

The association voted a special premium of \$25 for best black and white cattle exhibited at the West Michigan State Fair this fall.

Ernest Ruehs, in charge of the Lakeside Dairy at Lake Odessa, in a practical talk on fitting, caring for and feeding Holstein cows for advanced registry seven-day records gave some valuable suggestions. He does not chase after all the whims and theories and advises common sense. Watch your individual cow, the weather, the season, the feeds and their effects. Learn about balanced rations and then forget it—that is, don't be blinded by the figures and details. Keep your own eyes and your own common sense at work. Every good breeder tests his herds, gets rid of the boarders and cleans up with reference to tuberculosis and abortion.

George H. Brownell, secretary of the Pontiac Holstein Breeders' Association, spoke on the milk situation in Detroit, saying that conditions have improved there and the industry is being stabilized. He complimented the Grand Rapids Dairy Company, composed of milk producers, who are cooperating in handling their own dairy products and supplying the needs of about one-third of the households of Grand Rapids. This company has recently increased its capital to \$100,000 and is planning to turn its surplus milk into cheese.

Chairman Willard, who is president of the Grand Rapids Dairy Company, deplored the lack of interest taken by the average farmer in advertising or any publicity work in connection with the sale of his products. "In our own case," said he, "we seem to think we can afford to lose \$150 a day on surplus milk, but we have little or no money for advertising."

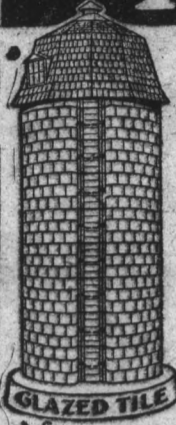
Kent Co. ALMOND GRIFFIN.

MOLDY SILAGE.

On page 178 of the February 8 issue of the Michigan Farmer, I find a note on moldy silage. It might be well at this time to call attention to the fact that whereas the various white and green moldy spots are rather common in silage, they are undesirable, because it shows that the silage was put down too dry. Under these conditions there are apt to be air spaces in the silage in which these molds develop. Although most of the molds are, comparatively speaking, harmless, yet all are undesirable in that they use up the sugars and starches, and some of them are poisonous. The latter is particularly the case with the purple silage mold, which is quite frequent in Michigan in the early spring. I had several cases reported to me last spring of cattle and horses that were killed upon being fed silage in which this purple mold had developed and similar cases have been reported from Iowa and other states.

It is probably too late to remedy the (Continued on page 256).

Put Your Faith In A Kalamazoo



A silo is a permanent investment, therefore purchasing a silo is not a question of paying a few dollars more or a few dollars less, but of getting a silo that is right—in design, in material, in construction.

"Kalamazoo" is the answer. For more than twenty-seven years thousands of successful farmers in all parts of America have put their faith in

Kalamazoo TILE AND WOOD STAVE SILOS. "The World's Standard"

Last year alone upwards of six thousand new purchasers of silos unanimously decided in favor of the Kalamazoo. And those who bought twenty or more years ago still swear by the Kalamazoo because time and experience have proven conclusively that Kalamazoo silos are right, from every standpoint. There's a big dollar's worth of value in every dollar of the cost whether you buy a glazed tile or a wood stave Kalamazoo.

They're built to meet the needs of farmers who know and appreciate the feeding value of ensilage and know how a silo should be built to make and preserve ensilage right. Kalamazoo Silos excel in design, material and workmanship—combining every desirable feature a silo should have and embodying the knowledge acquired through long experience in silo building.

You can't go wrong in buying a Kalamazoo.

GLAZED TILE SILOS—"Permanent as the Pyramids"—fire-proof, frost-proof, storm-proof, moisture-proof, acid-proof, decay-proof, vermin-proof. Galvanized reinforcing. Require no paint, no upkeep expense or repairs. First cost is the last cost. Easy to build—and once built your silo problem is solved forever.

WOOD STAVE SILOS—Your choice of four of the best time-defying woods. Kalamazoo Silos are manufactured complete ready to set up. Quickly and easily erected by inexperienced home labor. All Kalamazoo Silos, whether wood or tile, have the famous Kalamazoo Galvanized Steel Door Frames and continuous doors which are universally recognized as the best ever designed.

Write Today for our free descriptive booklet and details of our easy payment plan. If interested in an Ensilage Cutter, ask for Kalamazoo Cutter Catalog. KALAMAZOO TANK & SILO CO. DEPT. 223 Kalamazoo, Mich.

WORLD'S BEST BY ACTUAL TEST

In the Official Skimming Tests made by Jury of Dairy Experts at the World's Fair Exposition, the "IOWA" CREAM SEPARATOR outskimmed all competing separators. These Official tests and other skimming tests made by leading Agricultural Colleges, prove that the "IOWA" Cream Separator skims closest. The "IOWA" is the only separator with the famous, patented

CURVED DISC BOWL

the World's closest skimming device. Send for free book "FACTS"—tells results of skimming tests and shows how the "IOWA" increases cream checks by stopping your butterfat losses. Before you buy, see and try the "IOWA." Write today.

ASSOCIATED MFRS. CO. 551 Mullan Ave. Waterloo, Ia.

Built To The Measure

Guaranteed Capacity

WE build Sturges Cans to be more than just good milk containers. Each Sturges Can is built to be true to rated capacity. This is a big advantage in daily service. Saves work and time. Forestalls disputes with city sealers—insures pleasing your trade more. Only highest grade steel plate is used. Carefully timed, seams soldered smooth—easy to keep clean. Write for Catalog No. 46. Estd. 1865. Sturges & Burr Mfg. Co., Chicago

Sturges Milk Cans

When writing to advertisers please mention the Michigan Farmer.

Only \$2 DOWN and One Year To Pay

For any Size—Direct from Factory
You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

\$29 BUYS THE NEW BUTTERFLY
No. 2 Junior—a light running, easy cleaning, close skimming, durable, fully guaranteed separator. Skims 35 quarts per hour. We also make five other sizes up to our big 800 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

30 DAYS' FREE TRIAL GUARANTEED
Against defects in material and workmanship. You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

ALBAUGH-DOVER COMPANY, 2165 Marshall Blvd., Chicago, Ill.

\$17.95 Sent on Trial Upward American Cream SEPARATOR

Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$17.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

Easy Monthly Payment Plan

Whether dairy is large or small, or if you have separator of any make to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free on request, is a most complete, elaborate and interesting book on cream separators. Western orders filled from Western points. Write today for catalog and see our big money saving proposition.

American Separator Co., Box 1061, Bainbridge, N. Y.

Locks 50 Cows Instead Of One

West Bend BARN EQUIPMENT

West Bend Automatic Stanchions equipped with our wonderful locking-releasing lever save you time and labor—and insure safety in locking up or releasing the cow. Yet you pay no more for West Bend equipment than for ordinary stanchions that must be opened and closed singly by hand. The West Bend lever controls from 2 to 50 West Bend Automatic Swinging Stanchions. The entire row of cows can be locked up or released instantly by one throw of the lever. Cow stops are operated at same time, and when set guide cow into the stanchion. Every user says it's the greatest idea ever brought out in modern barn equipment. You certainly want this valuable new exclusive West Bend feature in your barn. Write today for catalog. WEST BEND BARN EQUIPMENT CO., 250 So. Water St., West Bend, Wis.

Magazine Section

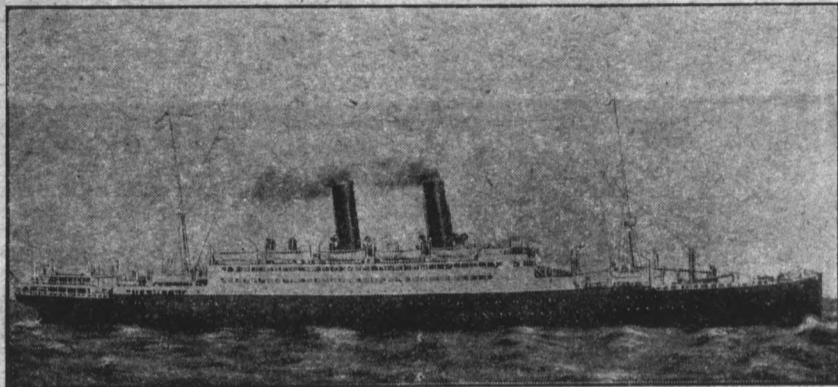
LITERATURE
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MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY. *JOURNAL*
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper every week. Every article is written especially for it, and does not appear elsewhere

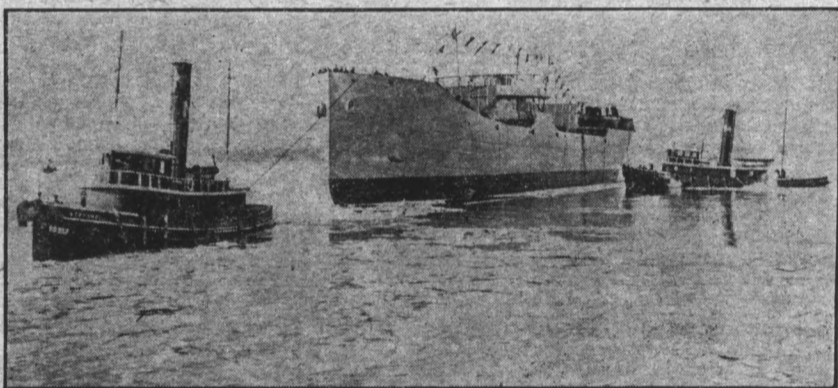
WORLD EVENTS IN PICTURES



The English Transport Tuscania Torpedoed off the Irish Coast while Carrying 2,179 American Soldiers, of Whom 168 were Lost in the Disaster.



Picturesque View in Front of St. Mihiel where Liberty Boys from the United States are Now Facing the Enemy.



Ice Floes and Winter Chill Are Not Allowed to Hinder Work on the Ships that will Bring Victory for Democracy.



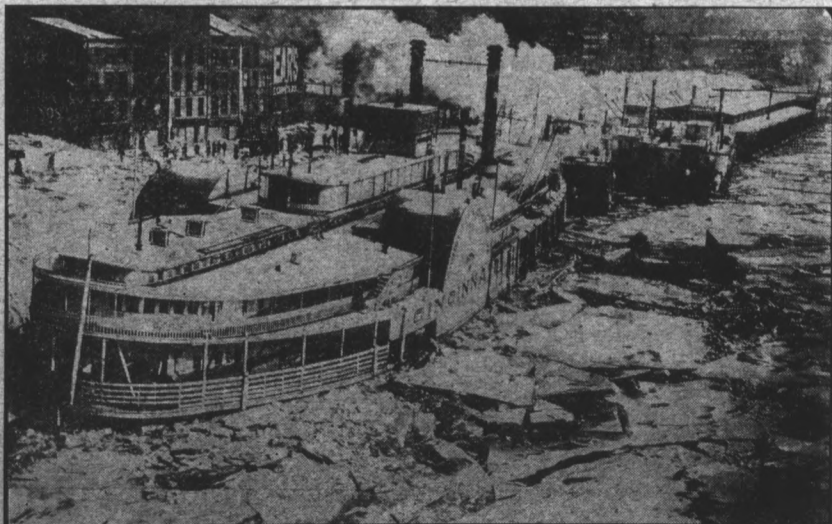
British Troops Being Moved to the Front by Means of Large Canal Barges.



Uncle Sam's Marines Being Taught a Number of Old Favorite Songs in One of the United States Military Camps.



Soldiers Dressed in White go "Over the Top" on Daylight Patrol Duty in "No Man's Land."



Much Shipping was Destroyed Along the Ohio River During the Recent Floods, which Moved the Heavy Ice Fields from that Stream.



10,000 National Army Men Going through their Calisthenic Drill with Characteristic American Vim.

GALLOWAY'S SENSATIONAL SALES

\$46⁹⁰

375 lbs. Capacity and Up

Money-Back Guarantee With Every Sale



Don't Buy a Separator Unless You Send the Coupon Today for My New 1918

Here is my Masterpiece of separator manufacturing, the designing and construction of the best separator designing brains that money would buy—a separator that stands alone with all the good features of other separators combined in this one perfect, modern model—a separator that will save you dollars through its efficiency and simplicity of operation—it is sensational in its easy cleaning features—it is sensational in its strong durability—and best of all, it is sensational in price!

Remember, my New Sanitary model is not a machine that skims clean in just certain seasons, but every day, winter or summer, below zero or when the sun is sizzling—it skims close, right down to the last drop. It shows its quality best when the service is hardest and the demands are greatest! That's where my New Sanitary model comes in and delivers 100% skimming service. And in summer, when the cows are in the fields and the milk flows extra heavy, you can depend on this New Sanitary model to skim out every trace of butter-fat! This is the year that you must get every ounce of butter-fat in the milk! Cream and butter prices are away up—likely to go higher—the least butter-fat wasted means just that many good

dollars through its efficiency and simplicity of operation—it is sensational in its easy cleaning features—it is sensational in its strong durability—and best of all, it is sensational in price! Remember, my New Sanitary model is not a machine that skims clean in just certain seasons, but every day, winter or summer, below zero or when the sun is sizzling—it skims close, right down to the last drop. It shows its quality best when the service is hardest and the demands are greatest! That's where my New Sanitary model comes in and delivers 100% skimming service. And in summer, when the cows are in the fields and the milk flows extra heavy, you can depend on this New Sanitary model to skim out every trace of butter-fat! This is the year that you must get every ounce of butter-fat in the milk! Cream and butter prices are away up—likely to go higher—the least butter-fat wasted means just that many good

GALLOWAY IS STILL ON THE STILL DOING BUSINESS AT THE OLD STAND!

LISTEN! When I started in the manufacturing business in a small way in Waterloo over a dozen years ago selling a small article—the harrow cart—and later on added the manure spreader, some of the wise ones said: "Galloway will not last long." But we just kept sawing wood, and giving the people bigger values than anyone else, earnestly trying to make our products better.

Then we added a line of Gasoline Engines; then came the Galloway Sanitary Cream Separator; and later on the Galloway Efficiency Tractor. Our business has grown and expanded year after year, and in spite of conditions has moved onward and upward in volume—winning us thousands upon thousands of satisfied customers everywhere—in every state in the Union and in Canada. This only goes to prove conclusively that our plan of manufacturing and selling direct to

the user is absolutely sound and correct.

And while it is true we have had orders promptly, and keep pace with demand, still we have been able to add to our stock stronger than ever before:—Promptly to take care of repairs promptly, so that it is on the way to you the same old Galloway accomplished by time and hard work, houses, made up, ready to ship to lay to rest. We couldn't do this the first few years, but this is one thing time and

Sensational Features of the New Galloway 1918 Sanitary Cream Separator

- First:** Every Modern Practical Separator Improvement Known Embodied in This Machine. The New Galloway Sanitary Cream Separator is simpler than Simple Simon, and is as sanitary as a dinner plate. It is as good in the parts you cannot see as in the ones you can see. The same expert attention is given to fitting a bushing as to balancing a bowl. These and many other equally important features have made it the choice of wise, careful, conservative and discriminating separator buyers who wanted the best—and got it. The New Galloway Sanitary Cream Separator has won its place at the front by force of its merit, and in the face of the strongest kind of competition.
- Second:** In simplicity of design it has no equal. Only few working parts, a main drive gear and pinion, worm wheel, bowl spindle, upper and lower bowl-spindle bearings, handle and clutch case and bowl—these are the few parts held in perfect alignment by the gear case casting.
- Third:** It is not humanly possible to build a cream separator that is mechanically more perfect—low speed bowl; discs entirely separate from each other, no raw, sharp edges to break up the globules of butter-fat; simple, self-centering neck bearing; crank shaft of high-carbon steel in bearings 2 1/2 in. long; a helical drive gear to offset side thrust of the worm wheel, lessens friction; large worm wheel with phosphor bronze wearing surface; both gear shafts and bowl spindle bearings supported by one case, perfect alignment; automatic oil supply, all working parts in an oil spray.
- Fourth:** This New 1918 Galloway Sanitary Separator could not be built from better materials nor by more skilled or expert workmen, nor in a more modern chain of factories, thoroughly equipped with every new and up to date machine.
- Fifth:** The bowl is the secret of the skimming efficiency of the New Galloway Sanitary Model. Skim milk is heavier than cream. Just as soon as the milk enters the bottom of the bowl the skimming discs throw the heavier skim milk to the outside of the bowl and squeeze the butter-fat toward the center.

The dividing disc which fits into the top of the bowl skims the milk and is perfectly distributed so that the bowl never floods and there are no disturbing areas of perfect skimming efficiency, winter or summer, no matter how cold or hot the milk is.

Sixth: The New Galloway is strictly sanitary because the bowl is without crack, crevice or imperfection. Every bit of the foreign matter is cleaner than when they were put in. Even the base is so constructed that it is very easy to clean.

Seventh: The New Galloway Sanitary Separator has a feature which is a sensational sanitary feature. The New Galloway Sanitary Separator has a feature which is a sensational sanitary feature. The New Galloway Sanitary Separator has a feature which is a sensational sanitary feature.

Eighth: Every size of this new model is guaranteed to overrate any of our machines in order to give it a firm foundation, making it very easy to clean and drip pan are combined in one piece, but are so designed that they are easy to operate. The New Galloway Sanitary Separator has a feature which is a sensational sanitary feature.

Read the Proof!

"I like your separator just fine. I think it is as good as they can be. If I were to buy another separator, I would not want any but a Galloway. They can't be beat."—Oscar A. Vick, Calmar, Iowa.

"Please send us your late catalog. We have bought several articles of you already, including a Galloway cream separator, and it has proven all that is claimed for it. Therefore we know that the name 'Galloway' stands for fair dealing, and we want your catalog."—DeWitt Bros., Cuchara Junction, Colo.

"I had some of the milk skimmed by our New Galloway Sanitary Cream Separator tested by our State Farm Bureau man, and he found only .01 of 1 per cent butter-fat in the skim milk."—C. R. McCombs, New Castle, Pa. Route No. 2.

Galloway

BUY NOW Before the next increase in price! SAVE MONEY!

SPREADERS MY NEWEST LOW DOWN NO. 8 MODEL



The one really advanced spreader of the year. It has embodied all the prime features of the world's best spreaders. Every new and practical spreader improvement is now on the new Galloway No. 8 Model. It is low down. Easy to load. Front tracks out under. You can hitch close to load. Its perfect construction makes it light draft. Two horses can handle it easily. V Rake and steel beater make for even spreading. The tough cast lumps are broken up and uniformly spread. Clean out push board. Empties load thoroughly. Has automatic stop. Steel tongue, double chain drive; spreads from 4 to 24 loads per acre. Remember, spreading is your big hope for bumper crops every harvest. Spreading renews "worn out" land. Get a Galloway and make the job easy, and save big money besides.

ENGINES

When labor is scarce and high priced, mechanical power. Get a Galloway Engine and costs nothing for wages, board or feed. There is a Galloway Engine just built for your purpose. Every part of a Galloway engine is interchangeable. It is way above the rated horse power. It has long strokes. Uses any fuel and fuel cost. Large heavy, counter-balance wheels; Webster oscillating magnets; blue-hot spark, needs no batteries. Make and break ignition, never fouls, fire, easily started, no cranking. Cylinder and water pot frost-proof. Galloway engines are scientifically built in Galloway factories and are most reliable. You get the most for your money when you invest in a Galloway. We also make complete mounted saw rigs in three sizes, 6, 9 and 12 H. P. C. They are supplied with either gasoline or kerosene. These saw rig outfits have every practical and are the best and most complete at the price. Ask about them.

We ship from factories or from warehouses in Chicago, Kansas City, St. Paul or Council Bluffs to save you freight

WM. GALLOWAY, WM. GALLOWAY COMPANY President



Aerial view of the Great Galloway Chain of Factories at Waterloo, Iowa, U. S. A., where Galloway Manure Spreaders, Gasoline Engines, Cream Separators and Tractors are manufactured complete

Win-the-War

Biggest and Best Offer Ever

Food will win this war! Grow your help toward victory. Galloway's Garden is especially planned to help you. Besides, this superb garden seed makes you an annual customer for Galloway pure tested seed.

Order Direct from This Advertiser

Pin a dollar bill to your letter and when you postpaid the garden seed collection here, a quantity of fresh, pure, tested seed for a garden 100x50 ft., and sufficient for a family of six with fresh vegetables, spring, summer and fall. Order now—four years before the supply is gone and by instant planting time comes. Money back

SENSATIONAL SANITARY SEPARATOR

Send for My Book



Until You Get Galloway's Proposition! 1918 Book About this New Sensational Sanitary Separator!

g and construction of which is the accomplishment of years of experience and the stands alone—a separator that invites comparison—that has built into it all the model—a separator that is so good mechanically that it is positively sensational! dollars thrown away. These are times when you must get the best separator made. This is no time to take chances in buying. If you are wasting time, effort and cream by the old-fashioned gravity methods of separating—or by using an out-of-date machine—stop it, and get a New Galloway Sanitary model. It will actually pay for itself the first spring in the extra amount of butter-fat it will save for you. If you are using an old-style separator that wastes cream, dispose of it, and get a New Galloway Sanitary. It will stop the loss and save you money besides. For twice-a-day, every-day-in-the-year skimming, there is no separator that can beat the New Galloway Sanitary model. Because of its real, clean skimming efficiency, it will make you money every day that you use it, in both prosperous and economical times.

Another thing: Conditions now on raw materials, deliveries, and prices were never so uncertain. If ever there was a time to plan ahead and get your orders in early, this is the year! In our manufacturing business we are now contracting for materials to be delivered next fall! We have to do it. We buy early to protect ourselves, and we advise you to buy early and protect yourself. A little careful, early planning has saved many a man real money, and this is the year when you will save more than ever before by buying early!

And don't forget that when you consider the present high prices of live stock, corn and other farm produce, compared to the present low price of my New Sanitary Model Separator, you are buying it at a figure that is actually lower than ever!

THE JOB "DIVIDING THE MELON"!

AND!—STILL SAVING MONEY FOR MY FARMER FRIENDS!

und and correct. We have had strenuous times on different occasions to fill keep pace with the tremendous demands made upon us, to add to our organization two features that stand out er—Prompt shipments, and our new Service Department, promptly, so that if you would wire us for something today the same day we get your wire. This has only been d hard work. For example: Today we have in our ware- shipth lay the orders come in, over 5,000 cream separators. st few years we manufactured cream separators or other g time and experience has accomplished. From present

indications there is going to be the biggest demand in our history for Galloway goods this spring, and my personal advice to you is that if you are going to need anything in our line to write us early, because there are two big things to guard against— additional raise in price, and inability to deliver the goods promptly a little later on.

We have made special arrangements this year so that you can order now a Galloway Separator, Manure Spreader or engine, and pay for it after next harvest. Write today for our special proposition. If you have never bought from Gallo- way there never was a better time to get acquainted than right now. Come to Waterloo and see our factories as pictured in the lower left hand corner. You will be welcome. You will be taken care of. Your visit will be appreciated by our men and by me personally. *Wm. Galloway*

8 Sanitary Separator

op of the bowl shell keeps the skim milk and the butter-fat apart. side of the bowl and discharged. All the milk gets the full skim- distributed so that each disc gets its full share to skim. The top of stirring cross currents at the bottom. These are the secrets of its sanitary because of the big, roomy, one-piece supply can without crack, crevice or corner, making it positively impossible for sepa- foreign matter in the milk is held, so that both cream and milk are on the base is sanitary. It touches the floor at the points necessary ery easy to clean or sweep under. The women folks like the New nal sanitary features.

itary Separator is very easy to operate because of a number of new al features. First of all it is a low speed type, with only 50 revolu- the bowl 7500 times. The crank shaft is just high enough so that body to the best possible advantage with the least strain on your se the Galloway because of its easy running. The cream pall shell but are so hinged that they can be easily raised and lowered. This Galloway. A ninety-day trial in your own dairy, or 180 milkings, hich the New Sanitary operates.

odel is guaranteed to skim up to its rated capacity. We have not hines in order to make the price seem lower. If you buy a New ded capacity, don't keep it. If we claim the New Sanitary will do it out in less than the 90 days' trial on which we sell it.

BUY NOW!—Pay Next Fall After Harvest!

Get your separator now when you need it. Begin the big cream saving it will make at once! Don't delay getting the implements you need because of money matters, for I have arranged my easy buying plans on purpose to accommodate responsible farmers.

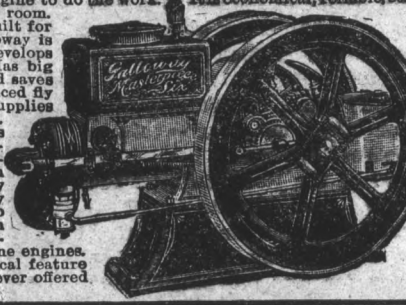
On my principal manufactured lines, Separators, Engines and Spreaders, I offer your choice of five easy buying plans and terms, one of which will surely suit you. You can pay for Cash, Bank Deposit, Part Cash and Part Note, All Note, and Instalment without interest. So buy now and get your Galloway Separator, Engine or Spreader while you need it and pay for it later after you sell your crops or with the savings these imple- ments earn for you. Some farmers may not be worth as much as others in dollars and cents, yet if they are responsible the amount of their wealth does not make much difference. It is integrity that counts. Good credit is capital. Ask about these buying plans now.



STATIONARY OR PORTABLE 1 1/2-16 H. P.

and high priced, you should plan to meet these conditions with a Galloway Engine to do the work. Its economical, reliable, steady wages, board or room.

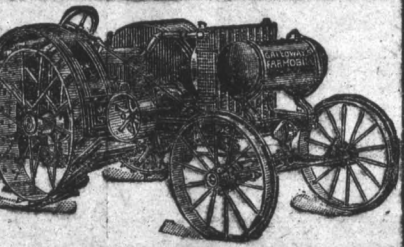
Engine just built for part of a Galloway is changeable. Develops horse power. Has big gears any fuel and saves fly, counter-balanced fly tating magneto supplies s no batteries, on, never messes, crankshaft. Cylind- st-proof. Gallo- tically built in and are easily it for you money alloway. We also ed saw Rigs in H. P. C. be sup- pline or kerosene engines. ave every practical feature most complete ever offered ut them.



TRACTORS

GALLOWAY'S EFFICIENCY — 12-20 SIZE BURNS EITHER KEROSENE OR GASOLINE

The great new Galloway Tractor is built like an automobile. It has anti-friction bearings. Twenty-one sets of Hyatt roller and ball bearings save the engine's power for the draw-bar and the pulley where the power is needed. Dynamometer tests show Galloway Tractor to take only 18 1/4% of the engine's power to pull the tractor with- out implement. This is about 1/2 to 3/4 the power required by other tractors. Has a four cylinder valve in the head, modern motor, water cooled. Exclusive patented transmission. Will pull three 14-inch bottoms 8 to 9 in. deep in clover or timo- thy seed. Will do any portable engine job— sowing, silo filling, corn shelling, shred- ding, handles a 28-in. grain separator, any kind of feed grinder, pumping or irriga- tion plant. Double chain drive. State whether kerosene or gasoline burner is desired.



COMPANY, 187 Galloway Station, WATERLOO, IOWA FARM IMPLEMENT MANUFACTURING SPECIALISTS!

War Garden \$1.00

Best Offer Ever Made
Grow your own and Galloway's famous War Garden to have you help! Garden seed pack- ment will customer for Galloway Bros.

This Advertisement
our best and we will send a seed collection pictured sh, pure, tested, profitable 30 ft., and sufficient to sup- plish fresh vegetables during l. Order now—today. Get y is gone and be ready the comes. Money back if not satisfied.

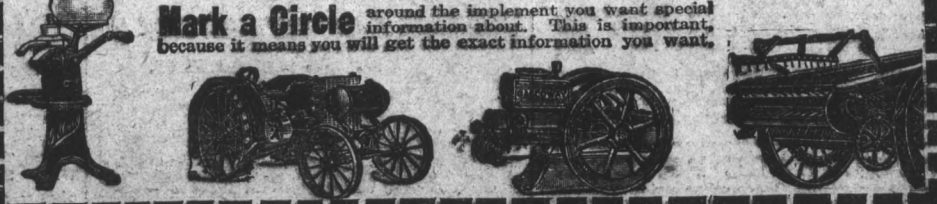


MAIL THIS COUPON TO-DAY!

WM. GALLOWAY, President
WM. GALLOWAY COMPANY, 187 Galloway Station, Waterloo, Iowa
Send me the Spring Edition of your 1918 Book.

If you want the 1918 Seed Book mark cross here.

Name.....
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Stylish—Roomy—Easy Riding With Fine Driving Qualities

You will like the look of the new Elcar models. The designs are original, different and strikingly graceful. The high-class paint work insures lasting beauty. Comfort and roominess are given special attention. Drive all day and you won't be cramped. Easy riding whether fully or partially loaded. Plenty of speed—abundant power for the hard pulls. The steering is the easiest—the control the simplest—the motor responsive and flexible.



Brief Mention of Elcar Points

Four-cylinder models, 37½ horsepower at 2,100 r. p. m. Six-cylinder models, 40 horsepower at 2,100 r. p. m. Two unit electrical system. Long wheel base, 116 inches; road clearance 10½ inches. Full floating rear axle with spiral bevel driving gears. Timken Roller Bearings front and rear. Double universal drive; tubular propeller shaft. A wonderfully easy riding semi-elliptic spring suspension. Roomy and comfortable bodies of beautiful design and durable finish; new "Cathedral Pipe" upholstery. Equipment complete, even to motometer.

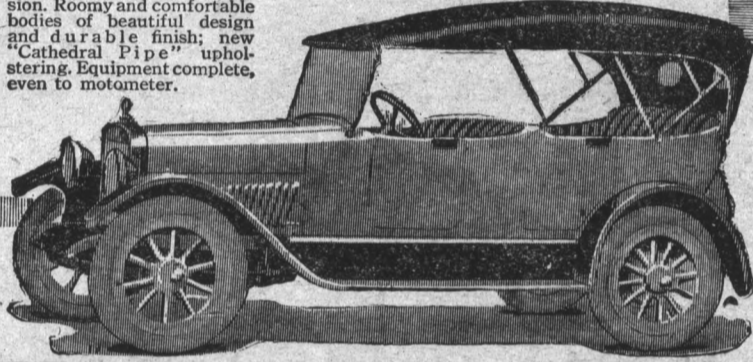
Reliable quality is a certainty in the Elcar. We learned to put in quality years ago, when building cars selling up to and above \$3,000. We give exceptional value in these quality cars at popular prices—each model large and good enough to fulfill any motor car requirement.

Don't think of choosing until you have seen the Elcar. Ask for nearest dealer's name, if you don't know him.

Catalog on Request

Write for catalog illustrating and describing the Six New Elcar Models—gladly mailed to all interested.

Elkhart Carriage & Motor Car Company
6-714 Beardsley Avenue Elkhart, Ind.



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FREE!

Just send me your name and address and I will mail you my big new Gate Book free—postpaid. Quotes prices lower than you pay for home made all wood gates. No nails used. No wood joints. Every board double bolted between 8 angle steel uprights. Self locking hinges.

"Can't Sag" GATES

—won't injure stock—easily repaired—outlast several steel, wire or gas pipe gates. Never sag, drag, warp or twist out of shape. Can be had with interchangeable elevating attachment if desired. Cost less than any other gates you can build or buy. More than half a million now in use. Write for free catalog today.

Alvin V. Rowe, Pres.
Rowe Mfg. Co., 137 Adams St., Galesburg, Ill.

More than half a million "Can't-Sag" Gates now in use
ALVIN V. ROWE
President

FREE!

Get my big book and sample of Brown Fence. Compare our prices and quality with others. We save you Big Money. Prices 2½¢ per Rod up. DIRECT FROM FACTORY—FREIGHT PREPAID. We use heavy DOUBLE GALVANIZED Wire. 150 styles—Hog, Sheep, Poultry, Horse, Cattle, Rabbit Fence—Gates, Lawn Fence, and Barb Wire. Write today for big money-saving catalog and sample to test—free.

THE BROWN FENCE & WIRE CO.
DEPT. 249 - CLEVELAND, OHIO

Wire Fence

Basic Open Hearth steel—shipped on approval direct from factory. Get our special prices for short time only. Compare with others. Rubber or metal roofing—highest quality at money-saving prices.

Standard Supply House,
40 West Logan Street,
Noblesville, Indiana.

9 CORDS IN 10 HOURS

RUNS EASY No Backache. weighs only 45 lbs. EASILY CARRIED. SAVES DOWN TREES.

BY ONE MAN. IT'S KING OF THE WOODS. Saves money and backache. Send for FREE catalog No. B 44 showing low price and latest improvements. First order gets agency.

Folding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

WHOLESALE PRICES.

on Strawberry Plants. Many other varieties and garden roots at reasonable prices. Catalogue FREE. Write today to A. H. Weston & Co., Bridgman, Mich.

For Sale "Francis" fall bearing strawberry plants \$1.50 per 100. \$10.00 per 1000.
W. F. TINDALL, Boyne City, Mich.

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SAVE EVERY KERNEL

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Inside the Lines

By EARL DERR BIGGERS & ROBERT WELLES RITCHIE

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D Her Country's Example. O you know, my dear, Cynthia Maxwell is simply going to die with envy when she sees me in this!"

The plump little mistress of Government House, standing before a full-length mirror, in her boudoir, surveyed herself with intense satisfaction. Her arms and neck burst startingly from the clinging sheath of the incomparable Doeuillet gown that was Jane Gerson's douceur for official protection; in the flood of morning light pouring through the mullioned windows Lady Crandall seemed a pink and white—and somewhat florid—lily in bloom out of time. Hildebrand's buyer, on her knees and with deft fingers busy with the soft folds of the skirt, answered through a mouthful of pins:

"Poor Cynthia; my heart goes out to her."

"Oh, it needn't!" Lady Crandall answered, with a tilting of her strictly Iowa style nose. "The Maxwell person has made me bleed more than once here on the Rock with gowns a fond mama sends her from Paris. But, honestly, isn't this a bit low for a staid middle-age person like myself? I'm afraid I'll have trouble getting my precious Doeuillet past the censor." Lady Crandall plumed herself with secret joy.

Jane looked up, puzzled.

"Oh, that's old Lady Porter—a perfect dragon," the general's wife rattled on. "Poor old dear; she thinks the Lord put her on the Rock for a purpose. Her own collars get higher and higher. I believe if she ever was presented at court she'd emulate the old Scotch lady who followed the law of decollete, but preserved her self-respect by wearing a red flannel chest protector. You must meet her."

"I'm afraid I won't have time to get a look at your dragon," Jane returned, with a little laugh, all happiness. "Now that Sir George has promised me I can sail on the Saxonia Friday—"

"You really must—" The envious eyes of Lady Crandall fell on the pile of plans—potent Delphic mysteries to charm the heart of woman—that lay scattered about upon the floor.

Jane sat back on her heels and surveyed the melting folds of satin with an artist's eye.

"If you only knew—what it means to me to get back with my baskets full of French beauties! Why, when I screwed up my courage two months ago to go to old Hildebrand and ask him to send me abroad as his buyer—I'd been studying drawing and French at nights for three years in preparation, you see—he roared like the dear old lion he is and said I was too young. But I cooed and pleaded, and at last he said I could come—on trial, and so—"

"He'll purr like a pussy-cat when you get back," Lady Crandall put in, with a pat on the brown head at her knees.

"Maybe. If I can slip into New York with my little baskets while all the other buyers are still over here, cabling tearfully for money to get home or asking their firms to send a warship to fetch them—why, I guess the penitent's mine all right."

The eternal feminine, so strong in Iowa's transplanted stock, prompted a mischievous question:

"Then you won't be leaving somebody behind when you sail—somebody who seemed awfully nice and—foreign and all that? All our American girls find the moonlight over on this side infectious. Witness me—a 'finishing trip' abroad after school days—and see where I've finished—on a Rock—" Lady Crandall bubbled laugh-

ter. A shrewd downward sweep of her eye was just in time to catch a flush mounting to Jane's cheeks.

"Well, a Mysterious Stranger has crossed my path," Jane admitted. "He was very nice, but mysterious."

"Oh!" A delighted gurgle from the older woman. "Tell me all about it—a secret for these ancient walls to hear."

Jane was about to reply when second thought checked her tongue. Before her flashed that strange meeting with Captain Woodhouse the night before—his denial of their former meeting, followed by his curious insistence on her keeping faith with him by not revealing the fact of their acquaintance. She had promised—why she had promised she could no more divine than the reason for his asking; but a promise it was that she would not betray his confidence. More than once since that minute in the reception room of the Hotel Splendide, Jane Gerson had reviewed the whole baffling circumstance in her mind and a growing resentment at this stranger's demand, as well as at her own compliance with it, was rising in her heart. Still, this Captain Woodhouse was "different," and—this Jane sensed without effort to analyze—the mystery which he threw about himself but served to set him apart from the common run of men. She evaded Lady Crandall's probing with a shrug of the shoulders.

"It's a secret which I myself do not know, Lady Crandall—and never will."

Back to the o'erweening lure of the gown the fitting fancy of the general's lady betook itself.

"You—don't think this is a shade too young for me, Miss Gerson?" Anxiety pleaded to be quashed.

"Nonsense!" Jane laughed.

"But I'm no chicken, my dear. If you would look me up in our family Bible back in Davenport you'd find—"

"People don't believe everything they read in the Bible any more," Jane assured her. "Your record and Jonah's would both be open to doubt."

"You're very comforting," Lady Crandall beamed. Her maid knocked and entered on the lady's crisp: "Come!"

"The general wishes to see you, Lady Crandall, in the library."

"Tell the general I'm in the midst of trying on—" Lady Crandall began, then thought better of her excuse. She dropped the shimmering gown from her shoulders and slipped into a kimono.

"Some stuffy plan for entertaining somebody or other, my dear"—this to Jane. "The real burden of being governor-general of the Rock falls on the general's wife. Just slip into your bonnet, and when I'm back we'll take that little stroll through the Alameda I've promised you for this morning." She clutched her kimono about her and whisked out of the room.

General Crandall, just rid of the dubious pleasure of Billy Capper's company was pacing the floor of the library office thoughtfully. He looked up with a smile at his wife's entrance.

"Helen, I want you to do something for me," he said.

"Certainly, dear." Lady Crandall was not an unpleasing picture of ripe beauty to look on, in the soft drape of her Japanese robe. Even in his worry, General Crandall found himself intrigued for the minute.

"There's a new chap in the signal service—just in from Egypt—name's Woodhouse. I wish you would invite him to tea, my dear."

"Of course; any day."

"This afternoon, if you please, Helen," the general followed.

His wife looked slightly puzzled. "This afternoon? But, George, dear, isn't that—aren't you—ah—rushing this young man to have him up to Government House so soon after his arrival?" She suddenly remembered something that caused her to reverse herself. "Besides, I've asked him to dinner—the dinner I'm to give the Americans tomorrow night before they sail."

General Crandall looked his surprise. "You didn't tell me that. I didn't know you had met him."

"Just happened to," Lady Crandall cut in hastily. "Met him at the Hotel Splendide last night when I brought Miss Gerson home with me."

"What was Woodhouse doing at the Splendide?" the general asked suspiciously.

"Why, spending the night, you foolish boy. Just off the Princess Mary, he was. I believe he did Miss Gerson some sort of a service—and I met him in that way—quite informally."

"Did Miss Gerson—a service—hum!"

"Oh, a trifling thing! It seemed she had only French money, and that cautious Almer fellow wouldn't accept it. Captain Woodhouse gave her English gold for it—to pay her bill. But why—"

"Has Miss Gerson seen him since?" General Crandall asked sharply.

"Why, George, dear, how could she? We haven't been up from the breakfast table an hour."

"Woodhouse was here less than an hour ago to pay his duty call and report," he explained. "I thought perhaps he might have met our guest somewhere in the garden as he was coming or going."

"He did send her some lovely roses," Lady Crandall brightened at this, to her, patent inception of a romance; she doted on romances. "They were in Miss Gerson's room before she was down to breakfast."

"Roses, eh? And they met informally at the Splendide only last night." Suspicion was weighing the general's words. "Isn't that a bit sudden? I say, do you think Miss Gerson and this Captain Woodhouse had met somewhere before last night?"

"I hardly think so—she on her first trip to the Continent and he coming from Egypt. But—"

"No matter. I want him here to tea this afternoon." The general dismissed the subject and turned to his desk. His lady's curiosity would not be so lightly turned away.

"All these questions—aren't they rather absurd? Is anything wrong?" She ran up to him and laid her hands on his shoulders.

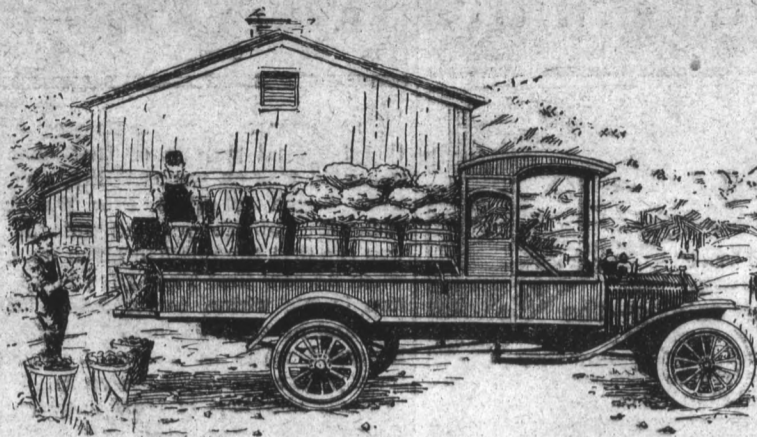
"Of course not, dear." He kissed her lightly on the brow. "Now run along and play with that new gown Miss Gerson gave you. I imagine that's the most important thing on the Rock today."

Lady Crandall gave her soldier-husband a peck on each cheek, and skipped back to her room. When he was alone again, General Crandall resumed his restless pacing. Resolution suddenly crystallized, and he stepped to the desk telephone. He called a number.

"That you, Bishop? General Crandall speaking. Bishop, you were here on the Rock seven years ago? Good. Pretty good memory for names and faces, eh? Right! I want you to come to Government House for tea at five this afternoon. But run over for a little talk with me some time earlier—an hour from now, say. Rather important. You'll be here. Thank you." (Continued next week.)

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The Grizzly King

By JAMES OLIVER CURWOOD

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For Muskwa to make his way over the thousand pitfalls of that chaotic upheaval was an impossibility, and as Thor began to climb over the first rocks the cub stopped and whined. It was the first time he had given up, and when he saw that Thor gave no attention to his whine, terror seized upon him and he cried for help as loudly as he could while he hunted frantically for a path up through the rocks.

Utterly oblivious of Muskwa's predicament, Thor continued until he was fully thirty yards away. Then he stopped, faced about deliberately, and stood waiting.

This gave Muskwa courage, and he scratched and clawed and even used his chin and teeth in his efforts to follow. It took him ten minutes to reach Thor, and he was completely winded. Then, all at once, his terror vanished. For Thor stood on a white, narrow path that was as solid as a floor.

The path was perhaps eighteen inches wide. It was unusual and mysterious-looking, and strangely out of place where it was. It looked as though an army of workmen had come along and with hammers had broken up tons of sandstone and slate, and then filled in between the boulders with rubble, making a smooth and narrow road that in places was ground to the fineness of powder and the hardness of cement. But instead of hammers, the hoofs of a hundred or perhaps a thousand generations of mountain sheep had made the trail. It was the sheep-path over the range. The first band of bighorns may have blazed the way before Columbus discovered America; surely it had taken a great many years for hoofs to make that smooth road among the rocks.

Thor used the path as one of his highways from valley to valley, and there were other creatures of the mountains who used it as well as he, and more frequently. As he stood waiting for Muskwa to get his wind they both heard an odd chuckling sound approaching them from above. Forty or fifty feet up the slide the path twisted and descended a little depression behind a huge boulder, and out from behind this boulder came a big porcupine.

There is a law throughout the north that a man shall not kill a porcupine. He is the "lost man's friend," for the wandering and starving prospector or hunter can nearly always find a porcupine, if nothing else; and a child can kill him. He is the humorist of the wilderness—the happiest, the best-natured, and altogether the mildest-mannered beast that ever drew breath. He talks and chatters and chuckles incessantly, and when he travels he walks like a huge animated pincushion; he is oblivious of everything about him as though asleep.

As this particular "porky" advanced upon Muskwa and Thor, he was commencing happily with himself, the chuckling notes he made sounding very much like a baby's cooing. He was enormously fat, and as he waddled slowly along his side and tail quills clicked on the stones. His eyes were on the path at his feet. He was deeply absorbed in nothing at all, and he was within five feet of Thor before he saw the grizzly. Then, in a wink, he humped himself into a ball. For a few seconds he scolded vociferously. After that he was as silent as a sphinx, his little red eyes watching the big bear.

Thor did not want to kill him, but the path was narrow, and he was ready to go on. He advanced a foot or two, and Porky turned his back toward Thor and made ready to deliver a swipe with his powerful tail. In that tail were

several hundred quills. As Thor had more than once come into contact with porcupine quills, he hesitated.

Muskwa was looking on curiously. He still had his lesson to learn, for the quill he had once picked up in his foot had been a loose quill. But since the porcupine seemed to puzzle Thor, the cub turned and made ready to go back along the slide if it became necessary. Thor advanced another foot, and with a sudden chuck, chuck, chuck—the most vicious sound he was capable of making—Porky advanced backward and his broad, thick tail whipped through the air with a force that would have driven quills a quarter of an inch into the butt of a tree. Having missed, he humped himself again, and Thor stepped out on the boulder and circled around him. There he waited for Muskwa.

Porky was immensely satisfied with his triumph. He unlimbered himself; his quills settled a bit; and he advanced toward Muskwa, at the same time resuming his good-natured chuckling. Instinctively the cub hugged the edge of the path, and in doing so slipped over the edge. By the time he had scrambled up again Porky was four or five feet beyond him and totally absorbed in his travel.

The adventure of the sheep-trail was not yet quite over, for scarcely had Porky maneuvered himself to safety when around the edge of the big boulder appeared a badger, hot on the fresh and luscious scent of his favorite dinner, a porcupine. This worthless outlaw of the mountains was three times as large as Muskwa, and every ounce of him was fighting muscle and bone and claw and sharp teeth. He had a white mark on his nose and forehead; his legs were short and thick; his tail was bushy, and the claws on his front feet were almost as long as a bear's. Thor greeted him with an immediate growl of warning, and the badger scooted back up the trail in fear of his life.

Meanwhile Porky lumbered slowly along in quest of new feeding-grounds, talking and singing to himself, forgetting entirely what had happened a minute or two before, and unconscious of the fact that Thor had saved him from a death as certain as though he had fallen over a thousand-foot precipice.

For nearly a mile Thor and Muskwa followed the Bighorn Highway before its winding course brought them at last to the very top of the range. They were fully three-quarters of a mile above the creek-bottom, and so narrow in places was the crest of the mountain along which the sheep-trail led that they could look down into both valleys.

To Muskwa it was all a greenish golden haze below him; the depths seemed illimitable; the forest along the stream was only a black streak, and the park-like clumps of balsams and cedars on the farther slopes looked like very small bosks of thorn or buffalo willow.

Up here the wind was blowing, too. It whipped him with a fire-keenness, and half a dozen times he felt the mysterious and very unpleasant chill of snow under his feet. Twice a great bird swooped near him. It was the biggest bird he had ever seen—an eagle. The second time it came so near that he heard the beat of it, and saw its great fierce head and lowering talons.

Thor whirled toward the eagle and growled. If Muskwa had been alone, the cub would have gone sailing off in those murderous talons. As it was, the third time the eagle circled it was down the slope from them. It was after other game. The scent of the

game came to Thor and Muskwa, and they stopped.

Perhaps a hundred yards below them was a shelving slide of soft shale, and on this shale, basking in the warm sun after their morning's feed lower down, was a band of sheep.

With his six-foot wings spread out like twin fans, the eagle continued to circle. He was as silent as a feather floating with the wind.

The eagle's fierce eyes were upon these youngsters. Suddenly he drifted farther away—a full rifle shot distance straight in the face of the wind; then he swung gracefully, and came back with the wind.

There was an instant commotion on the slide. The ewes began to run back and forth and bleat excitedly.

One of them saw Thor, and the deep grating bleat of warning that rattled out of his throat a hunter could have heard a mile away.

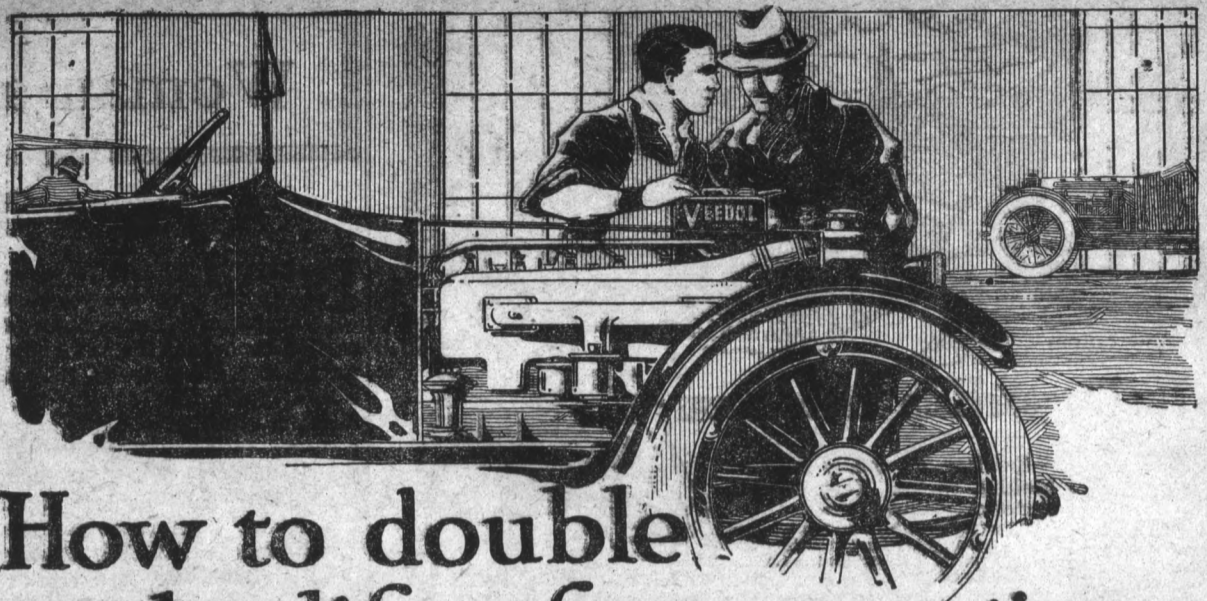
After a time the Bighorn Highway began to descend into the valley from the upper end of which Thor had been driven by Langdon's first shots.

Another hour of travel, and the bare shale and gray crags were above them again, and they were on the green slopes. After the rocks, and the cold winds, and the terrible glare he had seen in the eagle's eyes,

It was evident that Thor had something on his mind. He was not rambing now. He cut off the ends and the bulges of the slopes. With his head hunched low he traveled steadily northward, and a compass could not have marked out a straighter line for the lower waters of the Skeena.

(Continued next week).

An honorable defeat is better than a mean victory, and no one is really the worse for being beaten, unless he loses heart.—Lutbock.



How to double the life of your engine

THE life of your engine—whether in motor car, truck or tractor—depends on the lubrication it receives.

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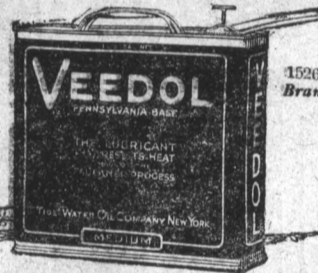
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Woman and Her Needs

A Poor Time to Weep

DON'T you despise a sniffling baby's mother. Therefore he must stand by her. So when I think of that ornery chap who took his wife's earnings to give himself pleasure, and begin to class all men as monsters, I think of this villager, and wonder what men are made of to put up with women. And so the score evens up.

Granted some men are villains and your husband is one of the deepest-dyed, you aren't going to cure him by crying about it. There are more effective methods. A friend of mine cured hers of sulking in a much pleasanter way. He used to sulk for a week at a time and refuse to sit at the table and eat with her. She, too, cried for a time. Then she woke up. At his next fit of sulks she packed a suitcase, went to a hotel for a week and sent him the bill. That was three years ago, and he hasn't sulked since.

We are told there's a time to weep. But it isn't when we've been having difference with friend husband.

DEBORAH.

UNITED STATES FOOD LEAFLET No. 2.

Frankly, my sympathy is always with the man in the case as soon as the woman begins to sniff. That settles it, no matter what he's done. If things aren't going right, whole oceans of briny tears won't help matters. It would be much more to the point to blow everybody up and set them right. Of course, men aren't perfect. But by the same token neither are women. And some women are enough to try the patience of Job, just as some men are enough to break a woman's heart. Human nature is human nature, whether it is clothed in the masculine or the feminine form.

There was dear old Mrs. B., who lived next to me one winter, and used to tell me how much I resembled her dear daughter who died of tuberculosis. She told me a simple happening of her early years, when she was married to her first husband and first love, who died and left her with four children. It was just before the fourth one came and they were living in a two-room house in Detroit. This was years ago, as you will know when I tell you that if she had \$75 she could have an additional room built on the cottage. No \$5.00 a day jobs then, and the price of lumber was some lower than now.

Well, the poor thing pinched and economized and scraped until she saved that \$75. Then she gave it to her husband and asked him to buy the lumber and engage the carpenters. And that mean rascal took the money and went and joined the Masons! He figured out that it was his money because he earned it, even if she had saved by going without downright necessities. I quite exploded when she told me, but she had gotten all over the early hurt and could laugh at it as a joke.

Every time I think of that I just bubble up inside and wonder what women are made of ever to endure men. And then I think of another case that happened, also in the good old days. A man in the little village where we lived had a very pretty wife. A doll-faced, empty-headed sort of woman, who loved pretty clothes and lots of attention and despised dishwashing and hoeing the garden. The husband was a plain sort of man, with no great mental attainments, and no ambitions beyond paying his just bills and providing a comfortable home for his wife and small daughter. The wife got tired of it all, and one day ran away with a traveling man. The husband stayed on and cared for the little girl as carefully as a man could.

Three years later the wife crept back, dying with tuberculosis. Now, this man had never heard of similar cases in real life or fiction. He wasn't even inspired by religion, but he took his wife back and hired a nurse and cared for her until she died. It was very simple to him what he should do. She had been his wife, and was his



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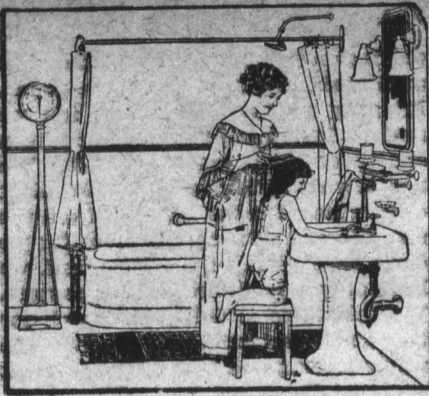
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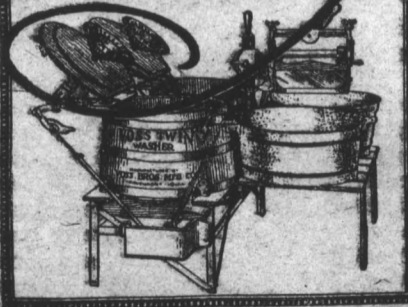
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for twenty-five minutes in a hot oven. Serve from the same dish with spoon. Enough for six.

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Corn Meal and Meat.—Corn meal is good combined with meats. Such a dish is a meal in itself. Try this one. **Tamale Pie.**—Two cup of corn meal, six cups of water, one tablespoon of fat, one onion, two cups of tomatoes, one pound of hamburger steak. Make a mush by stirring meal and one and a half teaspoons of salt into boiling water. Cook for forty-five minutes. Brown onion in fat, add hamburger and stir until red color disappears. Add salt and pepper to taste, and tomato. A sweet pepper is a satisfying addition. Grease baking dish, put in layer of mush, add seasoned meat, and cover with mush. Bake one-half hour. Serves six.

Corn helps us feed the world. Ours is the splendid burden of feeding the world. There is no magic way of making food win the war. It can be done in but one way—the way of voluntary and eager resolution and action of the whole people in every shop and every kitchen and at every table in the land.

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Desserts.—Corn meal and molasses cake, apple corn bread, dumplings, ginger bread, fruit gems.

Hearty Dishes.—Corn meal croquettes, corn meal fish balls, meat and meal dumplings, Italian polenta, tamales.

The recipes are in Farmers' Bulletin No. 565, "Corn meal as a Food, and Ways of Using it," free from the Department of Agriculture.

CORN MEAL—OUR ALLY. . .

HOME QUERIES.

Household Editor.—Can you tell me how to make either Chinese or American chop suey? Also how to prevent milk or cream from curdling in tomato soup?—Mrs. O. R. E.

I have no recipe for chop suey, either Chinese or American. It is a stew made up of whatever the particular chef decides to put in. The Chinese chop suey usually contains bamboo sprouts, very small green onion, a suggestion of celery, sometimes sprouted wheat, bits of chicken, principally giblets, and small cubes of salt pork. It is served with rice, boiled so that the kernels show up large and whole, and with small cups of clear tea. Perhaps some reader has a recipe. A quarter teaspoon of soda boiled with the tomato should prevent its curdling the milk.

Household Editor.—Please state the origin of the Red Cross society.—H. V. D. Marshall.

The Red Cross originated from the Geneva convention of 1864, an international meeting called for the purpose of improving the condition of soldiers wounded in the field.



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These Boys Made Money With Sheep

WE are two brothers, age eleven and fourteen; we have some sheep, and I am writing my experience about them.

Three years ago a neighbor of ours gave my brother a lamb, and that same summer my father bought me a lamb for \$5.20. The first year we had bad luck as they didn't raise lambs, but they sheared sixteen pounds of wool, which we sold for thirty-five cents a pound, which brought \$5.60.

The following year we raised pop corn to sell, and bought five sheep with the money. They cost \$43.50. We then had seven, but one died, leaving us six. The six raised us eleven lambs, one lamb died when about two months old, leaving us ten. We sold the wool at fifty-six and a half cents a pound, bringing us \$30. Early last fall we sold six lambs and two ewes at fifteen and seven cents, bringing \$98.40. We now have a little over \$130, also eight ewes which are the increase from the six. We cannot keep any more for we don't have room in the barn, and we have only a small orchard for pasture. We think this is doing quite well for two small farmer boys who had the whole feeding and care of them. Might add that these are Shropshire sheep. Am enclosing a picture of my brother Donald and I and our two pets, Nancy and Trixy, just after they were shorn.

—Kenneth and Donald Stuart.



The Keeping of Sheep is Not All Work.

When the Boy Goes to the Farm

By DEAN DAVENPORT

OUR country is now at war. It needs every ounce of energy of every man or boy. Not everybody can fight, but everybody can work and save. Our Allies are short of food and we must produce more and waste less if they are to be fed. The farmers are short of labor. They must have help if they are to increase production. What they need is skilled labor, and yet the right-minded boy, fifteen years of age or over, can make himself very useful, provided he trains himself for the purpose.

Whether he fights or whether he works, the same clear-cut object must be kept constantly in view, and the same iron discipline must be maintained. The boy on the farm must be his own disciplinarian and keep himself in training, not only physically, but in every way if he is to be an efficient aid in food production.

Objects.

When the city boy goes to the farm to help to feed the world, he must keep three distinct purposes in mind.

1. To serve his country by doing his bit in production and in preventing waste, whether of food or of animals, crops or machinery.
2. To serve the interests of his employer by caring for his property and working to the best advantage possible.
3. To gain experience to the end that he may be worth more every year both to the country and to himself.

These three objects should always be in mind and in the order named. This is duty and with the true soldier no task in the line of duty is too difficult.

This boy must also have a plan, and this plan must include definite methods of going about the new undertaking.

There is both art and a science in farming. The art means the "what" and the "how" of things and this comes first. The science means the "why" and that comes later with observation, reading and duty.

How the World's Business Is Transacted

By COMFORT A. TYLER

AND now as my visits with the boys and girls of the Michigan Farmer family are nearing a close, it comes to me with a sense of loss and lonesomeness. They were first entered into, under protest, because of my high personal regard for the editors who asked it, and have been furnished with the sacrifice of just so much time out of my recreation period, but do you know, they have come to be recreation of the very best kind, for it has brought me in touch again with those whom I loved dearly.

And I wish to take this occasion to thank the many friends from every part of the state who have written me expressing their appreciation of the articles. I may never get time to write each one of you personally and thank you for it, but it has certainly been an inspiration to me and unexpected pleasure, and has turned what was to be work into real play.

In all of these letters there comes but one discordant note, and I am really very glad of this for it comes from one of the best friends I have in the world, comes from far off northern Michigan, and becomes a text for a new theme. This good friend from Charlevoix county writes and says, "don't you think, Comfort, you are putting too much stress on purely financial success in the test of life's activities?"

Now, I am glad my friend asked this question, and in all seriousness I wish to answer, "No, I do not, as connected with a series of articles of this kind and character." The title, if you remember, is, "How the world's business is transacted," and let me remind you that to transact the "world's business"

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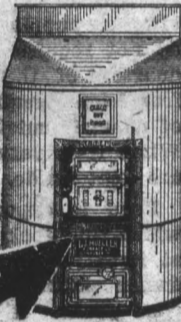
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Write for Catalog that tells all about them, with free folder about values of different feeds and manures. D. N. F. BOWSER CO. South Bend, Ind.



without financial success is a physical impossibility.

To every boy and every girl, every man and every woman, there will come a day when he or she will find opportunity knocking at the door and then the whole secret in business life, a successful business life, is to be able to hear the call and be ready to open the door when the "gentleman" knocks.

I am not much of a believer in so-called "luck" or "fortune." I think them poor substitutes for hustle and economy. Now it may not at all mean the amount you have saved, or any abnormal ability you may have that will determine how soon the "old man" opportunity may call upon you.

It is many times more likely that it is the tenacity of purpose you may have shown, the ability to do some things well, to stick to it until something better is before you, the habit of saving, the knowledge of business you have gained by doing things at the right time and in the right way that will some day open the door for you and at the same time the very persistence of this thrift habit, this saving propensity, that will make you more alert and your "hearing more acute" to catch the knock of the "old man" when he comes. You will see and hear "opportunity" when you are engaged in a day-to-day effort to gain knowledge and a competence with which to do business, that would never appear to you if you simply drift with the tide and be content with a mere subsistence during the hey-day of your opportune years.

No, my children, I do not think I have put too much stress on this phase of your young business career. Rather would I emphasize it the more, were I to amend, for I firmly believe that it is more through the habits formed in your early business life, that your greatest usefulness to the world depends, than upon any other one factor.

I want to be understood as meaning exactly what I say when I assert that I am truly sorry for that boy or girl who is so wealthy born, that he does not need to work unless he choose, and is not taught in his youth that he should work and become a producer of something worth while, no matter whether his own actual necessities of life require it or not. That kind of a boy or girl will grow up simply to encumber the earth, or become a positive menace to mankind at large.

While it is true that many of the sons and daughters of immensely rich men have really become useful and valuable citizens, it also remains a fact that necessity in early life will go further in stimulating effort, than any and all other factors. For this reason if for no other I welcome necessity.

Every boy and every girl, every man and every woman must eventually get into one of two great classes. They must get into that class of producers, that class who by their efforts really add something to the world's riches, the world's goodness, the world's knowledge, the world's greatness, the world's clean, honest enjoyment, or they must get into that other great class who are content simply to lop up against some other man's efforts, or become a trader in the product of some other man's genius.

In the game of life there are many very useful citizens who are not, and never will be, money makers. All well and good, they may be engaged in some equally valuable work, something just as useful as making and saving money, but in these articles we are talking about "how the world's business is transacted," (some of the time), and to transact the world's business requires thrift, energy, savings, knowledge of the business one is to transact, money, confidence and credit. These factors you must have and as the boys and girls of today are to be the business men and women of tomorrow, I want them to begin right and keep right.



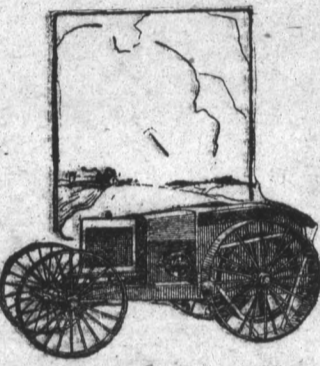
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Costs no more to sow with this drill than with any other. It means bigger crops and, therefore, more money without any additional labor.

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Baby Chicks from Standard Bred S. C. White and Brown Leghorns. Good laying stock. \$13 per 100. Safe arrival guaranteed. Catalogue free. Book your order now for spring delivery.
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Baby Chicks. Bred-to-lay S. C. White and Brown Leghorns at last year's price, \$12 per 100. No catalog or circular. Order direct from this ad. Cash in full with order. Hatch every Tuesday, beginning April 2. Sunnybrook Poultry Farms, C. G. Burroughs, Prop., Hillsdale, Mich.

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Buff Leghorn Cockerels, and a few pens.
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Buff Orpingtons—Seventeen years. Best exhibition egg producing strain. Eggs or Baby Chicks. Circular free. **WILL SCHATZ**, Goshen, Indiana.

Chicks. We ship thousands, booking orders now for spring delivery. Free booklet.
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Cockerels—From Chicago Coliseum winning stock. \$3 & up. "Ringlet" & Buff Rocks, both combs Red, Spanish Orpingtons, Wyandottes. Tyrone Poultry Farm, Fenton, Mich.

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of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar, Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.
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 A real heavy laying strain, trapped 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock, tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free.
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Chicks that Live \$15 per 100 S. C. W. Leghorns MY SPECIALTY. Send for catalog. **SNOWFLAKE POULTRY FARM**, R. 1, Grand Rapids, Mich.

Fowlers Buff Rocks Cockerels Pullets and hens for sale from two dollars up according to quality.
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IMPROVE YOUR POULTRY
 My Young's strain bred-to-lay S. C. White Leghorns are great money makers. 100,000 baby chicks for 1918 delivery at \$13 and up per 100. Satisfaction guaranteed. Write for free catalogue.
W. VAN APPELDORN, R. 7, Holland, Mich.

John's Big beautiful hen hatched Barred Rocks good layers males & females \$3 to \$5 each. Breeding pens \$12. Sold on approval circulars photos. John Northon, Clare, Mich.

Pine Crest White Orpingtons, hens and pullets \$3.00 \$12 per 100. Eggs special price \$5 per 15. Utility \$12 per 100. **MRS. WILLIS HOUGH**, PINE CREST FARM, Royal Oak, Mich.

RHODE ISLAND REDS and plymouth Rocks Males R. 5 to 12 lbs, according to age \$2 to \$5; P. R. hens weight 6 to 10 lbs, eggs \$1.10, \$1.20, \$1.30. Mammoth Bronze Tom Turkeys 8 to \$8 lbs, according to age \$6 to \$25, 10 eggs \$3. **J. Morris & J. Barsan**, Vassar, Mich.

R. I. REDS, both combs. Chicks & eggs. Most popular strain in Michigan. Write for catalog.
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Rose Comb Rhode Island Red cockerels, rich red surface, even under color. Eggs in season.
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For Sale S. C. White Leghorns—year old hens. Pullets, Cockerels, Ferris strain \$1.50 each. **Russell Poultry Ranch**, Petersburg, Mich.

Additional Poultry Ads on Page 267

Biggest Hatches Strongest Chicks

That's what you will get with my Hatching Outfit—and I can prove it. The whole story is in my big catalog, "Hatching Facts", sent Free. It tells how money is made raising poultry. Get this Book and you'll want to start one of my Guaranteed Hatching Outfits making money for you. It's good patriotism and good business to raise poultry this year, and

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Prize Winning Model—Double Fibre Board Case, Hot-Water, Copper Tank, Nursery, Self-Regulated Safety Lamp, Thermometer Holder, Egg Tester, With \$5.25 Hot-Water, Double-Walled, 140-Chick Brooder, both only \$12.95

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POULTRY and eggs are going to be the big money-makers this year. Hoover is beseeching little and big poultry raisers to double—triple—quadruple their products. We should raise twice as much poultry and eggs as we did last year. And prices will remain high—and go higher. The demand will take care of that. Why, New York City alone consumed annually One-Half Billion More Eggs than the greatest egg-producing state in America yielded last year! Get wise. Get hatches started quick! Plan for bigger hatches of better chicks. Get a hatch-increasing wonder—a

1918 X-Ray Incubator

Combines 20 Exclusive X-Ray Features. Completely hatches on only one filling oil during entire hatch. Duplex Central Heating Plant—directly underneath, gives natural, moist mother heat. X-Ray Automatic Trip regulates flame—no chilled eggs—no overheated sides. Read all about its 20 remarkable hatch-increasing, labor, time and money-saving features—and remember, it is shipped

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Both Machines \$12 Freight Only Paid

30 DAYS FREE TRIAL

10 Year Guarantee Think of it! These two **UNBEATABLE Wisconsin Machines**—both for only \$12.00—freight paid east of Rockies. Don't take chances. Find out what an incubator is made of before buying. Catalog and sample of material used sent free.

MONEY BACK IF NOT SATISFIED

Wisconsin are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. **Biggest incubator bargain of the year.** Send for our new 1918 catalog fully describing this outfit. A postal brings it by return mail.
180-Egg Incubator and Brooder both \$14.75
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Big Book FREE Get it quick—express prepaid—Mankato Special with six great improvements: Large oil tank, new automatic regulator, new heating system, new ventilating system, wonderful results. Write for book. **Mankato Incubator Co.** Box 717 Mankato, Minn. Write Today

"LEE'S POULTRY BOOK" "CARE OF BABY CHICKS" "ALL ABOUT EGGS" "SECRETS OF SUCCESS WITH CHICKENS" Books "POINTERS FOR SUMMER & FALL" This Lee Poultry Library of five booklets for 50¢ stamps to cover mailing. Send at once to **GEO. H. LEE CO.**, 265 Lee Building, Omaha, Neb.

Renovating the Incubator

By R. G. KIRBY

THE old incubator must be placed in the best possible condition to avoid unnecessary losses this spring. Eggs will undoubtedly be high and the loss of a hatch through a faulty machine will be more expensive than ever before. The thermometer that has been used several years may begin to vary and it should be tested by comparison with a tested instrument. If it proves inaccurate it is often better to buy a thermometer rather than experiment with the old one and make an allowance for the error. It always pays to remember that it is the heat in the egg chamber that counts in developing the chick and not what the thermometer may say. Running the machine with an instrument that is one or two degrees wrong may ruin the hatch and this is always very discouraging to the operator who has given the eggs the most careful attention in every other particular.

Clean Incubator Thoroughly.

A thorough cleansing of the egg trays and the chamber should be in order when the machine is stored in the fall and it must be repeated in the spring. The disinfectants advertised for that purpose are inexpensive and very satisfactory for that purpose. One of the main causes of diseased chicks is often the fact that they are hatched out in an unclean incubator.

Hot water incubators may spring a leak, especially if they have been stored in a cold room without being thoroughly emptied and the water has frozen. Fill the water pipes and watch for leaks at least a week or more before the eggs are to be placed in the machine. If any leaks are found they can then be repaired without serious loss, but if the machine begins leaking after the germ has started to develop in the eggs it may mean a ruined hatch and a severe handicap in the poultry raising for the season.

Lamps Require Cleaning.

The lamp that heats an incubator requires thorough cleaning as the long period over which it must burn steadily makes efficiency more important than is the case with the ordinary reading lamp which is only used a few hours each evening. When the incubator lamp is first received you will note that it is equipped with the right kind of a wick for furnishing the right kind of heat. The wick should be changed for every hatch, as wicks are not expensive and a clean one seems to give a better flame. When ordering new wicks it pays to obtain them from the manufacturer of the incubator or else be sure that the wicks purchased from the groceryman or hardware merchant are the same size and thickness as formerly used in the machine.

Boil the Burner.

Boiling the old burner in a solution of baking soda will loosen up the dirt and place it in condition to work readily at the slightest pressure in turning up the wick. A burner that becomes worn out should be replaced with a new one, as it will pay better than trying to use one that is half broken and hard to regulate. An examination of the thermostat will tell whether it is in good condition or has been bent or otherwise injured by carelessness while placing the machine in storage.

It pays to keep a "parts repair list" of each incubator used, in a convenient place for reference. No list that we have seen seems to quote repairs at exorbitant prices above what the materials can be obtained at a local store and when the parts are ordered from the manufacturer they are made for the particular machine and give satisfaction.

The renovation of an incubator is a good winter job as there may be little

time for that work in the spring when the hatching should begin promptly to insure a good supply of early chicks.

MAKING THE HENS PAY IN WINTER.

Not everybody understands how to feed and care for a flock of hens so as to get eggs in winter. A woman who is succeeding admirably in this respect the present season gives the following suggestions: First, do not expect eggs in winter unless the hens are young. Old fowls are too fat to lay well. Best results are obtained with pullets. Next, do not crowd too many hens in one flock. About twenty to twenty-five will do better than a larger number. If old and young of both sexes comprise the flock it will be advisable to keep the young hens and pullets by themselves. Provide water with the chill off in cold weather. Hot bricks under the container changed twice or three times during the day will do this. If kept clean there is no objection to heating these bricks in the house. Charcoal, crushed oyster shell and grit are kept where they are accessible at all times, and meat scrap forms a portion of the ration every day. The first meal is fed as soon as it is daylight. This is a warm mash slightly moist, composed of bran, ground oats and a little corn meal fed in troughs. At this time a basket of clover chaff is emptied in the scratching shed. There is no noon meal but about four o'clock a liberal feed of corn is given. This corn is kept in the house, precious as it is this year, and so is never icy cold.

Relishes for the Chickens.

The fowls work in the clover chaff a good deal of the time through the day. They eat it with relish. Alfalfa chaff is even better. Milk would be a fine addition to the ration but this flock does not get it. Often fresh vegetables like cabbage or beets, are placed where the fowls can eat them, but no condiments or patent foods of any kind are supplied. Healthy young hens do not require them. Of course, the quarters of the flock are warm and free from vermin. They have the run of a small outside yard on fine days. When it is very cold or stormy they are kept inside.

Feed is expensive, yet the eggs which this flock are laying sell readily at forty-five cents per dozen and the owner claims the hens are paying a good profit. All the feed except the corn and the chaff is purchased outright. The chaff plays an important part as it keeps the fowls busy, besides supplying the necessary material for egg making. The moment it is placed before them they begin to scratch in it and instead of moping they are working and singing.

Young hens, warm quarters, proper feeding, and good care, will make a profit—even in war times.—E. E. R.

MOLDY SILAGE.

(Continued from page 254).

fault of filling the silo with too dry material, but another year if the corn stalks are a little too dry, water should be run into the silo along with the cut-up stalks.

A satisfactory practice where the silo is filled by the blower, is to run in a small hose, leading from a tank, so that it deals the water into the blower along with the chopped-up material, so that it goes in together.

The only thing that can be done now is to avoid the specially moldy parts of the silage, particularly those that show red or purple color.

ERNST A. BESSEY, Prof. of Botany, M. A. C.

These Seven Cows

Kept for One Year on the Product of One Acre at the Total Cost for Seed of Less than \$2.00

This is hardly believable. Keeping seven cows for a whole year on the product of one acre goes a long way in reducing the cost of milk. On one acre of land in the State of Michigan, Ross' Eureka Ensilage Corn produced in one year, 70 tons and 800 lbs. of the best quality of sweet ensilage. Figuring at the rate of 50 lbs. per day, this would be sufficient to feed seven cows for one year with enough left over for 261 feeds. That acre won our \$50.00 in gold for the heaviest yield.

Every bag of Ross' Eureka Corn bears our trade mark: a man holding a stalk of corn. Don't buy seed corn of any dealer simply because he calls it Eureka corn. There are several varieties that are being sold under the name of Eureka which are not Ross' Eureka, and therefore not the genuine product which

We believe that this record can be broken, and for that reason we offer \$100.00 in gold to the first person breaking this record, using Ross' Eureka Ensilage Corn.

holds the above record. We have adopted the distinctive trade mark for your protection.

If you plant cheap corn you must expect to reap accordingly. We have been selling our corn for nearly 30 years, and we know before we ship that it will grow if given a fair chance. Some of our customers have said that it will grow if planted in a mud puddle! Our seed for 1918 will germinate as near 100% as possible.

This is the year you want to look out for Western Dent varieties. Growers report that the extreme cold weather in December has practically ruined the entire crop for seed purposes and that only 30% to 60% will germinate. You cannot afford to take chances with that kind of seed. Our Eureka Corn is well matured, and is sure to produce a bumper crop. Eureka Corn will cost you no more than inferior kinds. Why take the chance?

Ross' Eureka Corn

IS AS GOOD AS AN INSURANCE POLICY TO THE FARMER. It grows where other kinds fail, and the yield is tremendous. We have been told by our customers that some stalks have measured as high as 22 feet. The average is 14 to 17 feet.

IF YOU WANT CORN FOR GRAIN (and you should never try to grow forage and grain in the same field), plant the Sheffield Flint Corn, introduced by us in 1911 under the name of Sheffield World Prize Flint Corn. This corn won the first prize for heaviest yield per acre at the first New England Show held in Worcester, in 1910. The yield was 123.8 bushels of crib dry corn from one acre of land. This is a safe variety to plant where early frosts are expected, or in localities where the season is short.

In order to encourage the production of more and better corn for

our Allies as well as ourselves, WE OFFER THIS YEAR \$25.00 AS THE FIRST PRIZE, \$10.00 AS THE SECOND PRIZE, and \$5.00 AS THE THIRD PRIZE, for the best trace of 25 ears of Sheffield Corn. Further particulars in regard to it will be found in our 1918 catalogue.

These—Ross' Eureka Corn and Sheffield Flint Corn—are only two of our specialties. We handle a complete line of Farm Seeds, such as Oats, Rye, Barley, Wheat, Buckwheat, Cow Peas, Vetch, Soy Beans, Field Peas, Essex Rape, and all varieties of Field and Ensilage Corn, also Grass Seeds and Worcester Timothy 99.50% pure. We can furnish Alfalfa, both Grim and Northwestern Grown, Sudan Grass and other forage crops.

Our 120 page catalogue will be mailed free if you mention this paper. Seventy-two pages of this book are devoted to descriptions and prices of seeds, and the balance to Agricultural Implements, Fertilizers, etc. Send postal today. Address



TRADE MARK REGISTERED

ROSS BROTHERS COMPANY

37 Front Street, Worcester, Mass.



POULTRY

SILVER Golden and White Wyandottes, Choice breeding stock of sale after Oct. 1st, a few bargains in yearling hens. C. W. Browning, R. 2, Portland Mich.

WHITE Wyandottes. I have a fine lot of April and May hatching cockerels for \$3.00 and \$5.00 each. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

White Wyandotte cockerels, good size, color. \$3.50; 3 for \$10. Hog Swedish Select Oats free from smut \$1.50 per bu. in 10 bu. lots released and bags free. VAN O. FARM, R. 1, Box 124, Hartford, Mich.

White Wyandottes Eggs from heavy laying, extra choice breeding stock \$3.50 per 15. Milton E. Stewart, R. 3, Augusta, Mich.

M. B. Turkeys, Toulouse Geese and S. C. W. Lagers, Lagers cockerels. Also Berkshire, both sex. Stamps appreciated. Chase Stock Farm, R. 1, Marietta, Mich.

MAMMOTH White Holland Turkeys, Toms \$3. Hens \$2.50. Pairs \$12. Trios \$17. Stamped envelope for reply ALDEN WHITCOMB, Byron Center, Mich.

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

We Offer a Few Special Bargains in S. C. White Leghorn cockerels, Rambouillet rams, Hampshire pigs (either sex) and Holstein bulls. A good chance for a small investment to reap the benefit of a large expenditure of capital and years of expert breeding. Flanders Farm, Orchard Lake, Mich.

CATTLE.

WOODCOTE ANGUS

Trojan-Escios and Blackbirds only Breeders of the dam and former owners of the sire (our herd bull) of the Grand Champion Bull at the International Chicago for 1917. WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus Good quality bulls of serviceable age and younger. Inspection invited. Geo. Hathaway and Son, Ovid, Mich.

GUERNSEYS must reduce herd, so offer Glenwood breeding also bulls, all stock of A. E. breeding, herd tuberculosis tested. T. V. HICKS, Battle Creek, Mich.

Guernseys For Sale, four young registered cows. Tuberculosis tested. Geo. N. Crawford, Holton, Mich.

Guernseys 15 Registered head, all 4th tested. Nora's May King, son of Imp. May Rose King, heads our herd. 30 of his half sisters sold averaging \$350 each. His bull calves are booked ahead at reasonable prices. Avondale Stock Farm, Wayne, Mich.

Registered Guernseys

3 choice Heifer calves, \$150 each. 1 choice 3 year old will freshen in March \$300. J. M. WILLIAMS, North Adams Mich.

The Worlds Record For Grade Cows Held By a Guernsey Grade

A grade Guernsey produced in one year: 16,286 lbs. of milk and 344 lbs. of butter fat, equivalent to 1,000 lbs. of butter. For a 5 year period she produced 57,450 lbs. of milk and 3,020 lbs. butter fat. This is an average for 5 consecutive years of 11,490 lbs. milk and 604 lbs. of butter—the world's record for a grade cow.

Write for our profit-suggesting book "The Grade Guernsey."



American Guernsey Cattle Club Box 1 Peterboro, N. H. (7)

GUERNSEYS REGISTERED BULL CALVES

Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S., Mich.

For Sale Registered Guernsey bull calves May Rose breeding. JOHN EBEL, R. 2, Holland, Mich.

For Sale Guernsey bull calves from advanced registered dams ranging in age from 3 to 8 months. L. J. BYERS, Coldwater, Mich.

CLUNY STOCK FARM

100—REGISTERED HOLSTEINS—100 When you need a herd sire, remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding. Write us your wants. R. BRUCE McPHERSON, Howell, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write. GEO. D. CLARKE, Vassar, Mich.

Parham's Pedigree Stock Farm offers Reg. Holstein cattle, Chester White Swine, extra bargains in calves and fall pigs. Bulls half price. R. B. PARHAM, Bronson, Mich.

A Few Fine Bulls For Sale

Biglows Holstein Farms, Breedsville, Mich.

I Always Have Holsteins To Sell

If wanting Registered cattle write me your wants before placing your order elsewhere. L. E. CONNELL, Fayette, Ohio

WINWOOD HERD REGISTERED HOLSTEINS

Holton, Mich. Reference: Old State Bank, Fremont, Mich.

Flint Maplecrest Boy sire in service. His sire is Maplecrest Komdyke Hengerveld, his 3 Nearest Dams each over 30 lbs. of butter in 7 days. His dam and grand dam both made over 122 lbs. of butter in 1 year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vasser Bell, 30.57 lbs. of butter in 7 days and 120 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have Bull Calves from 2 weeks to 8 months old for sale at dairy farmers' prices all out of A. R. O. Heifers. Write & tell us the kind of a bull you want. John H. Winn, (Inc.), Holton, Mich.

Reg. Holsteins: Bull calf born Oct. 8. A splendid individual, well grown. A. R. O. records for seven nearest dams average butter 7 days 23.36 lbs. milk 53.27. Dams record 15 lbs. sr. 2 yr. old. W. B. Reader, Howell, Mich.

FOR Sale One registered Holstein bull calf. Sire's twenty nearest dams have 7. da. records av. 25.58 lb. butter. Dam to be tested. A finely marked, growthy individual. Long Vein Farm, R. 3, Box 10 A, Rochester, Mich.

CHOICE Holstein bulls nearly old enough for 2 service. No. 1 born January 24, 1917, sire's dam, grand-dam and great grand-dam's semi-official records average 84 lbs. butter. Dam of calf 38 lbs. butter 7 days as senior 2yr. old, average per cent fat 4.3. No. 2 Sired by 23 lb. bull and out of a 14 lb. junior 2-yr. old. L. B. BROY, Owner, Fort Huron, Mich. Chas. Peters, Herdsman, Three Rivers, Mich.

When you think of good Holsteins, think of **E. M. PIERCE & SON,** Manchester, Mich.

We have a few good females and several bull calves at right prices. The latter from \$50 up. Excellent breeding.

"TOP - NOTCH" HOLSTEINS

"Milk production is an inherited ability. Good cows must be bred to good pure-bred bulls if progress in dairying is to be made." Extract U. S. Dept. of Agric. Bulletin.

Buy this young bull and give your milk and butter production a push. King Colantha De Oakdale, No. 162387, Born Nov. 4, 1915. His sire's 3 nearest Dams average } Milk 7 days 30.87 } Butter 7 days 579.66 } His Dam's Dam's } Milk 7 days 30.59 } Butter 7 days 565.00 } Record } Milk 30 days 124.19 } Butter 30 days 2436.60 } (She heads one of the ten only combinations of three direct generations of thirty pound cows.) His dam's record at 3 yrs. } Butter 7 days 23.33 } Milk 7 days 429.40 } His five nearest dams average } Milk 7 days 29.30 } Butter 7 days 546.63 } (Including 2-3 and 1-4 1/2 yr. old.) Locally marked, about half and half. Price \$250. McPherson Farms Co., Howell, Mich.

3-HOLSTEIN BULLS-3

Ready for service at Long Beach Farm, Augusta, Mich.

PUREBRED HOLSTEINS

PRODUCE-- FOR LESS COST THAN ANY OTHER BREED

More Milk and More Butterfat

These are facts that are a matter of record. Write for the facts about purebred Holsteins.—the most profitable breed. Free. No obligation—we have nothing to sell.

THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 164, Brattleboro, Vt.

OAK Leaf Farm. Hard sire Lenawee Pontiac Calumity King offer Registered Holstein bull calves from A. R. O. cows and the above sire whose dam holds the milk and butter record in the state of Ind. 7 days milk 76.2, butter 32.51—35 days milk 2578.23, butter 926.775. E. H. GEARHART & SON, R. 4, Marcellus, Mich.

For Sale Registered Holstein bulls ready for service and bull calves from 30 lb. sire and A. R. O. dams with records up to 25 lbs. Wm. GRIFFIN, R. 5, Howell, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also colts puppies. E. A. HARDY, Rochester, Mich.

Why Use inferior bulls when you can buy grandsons to 15000 pounds of milk last year for from \$75 to \$150. One ready for service. Write for pedigrees stating about what you wish to pay. SINDLINGER BROTHERS, Lake Odessa, Mich.

\$225 takes your choice of heifers of a 30 lb bull due in May to a 23 lb. son of Johann Korn, D.K. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

Holstein cow 5 yr. old, due to freshen in Apr. has had 5 heifer calves, is backed by good A. R. O. records, and is right in every way. A. F. LOMIS, Owosso, Mich.

HOLSTEIN bull calves, eligible to registration, without papers, \$25 at 10 days of age, registered, \$50 to \$75. Dewey C. Pierson, Hadley, Mich.

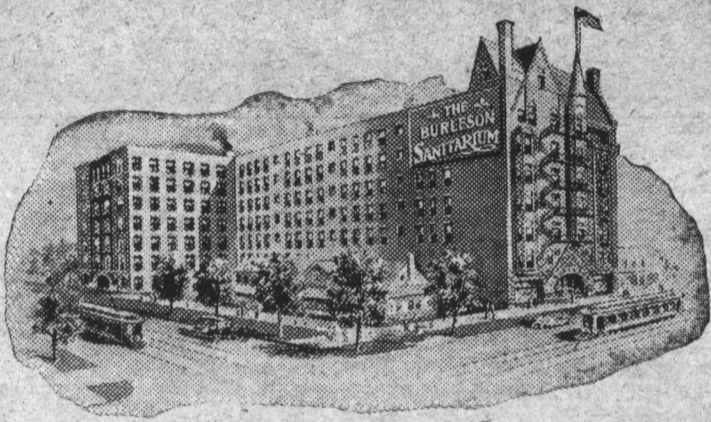
HEREFORDS

10 bull calves for sale, Perfection Fairfax and Prince Donald breeding. **ALLEN BROS., PAW PAW, MICH.**

Herefords Bob Fairfax 494027 at head of herd. Stock for sale. Both sexes either polled or horned. EARL C. McCARTY, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.

Additional Stock Ads. on Page 269

Piles Cured Without the Knife



The Largest Institution In the World for the Treatment of Piles, Fistula and all Other Diseases of the Rectum (Except Cancer)

WE CURE PILES, FISTULA and all other DISEASES of the RECTUM (except cancer) by an original PAINLESS DISSOLVENT METHOD of our own WITHOUT CHLOROFORM OR KNIFE and with NO DANGER WHATSOEVER TO THE PATIENT. Our treatment has been so successful that we have built up the LARGEST PRACTICE IN THE WORLD in this line. Our treatment is NO EXPERIMENT but is the MOST SUCCESSFUL METHOD EVER DISCOVERED FOR THE TREATMENT OF DISEASES OF THE RECTUM. We have cured many cases where the knife failed and many desperate cases that had been given up to die. WE GUARANTEE A CURE IN EVERY CASE WE ACCEPT OR MAKE NO CHARGE FOR OUR SERVICES. We have cured thousands and thousands from all parts of the United States and Canada. We are receiving letters every day from the grateful people whom we have cured telling us how thankful they are for the wonderful relief. We have printed a book explaining our treatment and containing several hundred of these letters to show what those who have been cured by us think of our treatment. We would like to have you write us for this book as we know it will interest you and may be the means of RELIEVING YOUR AFFLICTION also. You may find the names of many of your friends in this book.

We are not extensive advertisers as we depend almost wholly upon the gratitude of the thousands whom we have cured for our advertising. You may never see our ad again so you better write for our book today before you lose our address.

Drs. Burleson & Burleson

804 The Burleson Bldg.

Grand Rapids, Michigan

Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada—Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before the crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Production last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918, is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5 th. Wages to competent help, \$50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board, and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service,
Dept. of Labor.

A Profitable Side Line

Contract makers for canneries, sugar and pickle factories, insurance men or anyone who does daily business with farmers—here is a proposition you want to get next to. Good profit and annual business, easy seller.

Product long and well established in Michigan. Your farmer friends ought to have it—you can sell it to them.

For particulars regarding this extra money proposition write

Box W 51, Michigan Farmer, Detroit, Mich.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

SOME NEW GRANGE FEATURES.

(Continued from last week.)

In these times "that try men's souls" the people who live in different environments must understand each other. Great get together movements, such as we hope this one will prove to be, furnish the best opportunity for mutual understanding.

We had nearly forgotten to say that at these meetings, the men will not do all the talking. There will be a lady speaker at each institute, and it is hoped to make this a most helpful feature of the programs.

So much for the preparations made by those having this matter in charge. One thing remains to make our plans complete—we must have the cooperation of every Grange in the state. The big thing, after all, is the advertising. Without that our work will be largely for nothing. We simply can not make this thing go unless we have the people with us at our meetings, and they will not come unless they have knowledge of the meetings long enough ahead to make the necessary preparations.

The matter of advertising must be left to the people of the several counties where the meetings are to be held. Information regarding dates of meetings will be promptly furnished to the several counties. Dates will be arranged as nearly as possible in accordance with the wishes of the several localities, but in order to lose no time, and to do the largest amount of work at the least expense in money, it will be necessary for contiguous counties to hold their meetings on consecutive days in most cases.

If every county agent gets busy, and if every active member of each Grange does his part to advertise these meetings, using the local papers, the telephone, not forgetting to talk of the coming meeting to his neighbors whenever opportunity offers, if local arrangements are well looked after—if the room is warm on time in the morning, if the meeting calls on time, if the Grange knows what it wants to get out of the institute and goes after it, providing the speakers are missing the mark, these meetings will be improvements upon the old-fashioned institute, they will be an inspiration and a material help in every community, and the Grange will add another chapter to the big book in which its history is written.

Patrons, one and all, let us make this plan work.

W. F. TAYLOR.

GRANGE LOYALTY.

The Grange has long contended for a League of Nations to enforce world peace, and its declarations on this subject one year ago were especially emphatic. By the unforeseen shaping of events we are rapidly approaching the very realization of such an actual league, as nation after nation is arraying itself with the cause of humanity, in a common defense against German aggression and destruction.

Clearly we now witness the supreme struggle of the race—the world's best arrayed against the world's worst. Can there be any doubt of the outcome of such a struggle, and can we hesitate for a moment to throw the full weight of our great organized power into such a cause? Out of such a struggle, grown to its present dimensions, must come the end that peace-loving men have long and fervently hoped and prayed for—the overthrow of war worship, the destruction of the Gods of Militarism, of force and of mere physical strength, and the exaltation of that code of international morale that shall spell the ultimate peace and progress of a world.—Oliver Wilson, Master National Grange.

Farmers' Clubs

CLUB DISCUSSIONS.

Equal Taxation was the subject for discussion at the Essex Farmers' Club of Clinton county. This very practical subject was presented by C. A. Matthews, who showed that much inequality and, therefore, injustice, from present methods of assessing property, exists. Instances were given where property was assessed at more than its cash value. He thinks that property valuation is placed too high and should be lowered to fifteen or twenty per cent less than true cash valuation. A general discussion of the subject followed, bringing out many suggestions of a helpful nature. The exempting from taxation of household goods only, and the using of the primary money to pay state taxes, was advocated, whereby, in the latter case, many unnecessary offices would be abolished and much expense saved. The report of Mrs. J. T. Daniells, as delegate to the meeting of the State Association of Farmers' Clubs, held in the Senate Chamber at Lansing, on December 4-5, was read and accepted and a vote of thanks accorded the delegate, expressive of the Club's appreciation of the completeness of the report. Roll call, with responses of "What Special Cause have I for Thankfulness?" brought out many expressed reasons for gratitude, much prominence being made of the fact that we live in this "Land of the Free," where right and justice are upheld, and where Autocracy must never be permitted to prevail. The next number was the reading of a selection by J. T. Daniells—so pathetically expressed by S. Walter Toss in his verses, "Let me live in a house by the side of the road and be a friend to man." Following a brief recess Austin E. Cowles, retiring president, spoke earnestly regarding the conditions in which our nation stands, in relation to the terrible world war now raging in Europe. He deprecated the fact that there are "slackers" among our people and some who even dare to express disloyal sentiments, and he urged most earnestly, that disloyalty be not tolerated. He thanked the members for their aid and good will, shown during the two years in which he had served as their president, and in return he was given a rising vote of thanks for his faithful services. The treasurer's report showed all claims paid and money in the treasury. The Club decided on a plain restricted bill of fare at its dinners, while the present war lasts, thereby setting an example in this matter for others to follow and so comply with the present earnest call for the conservation of food.—J. T. Daniells, Cor. Sec.

Heavy vs. Light Horses.—The Wells-Dayton Farmers' Club was entertained at the pleasant home of Mr. and Mrs. Charles Riley on February 6. On account of the condition the roads were in the attendance was small. After a bounteous dinner was served under the direction of Mrs. James Weeden, a social hour was enjoyed. The meeting was then called to order by the president, the Club singing "The Battle Hymn of the Republic." Mr. Janks then gave a reading on what constitutes good seed corn, on which there was a general discussion. Mrs. T. Tait then played the Repaz Band March, which was greatly enjoyed by all. Mrs. Riley sang "Somewhere in France is Daddy," which was very appropriate as there are so many of our boys being called to the battle field. The debate by Mr. Tait and Mr. Weeden on three light horses or two heavy ones being the best for the average farmer, was very interesting for all, the two heavy horses winning. Those present were then each given a pencil and piece of paper on which to draw a cow, which afforded a great deal of amusement, the judges deciding that Tilden Tait was the champion artist of the day. The Club then sang "The Old Oaken Bucket." The question box proved very interesting. The meeting closed by singing "America," and will meet with Mr. and Mrs. Fred Janks in March.—Della Hunt, Cor. Sec.

The Annual Banquet of the Marion Farmers' Club was held at the Pleasant home of D. O. Smith. At one o'clock a bountiful chicken-pie dinner was served by the ladies of the Club. An address by Rev. Joseph Dutton was greatly appreciated by all present. "Patriotism," by Clarence Elsworth, was indeed a stirring and masterly effort, which should be heard to be fully appreciated. The report of the delegate, Melvin C. Hart, of the Convention of Farmers' Clubs held in Lansing on December 4-6 was the last on the program. He gave a very clear and concise report of the meeting.

Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

H. C. H., Birmingham, Mich.—The writer knows of no law to prevent a dairyman from mixing the milk of a fresh cow with the milk of other cows and selling it to the trade. But, instead of it having a constipating effect, it has the opposite, and the milk drawn from a cow that has been un-milked for a few days is not necessarily poisonous. Feeding cows sulphur will not kill lice on their bodies. Is it not true that too many child ailments are charged to the dairyman, and is it not also true that the milk for infants is not properly kept after its delivery by the milkman? Milk is made much more safe if sterilized before it is fed to children.

Congested Udder.—I have a Holstein cow nine years old which freshened yesterday. Last year she had garget in one of her hind quarters and since then her milk comes very slow from it. She gives about 45 pounds, but because of slow milking is not a very profitable cow. Could I dry this quarter up and if so, how? B. F. H., Grand Ledge, Mich.—Rub congested portion of udder with camphorated oil two or three times a day, this will have a tendency to dry her.

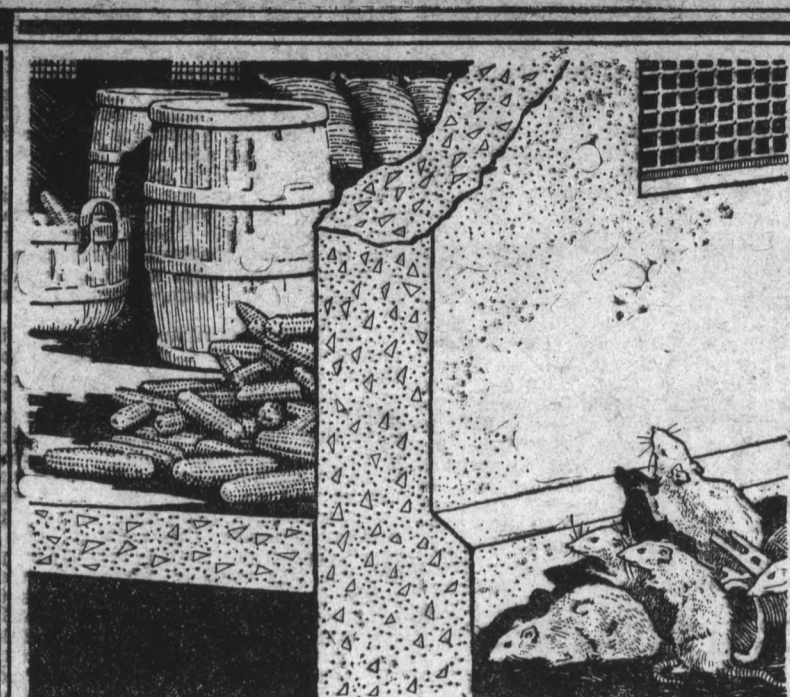
Acute Indigestion.—Recently we lost one two-year-old heifer and eight calves of various ages with what the neighbors say is acute indigestion. The calves are always all right in the morning and are dead in from two to twelve hours. E. E. R., Spring Lake, Mich.—First of all your feeder can perhaps prevent these attacks of indigestion by allowing the animal less food at a time by keeping the bowels open, exercising the animal and give hypsulphite of soda or salicylic acid every hour until the animal is relieved. It strikes the writer as rather peculiar that you should have so many deaths from acute indigestion, therefore he would advise you to consult a competent Vet. with a view to ascertaining the cause of death, as perhaps a removal of the cause would save you from making any more losses.

Sow Fails to Come in Heat.—I would like to know what to give my six-month-old sow to bring her in heat? She was in heat once last fall; since then we have not noticed any indications of her being in heat. J. P. E., Eagle, Mich.—Give her 10 grs. ground nux vomica and 30 grs of ground capsicum at a dose in feed two or three times a day for thirty days.

Rheumatism.—I am anxious to know what is causing the death of so many of my chickens. Their feet seem to get stiff, wings droop and the bird is unable to walk. Nearly all of them live but a few days after showing the symptoms of sickness and a peculiar thing about their ailment is that nearly all of them eat well up to shortly before they die. W. J. F., Conklin, Mich.—Your fowls should be kept in a clean, warm, dry place; their food supply changed and give each bird 1/2 gr. of sodium salicylate at a dose two or three times a day. You might try painting swollen part of feet with tincture iodine occasionally.

Obstructed Teat.—I have a cow with one obstructed teat which makes it very difficult to draw milk through it. Do you believe I require a milking tube to use when milking her? D. V. R., Grand Rapids, Mich.—Milking such a cow is always made more easy by using a milking tube, but remember the milking tube should be boiled for at least ten minutes each time before it is used, or else dip it in a solution of carbolic acid and water, one part acid to 20 of clean water. This is perhaps all that will be required in order to dilate the strictured teat canal; however, it is always good practice to use a dull-pointed, smooth hard rubber or highly polished steel sound somewhat larger than the canal, in order to break up adhesions.

Pigs Are Rheumatic.—I would like to know what can be done for our three-month-old pigs. Their legs seem to be sore and some of them can hardly walk. Those that are not so bad stand with their feet placed well under them and change legs as if suffering pain. They are fed bran and middlings in warm whey with a little ear corn. The pen is warm, well ventilated, has a cement floor, but the nests are plank raised slightly from the cement. G. W. R. C., Kent City, Mich.—Give each pig 3 grs. or perhaps 5 grs. of sodium salicylate at a dose three times a day and if any of their joints are swollen paint them occasionally with tincture of iodine, also discontinue feeding them corn, but in place of it feed some oats and give them more exercise.



BUILD THEM OUT
You can do it if you
USE CONCRETE FOR
FOUNDATIONS, WALLS
AND FLOORS. — for
No Rat Can Gnaw Through Concrete.
When you have built foundations, walls and floors of concrete, you have gone a great way toward preventing waste, filth, disease, fire. You have also built for permanence.
Ask for your free copy of Bulletins 137 and 144.
ROUT THE RAT

PORTLAND CEMENT ASSOCIATION

Atlanta	Chicago	Dallas	Denver	Indianapolis
Kansas City	Milwaukee	Minneapolis	New York	Parkersburg
Pittsburgh	Salt Lake City	San Francisco	Seattle	Washington, D. C.

CONCRETE for PERMANENCE

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers. Brookwater offers to sell a few choice bull calves of this kind. Our herd of Durocs has won more prizes at the State Fairs this year than any other.

Boar Pigs and Yearlings For Sale.

H. W. MUMFORD, OWNER O. F. FOSTER, MANAGER
Ann Arbor, Mich., R. 7.

Percheron, Belgian Sale

24 High Class Imported and American. Bred Stallions and mares with ages ranging from yearlings to matured horses will be offered for sale at Public Auction in the city of St. Johns at 1 o'clock P. M. Feb. 28, by the Horse Breeders of Clinton County. For particulars address

C. M. RICE, R. 3, St. Johns, Michigan

CATTLE

Lillie Farmstead Jersey Cattle. 8 bulls, ready for service, out of R. of M. dams. 10 heifers bred to freshen next fall. Colon C. Lillie, Coopersville, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Assoc. records, also on semi-annual test. C. E. Wehner, R. 4, Allegan, Mich.

Jersey Bulls For Sale Ready for service. Raleigh - St. Lambert breeding. Waterman & Waterman, Packard Rd., Ann Arbor, Mich.

ONE 11 mo. old solid colored gr. son of Royal Majesty whose dam as a 2 yr. produced 400-24 lbs. of butter 1 yr. First check \$90.00 gets him, registered, transferred and delivered any point in Mich. FRED BRENNAN Sec., Capac, Mich.

Choice Bulls ready for service. Also heifers for sale. Strong in the Blood of Royal Majesty. Come and see them or write for particulars. THE WILDWOOD HERD, Alvin Balden, Capac, Mich., Phone 143-5.

MAPLE Lane R. of M. Jersey Herd has for sale R. of M. cows, daughters of R. of M. cows, bull calves, heifer calves and bulls. All from 500 & 600 lb. dams. IRVIN FOX, Allegan, Mich.

JERSEY bull and bull calves for sale from R. of M. cows, also heifers and cows of all ages. C. E. WEHNER, R. 4, Allegan, Mich.

FOR SALE Registered Jersey bull calves. SMITH and PARKER, R. 4, Howell, Mich.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at Farmers prices. C. W. Orum, Secy. Cent. Mich., Shorthorn Breeders' Assn., McBride, Mich.

BIDWELL SHORTHORNS For Beef and Milk.
5 Bulls ready for service, 15 months to 2 years, for sale; also good Scotch-topped cows and heifers. Modern, sanitary equipment. One hour from Toledo, Ohio. N. Y. O. Ry. Visitors Welcome. Write us.
BIDWELL STOCK FARM Box B, Tecumseh, Michigan.

Waterlily Stock Farm
For sale 2 reg. Shorthorn bulls ready for service, real herd header prospects, in show shape, priced well worth the money.
THEODORE NICKLAS, Metamora, Mich.

Fair Lawns Shorthorns
Yearling bulls by Canada's best sire: Missie Augusta 60578 and Imp. Newton Frier 525120.
LAURENCE P. OTTO, Charlotte, Mich.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos., 3 roan, 1 white, 1 red, price \$150. to \$250. 1 son of Max-walton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

Bates Shorthorns the original milk strain young bulls 8 mos. old for sale. Price \$150 to \$200. J. B. HUMMEL, Mason, Mich.

Shorthorns—Two bulls, 15 and 16 mo. By a grandson of Cyrus Clay. COLLAR BROS., R. 2, Conklin, Mich.

Milking Shorthorns—Bull calf 5 mos., by a Grand-son of General Clay, dam by son of General Clay, \$150. A few females. S. E. BOOTH, Morrice, Mich.

SHORTHORNS. Butterfly Sultan, half brother to International Sr. Champion, in service. For good bulls, cows, and heifers. W. B. McQuillan, Howell, Mich.

Shorthorns Maxwellton Monarch 2nd, 35722 half brother to 5 Grand Champions in service. JOHN SCHMIDT, R. 5, Reed City, Mich.

Shorthorns—Four fine young bulls ready for service. Grandsons of Imp. Villager. Also bred heifer & cows heavy milking strain. Farmers prices. Free Catalogue. HOBBS & SON, Hart, Mich.

SON of Harthorth Welfare heads our herd of milk-Sing Shorthorns comprising Chiffley of Clay bred cows, young bulls ready for sale and service, write us Liddel Bros., R. 2, Clinton, Mich., Macon Phone.

Grand Traverse Shorthorn Asso. Reg. stock for M. E. DUCKLES, Sec., Traverse City, Mich.

Milking Shorthorns and Polled Durhams, 20 head cows heifers and young bulls, Sultans Duchess and Strayton Duchess included. M. B. Hallsted, R. 1, Orion, Mich.

Registered Bates Shorthorn bull for sale, 8 mos. old. Price \$100. GEO. B. LINDSEY, Otsago, Mich.

Shorthorn bulls for sale. Two 10 mos. old, two six mos. old. Will make good herd bulls, both beef and milk strain. A. L. WILSON, Scottville, Mich.

Cattle For Sale
2 Loads feeders and two loads yearling steers. Also 2 yearling cows any number 1, 2 and 3 year old from 600 to 1200 lbs. Isaac Shanstun, Fairfield, Iowa, R-8

Polled Durham Cattle 9 yearling bulls for sale. J. A. DeGARMO, Muir, Mich.

For Sale A pure bred roan bull calf sired by Silver SMITH & BLACKMAN, Watervliet, Mich.

HOGS.
DUROCS Orion Chief Perfection No. 66945, and Jennings Pilot Wonder No. 73373. Two outstanding boars of big type and excellent quality. All selected large type smoothsows. Thrifty, smooth, large boned spring gilts from these herd boars and choice sows at very reasonable prices. The Jennings Farms, Bailey, Mich.

GREY TOWER FARM

Now offers for sale a few choice Holstein bull calves, from high testing dams, with good A. R. O. records, at farmers' prices, write us about them and our

Durocs & Berkshires

M. D. KITCHEN Mgr., Grass Lake, Mich.

DUROCS service boars, bred sows, fall pigs. Express paid. J. H. BANGHART, E. Lansing, Mich.

Dobson's Durocs surplus stock all sold. Nothing doing till spring. ORLO L. DOBSON, Quincy, Mich.

Duroc Sows & Gilts guaranteed safe in pig. Fall boars and gilts not related. You want more size and feeding qualities; buy now. Cat. giving breeding and description of 30 sows. NEWTON BARNHART, St. Johns, Mich.

Duroc Jerseys—boars of the large heavy boned type. Prize winning stock, prices reasonable, type and breeding considered, also gilts bred to Junior Champion boar for spring farrow. F. J. Doodt, R. 1, Monroe, Mich.

Large boned Duroc Jersey September pigs either sex ready to ship. Breeding and prices on request. J. D. ORANE & SON, Plainwell, Mich.

DUROC Jerseys. Orders booked now for early spring pigs. R. G. R. I. Red cocks \$3.00, eggs in season. E. E. CALKINS, R. 6, Ann Arbor, Mich.

DUROC JERSEYS E. D. HEYDENBERK, Wayland, Mich.

Choice Duroc Jersey Gilts For Sale. CAREY U. EDMONDE, Hastings, Mich.

Duroc fall boars sired by Crimson Critic T., Satisfaction and Brookwater Principal, priced right. Bred sows all sold. M. C. TAYLOR, Milan, Mich.

BRED GILTS

O. I. C. To Wm. B. No. 47048 - Longfellow No. 18775 sire of 1st prize young herd at Iowa State Fair. Fall pigs and breeding boars. J. CARL JEWETT, Mason, Mich.

Chester Gilts bred for March farrow early fall pigs both sexes from best blood lines. F. W. ALEXANDER, Vassar, Mich.

Raise Chester Whites
Like This
the original big producers

I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developing ready for market at 4 months old. Write for my plan—More Money from Sows G. S. BENJAMIN, R. F. D. 10, Portland, Michigan.

Big Type O. I. C's.

Stock of all ages for sale. We showed at four state fairs and won more champions and Grand Champions than all the other breeders together double, we were Premier Breeder and Exhibitor at every fair we showed. We breed the best. We sell the best. We guarantee them to be the best. Write your wants. Get our Catalogue. We ship on approval. CRANDELL and SON, Cass City, Mich.

O. I. C's 2 choice May boars & Sept. & Oct. pigs sired by First Premium boar Mich. State Fair 1917. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C. & CHESTER WHITE SWINE. Strictly big type with quality. Have a choice lot of boars fit for early fall service. These boars will be sold worth the money. Also have some fine gilts. I will ship O. I. C. NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

O. I. C's Registered serviceable boars. Bred gilts, Aug., Sept., Oct. pigs. Registered Shorthorn sows lambs. G. F. Andrews, Dansville, Mich.

O. I. C. For sale a few extra good gilts bred for March and April farrow. H. W. MANN, Dansville, Mich.

O. I. C's all sold except some fall gilts. Order your spring pigs now. C. J. THOMPSON, Rockford, Mich.

O. I. C. Nothing for sale but our tried sow and fall pigs. F. C. BURGESS, Mason, Mich.

Additional Stock Ads. on Page 239

Markets.

GRAINS AND SEEDS

February 19, 1918.

WHEAT.—Flour continues in urgent demand, which with the small offerings prevents millers from securing adequate supplies for their day-to-day needs. A year ago No. 2 red wheat was quoted on the local market at \$1.88 per bushel. Present prices are: No. 2 red \$2.17; No. 2 white \$2.15; No. 2 mixed \$2.15.

CORN.—While cars are being returned from the corn belt filled with this cereal, a waiting demand is rapidly absorbing all shipments, and dealers are aware that this will probably continue for some time. No definite idea is expressed as to the amount that farmers will be able to put on the market, but the opinion prevails in the mind of the general public that all the merchantable corn will be needed. The outlook for the coming crop no doubt will be an additional factor in favor of maintaining prices. One year ago No. 3 corn sold on the local market at \$1.06½ per bushel. On Monday cash No. 3 sold here at \$1.80; No. 3 yellow \$1.87; No. 4 do \$1.80; No. 5 do \$1.68; No. 6 do \$1.60.

OATS.—Receipts of oats at this point are disappointingly small, while the demand is well sustained. Mills continue to buy the cereal, which holds the market on a firm basis. A year ago standard oats sold at 62c. They were quoted on Monday at 91½c. No. 3 white 91c; No. 4 white 90c.

RYE.—This cereal now sells above the price for wheat. The supplies are small and demand urgent. Cash No. 2 is quoted at \$2.20 per bushel.

BEANS.—Consumers are now making inquiry for beans and prices are slowly moving upward. At Detroit immediate and prompt shipment are now quoted at \$12.70 per cwt. In Chicago the feeling is also firmer, with the buying radius enlarged. Michigan hand-picked pea beans in sound, dry condition are quoted there at \$13@13.50; red kidneys, fancy \$14@15; do fair to choice \$11@13.

SEEDS.—Demand is good but prices are lower. Prime red clover is \$20; March \$19; alsike \$16.60; timothy \$4.

FLOUR AND FEEDS

FLOUR.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Standard patent \$11.10@11.15; straight winter \$10.80@11; spring patent \$11.20@11.30; rye flour \$11.80 per bbl.

FEED.—In 100-lb. sacks jobbing lots: Bran \$34.50; standard middlings \$36.50; fine middlings \$43.50; cracked corn \$75; coarse corn meal \$74; corn and oat chop \$60 per ton.

HAY.—In carlots at Detroit: No. 1 timothy \$25.50@26; standard timothy \$24.50@25; light mixed \$24.50@25; No. 2 timothy \$23.50@24; No. 1 clover, \$21.50@22 per ton.

Pittsburgh.—No. 1 timothy \$31.50@32; No. 2 timothy \$29.50@30; No. 1 light mixed \$30@30.50; No. 1 clover mixed \$31@32; No. 1 clover \$31@32.

DAIRY PRODUCTS

BUTTER.—Market is firm with unchanged prices. Fresh creamery firsts are quoted at 48c per pound; fresh creamery extras 49c.

Chicago.—Market is steady with no special change. Creamery extras 49c; extra firsts 48½c; packing stock 37½@38c per pound.

CHEESE.—Michigan flats 26¼@26½c per lb; New York flats 27c; brick 28¼@29¼c; long horns 28¾c; brick 28¼@28½c; long horns 28¾c; Michigan daisies 27c; Wisconsin daisies 27½c; domestic Swiss 35@42c for the prime to fancy; limburg 30¼@31¼c.

DRESSED CALVES.—Fancy 18@20c; choice 17c; common 16c.

POULTRY PRODUCTS

POULTRY.—(Live).—The Food Administration has ordered that poultry dealers shall not purchase, ship, sell or negotiate the sale of any live or freshly killed hens or pullets between February 11 and April 30 of this year. The object is to save all egg-laying chickens during the egg season for laying purposes. Best spring chickens 30@32c; ducks 30@32c; geese 30@32c; turkeys 30@32c.

Chicago.—(Live).—Offerings small and trading slow. Fowls 25@30c per lb; ducks 29@30c; geese 24@25c; tur-

keys, good 25c. (Dressed).—Fowls 30@32c; ducks, fancy 32c; geese 26@27c; turkeys 34½@35c.

EGGS.—Eggs are scarce and in good demand. Fresh firsts 54@55c per dozen.

Chicago.—Market is easy and supplies increasing. For fresh Michigan firsts 52c; ordinary firsts 49½@50c; miscellaneous lots, cases included 50@51c per dozen.

FRUITS—VEGETABLES

POTATOES.—There were 22 cars of potatoes on the Detroit market Monday morning. The market is unsettled and some Michigan stock in good condition sacked, U. S. grade No. 1 sold to jobbers at \$1.90@2 per cwt. The same grade of Michigan stock sold in Cleveland at \$1.80@2; in Indianapolis at \$2.25@2.30; in Washington at \$2.85@3; in Columbus at \$2.40@2.50; in Pittsburgh \$2.10@2.15; in Cincinnati \$2.25; in Memphis at \$2.40@2.50. At Traverse City and Cadillac buyers are slow to take the above grade from farmers at \$1@1.10 per cwt. At Grand Rapids trade is paying \$1.80@1.95. The farmers are receiving \$1@1.10 for U. S. grade No. 1 in Wisconsin and 50@60c for No. 2. In Colorado the best stock brings the grower \$1.10@1.15 per cwt.

APPLES.—There is a good demand for apples at present, which is forcing a more liberal movement of this product. Baldwins sold in Detroit at \$5.50 per bbl. on Monday. In Chicago Michigan Spies sold on Saturday at \$6.75@7.50; Greenings at \$6.75@7.50; Baldwins \$5.50@6.

WOOL

The trade is demanding more domestic wools for civilian purposes which, with other regular as well as extraordinary calls for the various grades has improved the feeling at seaboard markets. Fleeces are all but gone, and attention is now being turned to producing districts again. Sales of fleeces last week were made with prices ranging from 58@85c per lb.

LIVE STOCK

BUFFALO.

February 13, 1918.

Cattle.—Receipts 100 cars; shipping grades dull, 25@40c lower; cows and heifers steady; best shipping steers \$10.50@12.75; fair to good \$11.50@12.25; plain \$10.25@11.25; coarse and common \$9.75@10; choice heavy butcher steers \$11.50@11.75; fair to good \$11@11.25; best handy steers \$11.25@11.50; fair to good \$10@10.75; light and common \$9@9.75; yearlings choice to prime \$12.50; fair to good \$11.75@12; best heavy heifers \$10.75@11; good butcher heifers \$10.25@10.50; fair butcher heifers \$9@9.75; common \$7@8; fancy fat cows \$10@10.50; best fat cows \$9.50@9.75; good butcher cows \$8.50@9; medium to fair \$7@7.50; cutters \$6@6.75; canners \$4.50@5.75; best bulls \$10.50; butcher bulls \$8.50@9; common bulls \$6.50@7; feeding steers \$6.50@9; stockers \$6.50@7; milkers and springers \$65@125.

Hogs.—Receipts 60 cars; market 15@25c higher; heavy \$17.20@17.40; yorkers \$17.40@17.50; pigs \$16@16.25.

Sheep and Lambs.—Receipts 30 cars; market steady; top lambs \$17.50@17.75; yearlings \$13.50@14.50; wethers \$13.50@14; ewes \$12.50@13.

Calves.—Receipts 12 cars; market 50c higher; tops \$17.50; fed calves \$7@8.50.

CHICAGO.

February 18, 1918.

Cattle. Hogs. Sheep.
Receipts today ..15,000 45,000 18,000
Same day 1917..27,745 66,146 17,462
Last week.....70,179 224,942 67,352
Same wk 1917...56,846 234,655 71,634

Cattle were in good demand today, and the choicer lots were more wanted than of late. Prices were largely 10@15c higher, and prime heavy steers sold up to \$13.85. Hogs were 15@25c higher, with sales at \$16.05@17.05. The average weight of hogs marketed last week rose to 232 lbs. Lambs are lower, with the best selling at \$16.65.

Cattle were marketed freely last week and prices declined 25c, and in some cases more. The best heavy heaves sold away below the prices paid a week earlier. In fact, good cattle had a poor outlet much of the time, while the common and middling kinds were chiefly wanted. Taking the week as a whole, the bulk of the steers sold at \$10.50@12.50, the better class at \$12.50@13.80 and inferior to fair little steers at \$8.40@9.40. A better class of steers of light weight brought \$9.50@11.80, and medium to pretty good steers at \$11.85@12.45, with choice heavy heaves at \$13 and upward, yearling steers \$12@13.50 for good to prime offerings, commoner lots at \$9.50@

10.50. Cows sold at \$7.30@10.75; heifers at \$6.75@11.50, cutters \$6.80@7.25; canners \$6.25@6.75 and bulls \$7@10.65. The calf market was much lower, with light vealers taken at \$12@13.50 and heavy calves going mostly at \$7@11.75. Stockers, yearlings and feeders were scarce and decidedly higher, with the packers getting most desirable offerings, sales ranging at \$7.25@11, but very few sales took place anywhere near top figures. There is every reason to expect continued excessive receipts of cattle from now on, as many shipments have been delayed for lack of cars.

The food administration makes the announcement that if weather conditions continue favorable, unusually large shipments of hogs to market are likely in the next few weeks, many hogs that have been withheld for lack of cars being ready to ship. As exceptionally large orders for provisions for export will be placed for March shipment, following those for February, the bureau requests the packers not to buy hogs at any time below \$15.50 per 100 lbs. On the low day of last week prime hogs brought \$16.05, but on the closing day hogs brought \$15.75@16.75 for rough packing to prime butcher lots, with hogs weighing around 163 to 232 lbs. the highest sellers. Prices were not much different from those of a week earlier, with pigs selling mainly at \$12@15.75, according to weight. Scarcity of prime light hogs has caused them to sell the highest.

Lambs have comprised most of the offerings displayed in the sheep division of the stock yards, most of them being fed westerns, and they have sold extremely well as a rule. The few lots of feeder lambs offered sold well. During the past week prices for lambs weakened after the most pressing orders were filled, and sales were about \$1 lower than a week ago, with sales at \$13@16.70, while ewe breeding lambs sold at \$16.50@17. Breeding ewes brought \$11@16 and the feeding lambs \$15.25@16.50. Yearlings closed at \$12@15, wethers at \$11.75@13.40, ewes at \$7@13.10, bucks at \$9@10.75, and goats at \$7@10. Sheep were steady but yearlings declined 25@50c.

Horses were marketed more freely last week, and there was a corresponding improvement in the general demand, with especially large calls for army horses. Prices ruled firm on the basis of \$60@150 for inferior to good farm chunks, \$150@225 for loggers and \$185@265 for drafters. Cavalry horses were taken for the United States service at \$155, and the southern buyers bought chunks at \$75@125.

TWO-DAY AGRICULTURAL SCHOOLS.

The following two-day agricultural schools will be held during the ensuing week at the places and dates named. These schools are held under the auspices of the Extension Department of the Michigan Agricultural College, and will prove both interesting and instructive to both old and young in every farm family in the localities in which they are held.

- Feb. 26-27, Springport, Jackson Co.
- Feb. 28-March 1, Eaton Rapids, Eaton Co.
- Feb. 28-March 1, Decatur, Van Buren Co.
- Feb. 25-26, Lawton, Van Buren Co.
- Feb. 27-28, Hartford, Van Buren Co.
- March 1-2, Covert, Van Buren Co.
- March 4-9, Farmers' Week, M. A. C., March 12-13, Bingham, Leelanau Co.
- March 14-15, Ironton, Charlevoix Co.
- March 11-12, Elk Rapids, Antrim Co.
- March 13-14, Kingsley, Grand Traverse Co.
- March 15-16, Buckley, Wexford Co.
- March 18-19, Petoskey, Emmet Co.

POTATO GROWERS TO MEET.

At East Lansing, March 7-8, will be held a meeting of the Michigan State Potato Growers' Association. This Association was formed for the betterment of the potato industry and all those who are interested in the things the association should stand for are welcome to become members.—Dorr D. Buell, President.

Eureka Planter

Saves Time and Labor—Increases Yield
Pays for itself many times over. One man and team opens furrow, drops seed any distance or depth, drops fertilizer (if desired), covers up, marks next row. Automatic. More accurate, dependable and quicker than hand planting. Furrow opens and seed drops in plain sight. Does not injure seed. Has long life, needs few repairs. 3 sizes for 1 and 2 rows. Protect yourself against uncertain labor and season.
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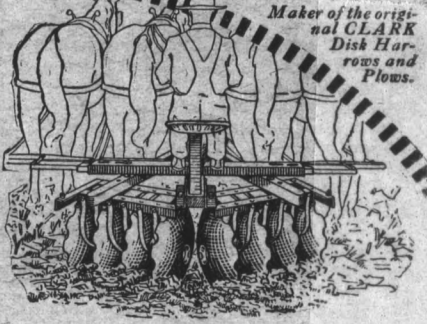
Cheap Land!

Put your waste land under cultivation cheaply and quickly. Clean up the bad spots with a

Cutaway Bush and Bog Plow

Does away with hand labor, cuts bogs and stump land that a moldboard cannot touch. Also for heavy stubble and any disking. Two and four-horse. Heavy disks forged sharp. Thousands in use. Write for new catalog and free book "The Soil and Its Tillage," also for name of nearest dealer.

The Cutaway Harrow Company
465 Main Street
Higganum, Conn.



Maker of the original CLARK Disk Harrows and Plows.

STOP THE KAISERS ADVANCE GUARD KILL THE RATS WITH RATNIP

Never Fails—Attracts the rats. They Can't Resist It. A paste in tubes—15c and 25c. BUFFALO SPECIALTY CO., Buffalo, N. Y.



Start Your Calves at a Minimum Cost

Lamprey's Calf Meal

Don't use whole milk at 30c to 40c a day and feed at a loss. **SELL YOUR WHOLE MILK.** Raise your Calves on Lamprey's Calf Meal, with Little or No whole milk. Will save its cost in cream the first six weeks. Simply mix with water or skimmed milk. If your dealer can't supply you, write us. Money refunded if you do not find it absolutely satisfactory.

LAMPREY PRODUCTS, Inc. Dept. C.
(Until recently Prussian Remedy Co.)

"An America First Concern." ST. PAUL, MINN.

8 HOURS WORK IN 4

In planting season when your time is worth money it is a big saving to be able to plow, disc, harrow and level your fields all at one time. This can be done with any plow you have, except walking, by attaching a

KRAMER ROTARY HARROW

and using the same power you had before. It makes a better seed bed also which means bigger crops. Write today for our new circular and prices. DEPT. 62

Kramer Rotary Harrow Co., MORTON, ILLINOIS

CULL BEANS

Free from dirt and stones. Suitable for grinding. Beans are dry. 22 to 26% protein. Results considered—the cheapest feed in the world. A wonderful feed for cattle, sheep or hogs. Price \$57 ton, sacks included, delivered Michigan points. Order today before lot is sold.

Goodells Elevator Co., Goodells, Mich.

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons, 623-625 Wabash Bldg., Pittsburgh Pa.

EGGS: We are paying good premiums for new-laid Eggs, either Whites or Browns. Write us for particulars. AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

"No Repairs for 17 Years"

THAT'S like "life insurance for your butter profits"—and it is what H. M. Firestone found in the National Cream Separator. Read what he says:

"I have been a user of National Cream Separator for seventeen years and after using it for all these years I have not had any repairs. I am now giving an order for some rubber rings and this is the first expense I have ever had outside of oil."

Yours very truly,
H. M. Firestone,
Middlebranch, Ohio

Seventeen years of service—seventeen years of cream profits *without missing one day*. And that is not an extraordinary record for the National. In fact, although we have been making cream separators for 25 years, we do not know of any National that has worn out. **No wonder the National challenges the world.** Here is a separator that skims *all the cream*. Tests show that less than one drop of cream remains in a gallon of milk skimmed by the National. And in addition to that—the New National gives you a life time of service without repair cost.

The Simplest Separator Ever Made

Why do we guarantee that it will give a lifetime of service? **Because the New National is simple.** There is nothing to get out of repair—nothing that can be injured or misplaced by carelessness. **The New National is the simplest cream separator ever made.**

And that is what you must take into consideration in buying a separator. *Buy right.* Don't take a chance on losing days and days of butter profits waiting for repairs. Write today for the New National catalog—tells how simplest separator ever made guarantees years of butter profits.

1/40 Down After Trial

We are making a striking offer on the New National. We will send you a New National upon your simple request. Don't send us a penny. **Give it a 30 days' working test.** Give it a hard trial. Check up its cream return with any separators you ever saw or heard about. Compare its workmanship and its easy running qualities with other machines. Remember, too, that the New National is guaranteed to give a lifetime of service. Test it for 30 full days in your own way. Then decide if you wish to keep it or not. **You are to be the judge.** If you send it back we will refund any freight that you have paid. If you keep it—you may send us 1/40th of the rock-bottom price and then pay the balance in small monthly amounts.

30 Days Free Trial!

The thirty days' free trial will show you how in our twenty-five years of manufacturing we have made the New National machine the simplest separator ever made. You can see how perfect the machinery is. Every gear in it is inspected a half a dozen times before a New National leaves our factory. You can test out its clean skimming. This trial is to enable you to prove for yourself and this machine with a reputation of twenty-five years is the only one you can afford to buy. Remember, you don't buy a cream separator very often and when you get one you want to use it every day for many years. Write for our catalog today, and study all the points of the New National.

Easy Payments

You may pay for the New National by the month as you receive your creamery check. This is the most convenient way for the dairyman as it practically makes the machine pay for itself. And the New National will never make any of your creamery checks short or lose any money for you by breaking down and keeping you waiting while you have it repaired.

Send the Coupon for Free Catalog!

Cut off this coupon and mail it today for our catalog. Every farmer or dairyman ought to know all about the big offer we are making. Remember, you have 30 days to get acquainted with the National and you are protected the rest of your life by an unlimited guarantee. Write now!

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The New National



The Simplest Cream Separator ever made now yours on a liberal offer.

NATIONAL Dairy Machine Co.

Dept. 4812
Goshen, Ind., - U. S. A.

Dear Sirs:—Without any obligation on my part, please send me your free catalog of National Cream Separators and details of your special proposition.

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