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Connecting Up Farm Bureaus

THE organization of a national farm bureau with direct connections with state and county farm bureaus is sure to result in making these county organizations a much more vital force in the service of agriculture than they have been up to this time. Such a federation of agricultural interests not only means more efficient county farm bureaus, but it also means that they serve the farmer in a much larger way than any movement heretofore attempted.

The recent meeting of the officers of the county farm bureaus of the state of Michigan at Lansing showed very clearly that the agricultural interests of the state are alive to the need of an aggressive form of organization that will help the farmer, not alone in his farm operations, but in his dealings with other organized interests.

For several years the chief function of the county farm bureau has been to devise means of raising funds to help pay the county agricultural agent, an efficiency man sent out by the educational branch of the United States Department of Agriculture with the idea in view of educating the farmers to produce larger crops and better live stock.

The thought advanced by the various farm bureaus at the Lansing meeting seemed to be that the time has arrived when we should change our plans and methods and utilize these county farm bureaus as a means of representing the business interests as well as the production interests of the farmer. In order to make the county farm bureau thoroughly efficient in representing the business interests of the farmer, it should become a unit of the state organiza-

How to Make Your County and State Farm Bureau Strong Units in the National Federation of Farm Bureaus to Represent Farmers in Their Dealings with Other Interests.

tion and the state federation of farm bureaus, a unit of a national federation of farm bureaus to represent the farmer in his dealings with other organized interests. Such tentative organizations have already been launched. How well they will serve our agricultural needs will depend entirely upon the support given by individual farmers.

Such a program necessarily involves questions not controllable within the

The Michigan Farmer believes this movement the most important one ever made towards stabilizing the prices of agricultural products and insuring a regular and uniform supply of food for our people. Such a national farm bureau would be able to furnish accurate cost production figures which would help to insure producers of farm products of fair prices. These prices would be fixed on a fair basis, and not

Michigan can be expressed in an authoritative, sane way and through which the farmers of the state may act collectively to improve their economic and social interests.

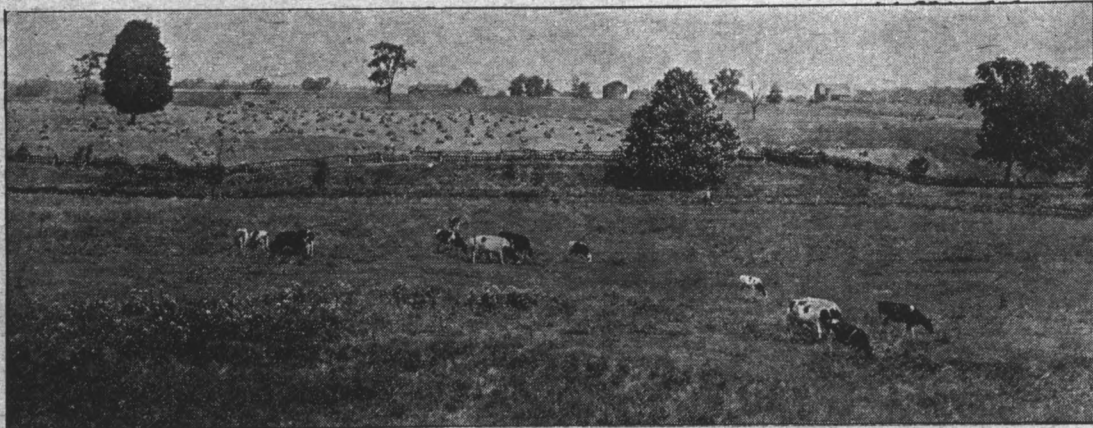
At the present time the greatest danger confronting this new and powerful organization is that of allowing the Department of Agriculture through its county agents to have too great an influence in deciding the policies of the state and national federations of farm bureaus. But so long as the hundreds of farmers belonging to the farm bureaus of the different counties retain control of their organizations there need be no danger in that regard. As a matter of fact, the bringing together of the farm bureaus should serve to correct a condition that is seriously interfering with county agent work in many counties, and that is carrying out too many orders from Washington.

Plainly, then, the first step toward a thoroughly efficient national farmers' organization—one capable of united effort—is for the farmers to join together in selecting the strongest men in their respective counties to represent them in their county farm bureaus. If all the farmers who are now members of some type of farm organization would unite to make their county and state farm

bureaus sufficiently strong to reflect the agricultural conditions and requirements of their respective counties and states they would have a tremendous power both politically and economically.

Our present farm organizations do not reflect the real conditions of the counties and state. They are made up of groups of farmers, scattered over

(Concluded on next page).



The Farm Bureau is a Big Factor in Improving the Herds and flocks of a County.

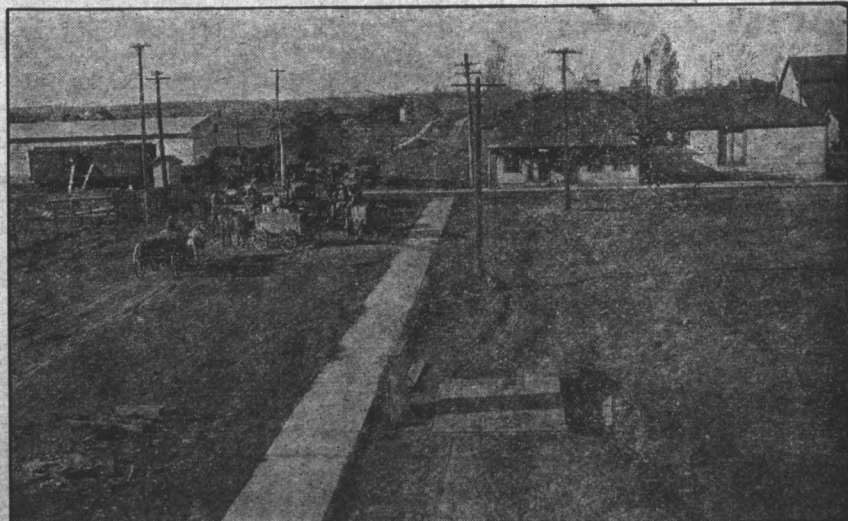
county or state, and at present the farmers have no efficient federal organization which represents them in such a way as other organized interests. The business men and the laboring men are each organized into powerful national organizations. Why should not the varied agricultural interests of the United States be combined into a strong national organization?

by speculators who buy large quantities of food products and appeal to the government to advance prices after the products are safely stored in their warehouses or aid them in crawling out from under a falling market.

Those gentlemen who were selected as officers of the new state farm bureau clearly have no other desire than to build up a strong farm organization through which the farm sentiment of



Tillage, Seed and Fertilizer Problems Are Always of Vital Interest.



Farm Bureau Encourages Cooperative Marketing. Scene at Elmira, Mich.

The Michigan Farmer

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DETROIT, MARCH 1, 1919



CURRENT COMMENT

Public Opinion Will Rule

PRESIDENT WILSON'S reasonable request that congress refrain from the discussion of proposed covenant of a League of Nations as reported to the Peace Conference by the committee of which he was chairman, until he could have opportunity to explain to them its provisions as discussed and understood by the representatives of the nations which formulated them, has been disregarded. A number of senators could not await a fair consideration of the plan before hastening to condemn it as impossible of approval by the United States. Some party conventions, including one recently held in Michigan, have likewise placed their stamp of disapproval upon the plan.

In other words, self-appointed political leaders have in this way sought to make the proposed League of Nations a political issue, which properly it is not in any sense of the word. Regardless of the merits of the plan this effort should be deprecated and discouraged by the people of the United States. And it will be. Intelligent American public opinion will dictate the course of our representatives at the Peace Conference in formulating a final plan for an effective League of Nations, if they desire such a league, and of the United States Senate in the ratification of the plan which may be adopted in accord with that opinion. And they will obey.

The formulation of a plan for a League of Nations by a committee of the Peace Conference was without doubt the result of an overwhelming sentiment among the people of war stricken Europe in favor of any plan which promises to make it more difficult, if not impossible, for ambitious or designing rulers, ruling classes or parties to precipitate war on a reluctant world. And if the people of those countries believe the proposed covenant will accomplish that desired result, they will insist on favorable action by their representatives at the conference and their governments at home. And the people of the United States will do the same thing.

And the American public will, for the

most part, await full information and intelligent discussion of the plan before forming a final opinion in the matter. If, in the public mind, the proposed plan points toward world security from a repetition of the experiences of the last four years, public approval will be so unanimous as to brook no denial. And, in this matter the public will do its own thinking. Public opinion should, and will, rule.

Butter and Egg Inspection

BUTTER and egg dealers in large market centers are awaiting with interest the beginning of the Bureau of Markets butter inspection and standardization system which is expected to be put into effect on butter within the next few weeks, and eventually to be extended to the egg trade. This new service is to be introduced in forty-six cities where government inspectors will keep in close touch with all branches of the trade, and work for the standardization of grades in all markets, so that an extra grade of butter in Chicago or Detroit will be of the same quality as an extra grade in New York or Philadelphia.

The Bureau of Markets explains that there is no intention on its part to assume any of the functions of the late food administration by any legislation, nor does it desire to have any of its arbitrary regulations transferred to this new branch of its work.

The staff of government inspectors to be appointed is a large one and this activity of the bureau is to be followed closely. The service is to be performed by inspectors and largely at the request of the producer and some of the buyers who may have disputes with the seller.

Such a service, if conducted along practical lines, and not made arbitrary, is sure to become of considerable value in improving the quality of American butter and helping to stabilize the markets, as well as encouraging consumption, at a time when substitutes are making serious inroads in the use of butter. The sale of inferior butter at high prices has done more than any one thing to cause consumers to turn to substitutes, and the new move to standardize butter is a step in the right direction.

Standard Fertilizer Analyses

THE Soil Improvement Committee of the National Fertilizer Association has brought about an important reform in the standardization of fertilizer formulas. The recommendations of this committee adopted by the subscribers maintaining it at a recent meeting held in New York, should serve to promote the manufacture and distribution of better fertilizers at a lower price. In working out the exact analyses to be adopted the following principles were followed:

1. No analysis to contain less than fourteen per cent total available plant food.
2. No ammoniated fertilizer to contain less than two per cent ammonia.
3. No complete fertilizer or "alkaline" goods to contain less than two per cent of potash.
4. Increases in phosphoric acid content by two-unit steps only.
5. Increases in ammonia by one-unit steps only.
6. Increases in potash by not less than two-unit steps.

This action should accomplish several beneficial results. The elimination of low-grade goods will result in a large saving in freight charges on the actual plant food purchased. The elimination of a large number of fractional analyses will save the user needless confusion in the selection of a brand and determining its relative value. Factory costs should also be lessened by a reduction in the number of brands put out.

Standardization has come to be recognized as good economy in every line. Enforced standardization in many lines has resulted from the necessity of wartime conservation, and the lessons thus learned will gradually be applied under peace conditions as their economic value becomes better appreciated.

Employment and Prosperity

THAT congress should exhibit a sudden spasm of economy is an encouraging omen to the overburdened taxpayers of the country. Governmental economy in many places would be welcomed by our people at all times, and especially at the present time. But the failure of congress to provide for a continuation of the United States employment service at the present time will be looked upon as poor economy by a large class of thinking people.

It is important to every industry, and especially to agriculture, that the returning soldiers and the great army of industrial war workers find employment at the earliest possible date after their release. Any general condition of unemployment would disturb industrial conditions in all lines. It would curtail consumption of food stuffs as well as of manufactured goods. True, it would unavoidably reduce wages from the present high point, but it would reduce the farmer's earning power as well. Industrial readjustments must be gradual, rather than sudden, if the best interests of industry, including agriculture, are to be conserved.

ANTRIM COUNTY GRANGE FAVORS WAREHOUSE AMENDMENT.

Resolution Adopted February 19.

Whereas, it is reported that the legislature will not submit an amendment to the constitution at the April election, for permission to bond the state for \$5,000,000 for state terminal warehouses, and

Whereas, the farmers believe the interests of both the consumer and the producer will be greatly benefited by state warehouses, thereby stabilizing our markets for produce, and

Whereas, we believe terminal warehouses are just as important as good roads to the consumer and producer.

Therefore, be it resolved, that, Antrim County Pomona Grange No. 38 in session at Forest Home Grange Hall, Forest Home township, urge the legislature to make provisions for the submitting of this amendment at the April election, 1919.

R. E. MORROW,
Acting Secretary.

CONNECTING UP FARM BUREAUS.

(Continued from first page).

the country, that are interested in special crops, special breeds of live stock and special types of marketing. They meet at frequent intervals, discuss matters relating to their particular business and pass resolutions, but they fail to connect up in such a way as to get the cooperation of others to make their influence felt in the state legislatures or in the National Congress. The present organizations must work in harmony with other organizations and groups of farmers before they can wield any powerful influence in state and national affairs. By presenting a united front through a national organization every county and state farm bureau would be brought to see the other fellow's problems, each working for all and all working for each.

News of the Week

Wednesday, February 19.

PREMIER CLEMENCEAU of France is fired on and wounded. Allied forces in northern Russia force the Reds to retreat. General Denikin, with his anti-red army marches 231 miles to the Caspian sea and captures

31,000 enemy prisoners. Trotsky is now opposing Lenin's proposal to send Bolshevik delegates to the Peace Conference. A large detachment of Costa Rican troops are mobilized on the Nicaraguan frontier threatening invasion. The United States government plans to write ship insurance in order to encourage the American merchant marine. The Michigan republican state convention nominates Mrs. Dora H. Stockman, of Lansing, and L. Whitney Watkins, of Jackson, as candidates for members of the state board of agriculture. Michigan Supreme Court declares the Damon law unconstitutional and thereby opens the way for importations of liquor into this state.

Thursday, February 20. . . .

GREAT BRITAIN begins recruiting 900,000 men as their share of the big army to be under the control of the League of Nations. President Poincaré, of France, declares that America's help in the great war has saved the world. The treasury department at Washington announces that officials and employees of a state, county, city or other political subdivisions are not required to pay income taxes on their public compensation for 1918. President Seitz of the German-Austrian republic announces that the new government is now firmly established. January exports from the United States are valued at \$623,000,000, which is a new record for this country.

Friday, February 21.

AMERICAN troops are now quartered in Berlin. Peace Council is told that the Germans are in need of food supplies lest famine or Bolshevism or both overtake them. The Federal Agricultural Committee reports favorably on the \$31,000,000 annual agricultural appropriation bill with amendments approximating \$5,000,000 more. Paderewski loses the Polish presidency to M. Trompozinski by the narrow margin of 152-149 votes. Congressman-elect Victor L. Berger, of Milwaukee, and four other socialist leaders convicted of conspiracy to obstruct the draft law are sentenced to twenty years in Leavenworth prison.

Saturday, February 22.

RIOTS in Bavaria result in 700 Reds being slain and four ministers of the Bavarian Diet are shot. The Paris conference decides that the Panama Canal is outside the jurisdiction of the Allies. Further fighting is reported in northern Russia with the results in favor of the American and Allied troops. The Siberian government flatly denies the rumor of an agreement between Siberia and Japan in which the former government was to receive men and munitions with which to fight the Bolsheviks. Secretary of War Baker urges the establishment of a temporary army of 500,000.

Sunday, February 23.

THE condition of Premier Clemenceau, of France, is much improved. A soviet government is reported to have been proclaimed by the Reds in Munich, with the complete overthrow of the Bavarian republic. The Allied troops push forward thirty-five miles further in northern Russia. British miners vote in favor of a nation-wide strike. Twelve persons are believed to have been killed and seventy-five wounded in a railway collision at Pittsburgh. Congress will consider the authorizing of surveys of great-lakes-to-the-sea projects.

Monday, February 24.

PRESIDENT WILSON arrives in Boston, addresses the American people in which he states that America's job is not yet finished, and leaves by special train for Washington. Recent riots in Munich are said to have been led by former crown prince Rupprecht of Bavaria. New revolts in Moscow have been suppressed and fifty-five chiefs are held in conspiracy by the Bolsheviks. Scores are reported killed in street fighting in Budapest, Hungary. New York police arrest ten Cubans and Spaniards who are alleged to have planned outrages in Boston and to make attempts on the life of President Wilson.

Tuesday, February 25.

MICHIGAN Bolsheviks apparently failed to gain control of the socialist party in convention at Grand Rapids. Prince Leopold, former head of German armies on Russian front, is imprisoned in Munich charged as one of the plotters against the recent Bavarian ministry. English house of commons is making a survey of conditions looking toward an improvement of her present threatening economic situation. The provisional government of Ireland sends delegates to claim a seat in the peace conference.

The agricultural commission of the Michigan Bankers' Association, at its recent session endorsed the Michigan farm bureau movement.



Lenawee County Farm Survey

By Earle G. Williams

THE day of the farmer who "don't care" how things go, is past, as was demonstrated in the survey held on 453 Lenawee county farms by the Office of Farm Management, and the day of the farmer who uses his brain in cooperation with his hands has arrived.

The studies included 300 farms operated by owners of the soil they tilled, and 153 farms managed by tenants. Since it was in Lenawee county that Michigan's pioneer agricultural endeavors took place, the region being settled as early as 1836, and having passed through the several periods of evolution from forest to specialized and diversified conditions, the county offers a very good field for study, and from the survey made under the supervision of H. M. Dixon and J. A. Drake, of the Office of Farm Management, several helpful points were discovered which are being used to show the way to success to thousands of farmers in sections where conditions are quite similar to those of Lenawee county.

The survey shows that general farming with a liberal amount of dairying is on the average the type most easily made profitable; that specialized dairy farms pay better than dairy and grain farms, but not so well as the combination of dairying and hog raising. Dairying with hogs and grain was found to yield a better labor income than any other combination. The advantages of this kind of farming are greater diversity of income, a large percentage of receipts from sale of live stock and animal products, a small amount of the whole crops being sold off the farm, but the large percentage being fed out and returned to the soil as fertilizer, thus being returned to insure the next season's profits and yields.

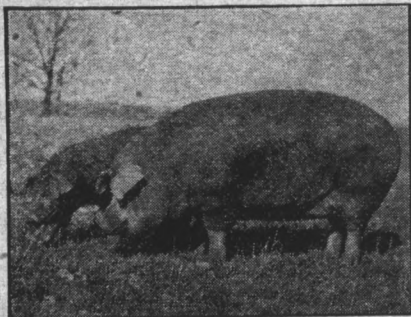
There has existed in the minds of some men a doubt as to whether there is direct relation between the amount of capital invested and the labor income of the farmer. On sixty-six owner farms studied in this survey, with sixty acres and under and averaging forty-five acres in area, made an average labor income of \$277; the group of 124 owner farms from sixty-one to 100 acres and averaging eighty-four acres in area, made an average labor income of \$445; while the group of farms of more than 100 acres, averaging 223 acres in area, made an average labor income of \$1,047. This goes to show the influence in the size of the business as measured in terms of the size of the farms.

On the other hand, sixty-seven farms with an average investment of \$4,850, made an average labor income of \$276; fifty-four farms, with an average investment of \$12,813, made an average labor income of \$488; and thirty-one

farms, with an average investment of \$27,134, made an average labor income of \$1,139. Which goes to show the influence of the size of the business as measured by capital invested.

The survey shows that the besetting sin of farmers of this section is the sale of surplus crops direct, rather than feeding them out and selling a high-priced meat animal, thus converting the crops into greater profits. Although primarily a live stock section, Lenawee county has many farmers who continue to receive from ten to thirty per cent of their total income from the sale of surplus crops, whereas their location would permit distribution of finished meat animals or of dairy products under exceptionally favorable conditions.

Wheat, oats and corn are the leading farm crops of Lenawee county. Alfalfa leads as the special crop, and it is very promising to note the increase



in popularity of this crop, at least a small acreage being found on nearly every one of the 453 farms considered. Soy beans do well on all soils of the county, and make a very valuable winter feed for the live stock, especially for starting feeder lambs in the fall. Cowpeas are making profits for farmers on sandy soils, and the acreage should be increased.

It was found in Lenawee county that the farmers with a capital ranging from \$1,000 to \$7,000 make better labor incomes by renting their farms than by owning them. No tenants were found with a capital of over \$7,000, but up to that sum the data shows considerable advantage for the tenants as compared with men with an equal capital who own their farms. This is because the renter farms are larger than the corresponding owner farms. The tenant with his money used as working capital can conduct a larger business than he would be able to do if the same capital were divided between land and working capital.

The survey shows that the investment on share-rented tenant farms averages nearly \$3,000 more than on owned farms. The acreage value is about the same. There is no great variation in the distribution of capital on these farms from that on the owned farms.

The landlord shares a part of the live stock investment on all share-rented farms. A comparison of the yields upon owned and share-rented farms shows only a slight advantage to the share-rented farms, the cash-rented farms being the lowest producers.

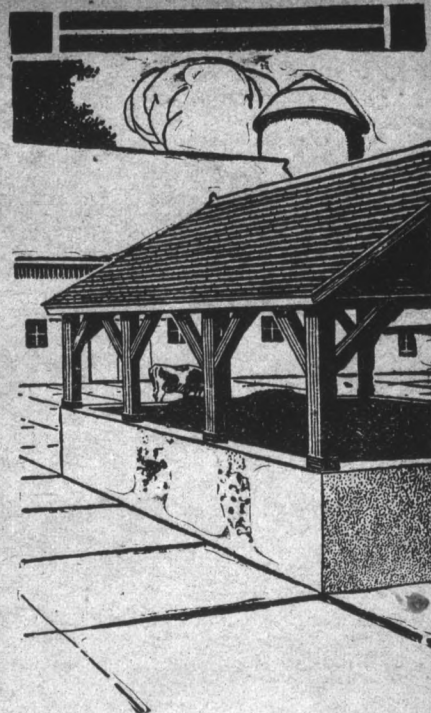
Dairy cows are the most important kind of live stock on the average Lenawee county farm. Hogs are second and horses third. An average of eight cows is kept per farm, or 38.7 per cent of the total animal units; brood sows average over two per cent; other hogs 17, and all kinds together 18. Horses constitute over fifteen per cent, sheep averaging 11.5 per cent, and young dairy stock six per cent. It was found that the average farm had a flock of poultry averaging 115 head.

Taking an average of 300 owner and 153 tenant farms, dairy products bring the farmers the largest income. Hogs rank second, wheat third, with poultry products fourth. In fact, dairy products brought nearly one-third of the total receipts of the 453 farms studied.

The survey also shows that the size of the business conducted is a very important factor in determining the income of the average farm. Unless there is a reasonably large volume of business, there is not sufficient foundation for a satisfactory income. A large business when properly conducted, gives opportunity for securing large returns, while, in a similar manner, if inefficiently managed, a large farm may result in heavy losses.

In the majority of sections such as Lenawee county, where the general type of farming prevails, there is a relation between the size of the farm and the net returns. Larger acreages up to certain limits permit better use of labor and implements. This means greater income for the owner than where a small farm is handled intensively, which demands heavier overhead expense for hired labor, while the larger acreage is used to more efficiently bring a higher acreage income.

In Lenawee county the survey shows that the average farm income of the 300 working owners advances rapidly and uniformly as the farms increase in acreage, while the average labor income increases rapidly until the farms reach 100 acres, remaining about the same for the next higher size and again increasing rapidly in the group of farms of about 160 acres. The sixty-six farms of sixty acres and less, and an average of forty-five acres each, made a clear profit of \$540, which after deducting five per cent interest on farm and equipment, leaves an average labor income of \$277. The 124 farms in the group of sixty-one to 100 acres, and an average of eighty-four acres, made an average farm income of \$922 and an average labor income



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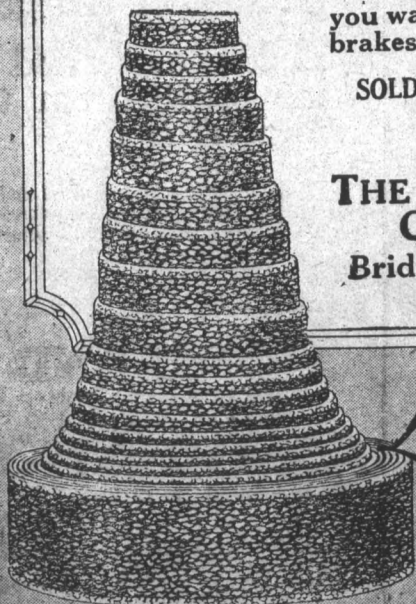
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of \$445. The seventy-two farms, 101 their land to oats, or an average of to 160 acres, averaging 129 acres, 17.5 of the total. Oats are a low profit made an average farm income of returning crop, and this same land \$1,172, and an average labor income might better be devoted to some acreage bringing better returns. The report recommends that wheat and oats be used to secure the clover stand, and that the combined acreage of the two crops be about equal to that of the hay acreage.

This goes to show that the large farms are yielding the greatest labor incomes for their owners and operators, but that these require very good management, is obvious. The greater the acreage the greater the expenses; nevertheless, the operating expense per acre, as well as the expense for upkeep and repairs are less per acre on the large than on the small farm. It is here again that we see that the size of the business becomes a deciding factor in the efficient and profitable management of the farm.

There is no other one factor of such great importance and none having so direct a bearing upon labor income as the income per cow kept, on farms devoted to dairying as the leading business. This fact stands out in all the reports of the Office of Farm Management. In the Chester County Pennsylvania, survey, the income per cow was shown definitely to be one of the most important factors of success on the dairy farms of that section. The information gathered in Lenawee county show that the labor income on dairy farms of that section bear a direct relation to income per cow.

Considering the owner-operated farms, the thirty-eight farms with average receipts of \$29 per cow made an average labor income of \$245 per farm, the thirty-seven farms with receipts ranging from \$40 to \$50, and averaging \$46 per cow, made an average labor income of \$361; the thirty-five farms with average receipts of \$56 per cow made an average labor income of \$401; the thirty-seven farms with average receipts of \$65 per cow made an average labor income of \$542; the forty-one farms having average receipts of \$79 per cow made an average labor income of \$915; while the twenty-four farms with average receipts of \$105 per cow made an average labor income of \$1,053. This shows a constant increase in labor income when the average receipts per cow increase.

Lenawee county results bring home the fact that the farmers have not been quick enough to see the vital necessity of cow-testing associations. The most profitable line of improvement for these farmers, according to the figures shown, would be keeping dairy records of individual production, followed by the elimination of the unprofitable cows. The report shows that one-fourth of the dairy farms in this county keep cows giving less than \$50 income. The herds should be systematically bred upward, since it has been demonstrated that the production per cow is the very essential factor in dairy profits.

The experts discovered that each year from seventy-five to 100 cars of corn are being distributed annually from Adrian alone, with a like percentage for other centers. Although Lenawee county farmers are located on the edge of the world's great corn belt, they are devoting but 29.5 per cent of their total cultivated area to corn. The experts report that this percentage should be increased as high as fifty per cent, or sufficiently to meet farm requirements without the necessity of importing corn into a corn-growing county. This would be a step in the right direction toward placing the farms upon a more profitable foundation.

The reports also show that on the average, Lenawee county farmers are devoting too great a percentage of

the following system of rotation is recommended to replace those now in use in Lenawee county:

First year, corn; second year, corn; third year, oats and barley; fourth year, wheat; fifth year, hay; five years or more on separate field, alfalfa.

This system permits approximately forty per cent of the rotation area to be in corn, which is the percentage most desirable. Oats and barley occupy about twenty per cent of the rotation area, occupying the same field, being varied according to the individual farm needs. Wheat is about twenty per cent of the rotation area, and hay about twenty per cent, the extra forage required being supplied by the alfalfa stock.

The part that cash crops play in any farming venture is important, whether sold direct or through live stock. The price of crops and of live stock controls the method the farmer follows. When hogs are high and corn cheap, corn is sold through the hog; when corn is high and hogs cheap, corn is sold direct. This means that some farmers carry the plan to such extremes that they almost ruin their land for need of fertilizer. It has been found that the man who sticks to live stock feeding for twenty years will make more real profit than the man who follows the silver dollars. But this does not mean that the farmer should not have surplus crops to sell. The successful tiller of the soil is able to judge for himself the better method.

CULL BEANS FOR FEEDING.

I would like some information concerning the feeding of cull beans to breeding ewes. I have 88 head of ewes, fair sized, largely Shropshires, with a sprinkling of Merino or western blood. Owing to short pasture these ewes went into winter in thin condition, and I have been unable to buy any clover hay without shipping some distance, which made it prohibitive. I have been feeding about the maximum of good ensilage (no grain in it) for which they were always hungry. Some outside grazing, and browse most of the time, what No. 1 marsh hay they wanted to pick at, and a small allowance of mixed oats, bran and oil meal for concentrates. These feeds are so expensive, what part of them can I substitute with beans? Ewes lamb the last of March and I want to feed them a gaining ration until grass is good.

G. W. M.

Cull beans may prove an economical source of protein but care must be taken not to feed them in excessive quantities to breeding ewes. It is my judgment that you would find it more profitable and economical to feed oats and oil meal to your ewes, than to buy cull beans at prevailing prices. In case you have cull beans at hand, you may feed a grain ration made up of one-fourth cull beans and three-fourths oats and bran.

At present prices there is no cheaper grain feed for breeding ewes than oats. They not only furnish protein at a reasonable cost, but they possess certain stimulating qualities that are very desirable for breeding animals of all ages. A little oil meal along with the oats will help out the protein content of the ration and is very desirable for a few weeks before lambing time. A little succulent food, such as silage or roots, will enable the ewes to make good use of the grain feeds in the ration.

W. M. K.

The Grasshopper a Limiting Factor

—By Don B. Whelan

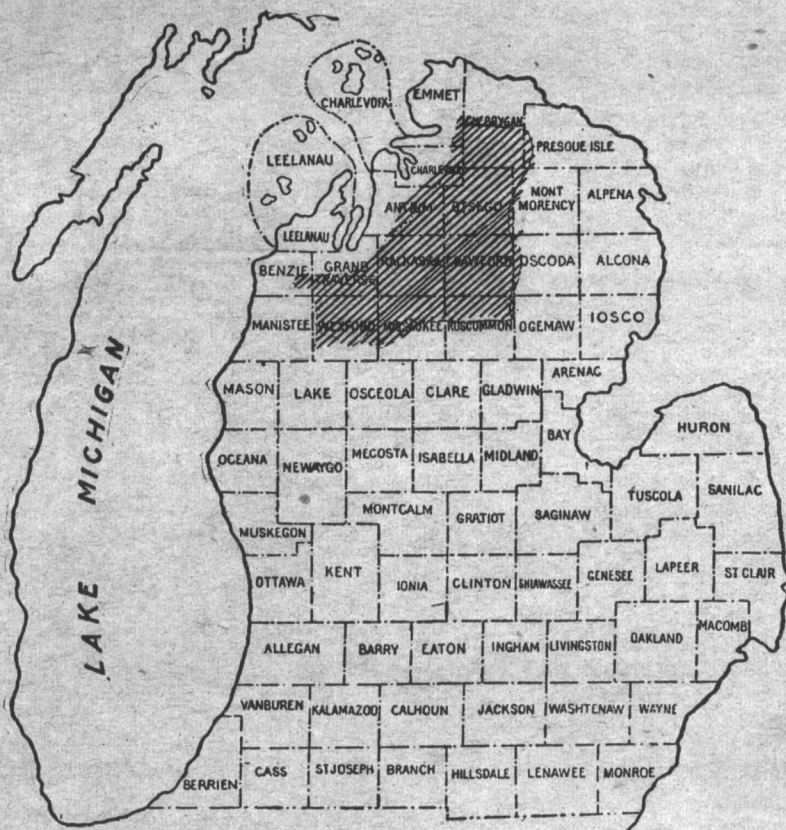
GRASSHOPPERS have, from time to time, become so abundant that they have been a real scourge to the part of the country visited. We read of their existence in the early writings of the Egyptians, Greeks, and Hebrews. But more recently our grandfathers witnessed their ravages on the western plains, between the years 1870-1880, when great swarms of grasshoppers swooped down from their breeding grounds and destroyed practically all of the cultivated crops over vast areas of country. During the past three years the grasshoppers have been doing quite a little damage in the northern part of this state and each year they have wrought greater havoc than the preceding one. The

their regular food, during the dry season, will cause them to satisfy their hunger on the cultivated crops.

Manner of Injury.

Grasshoppers, both young and old, injure crops by gnawing and devouring almost every green thing in sight. The writer has known them to eat the leaves from peach trees and then strip the flesh from the ripening fruit leaving just the pits hanging on the trees. Even the bark on the tender twigs is eaten by these ravenous insects, which have been known to gnaw the handles of pitchforks, hoes, and rakes, in order to secure the salt left upon them by the perspiring hands of the farmer.

Twenty acres of young apple trees



Section of Michigan Ravaged by Grasshoppers in 1918.

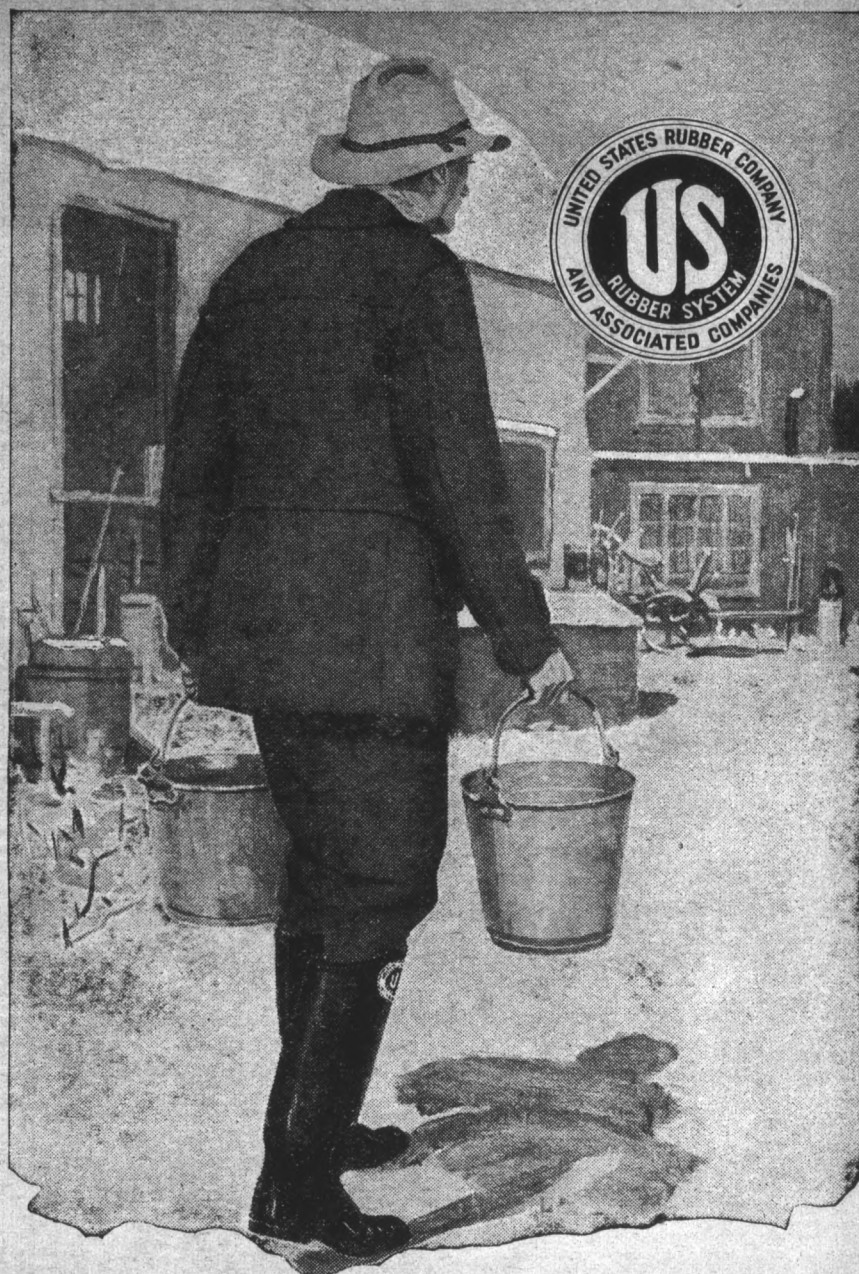
greatest damage has been done to clover, oats, corn, buckwheat and even the vegetables of the garden, while even trees have not been immune from destruction. The species doing the most damage, known as the Lesser Migratory Locust, is widely distributed in the United States and parts of Canada and Mexico. This creature is a yellowish insect, having its legs partly tinged with a bright reddish hue. Its back is brown and the hind wings are colorless. This insect with a few related species did a lot of damage in the state last summer. There were reports of damage from various parts of the state but the worst destruction occurred in the north central part of the lower peninsula including all or part of the following counties: Emmett, Cheboygan, Presque Isle, Charlevoix, Antrim, Otsego, Benzie, Grand Traverse, Kalkaska, Crawford, Wexford, Missaukee and Roscommon.

Favorable Conditions for Grasshoppers.

It is generally believed that where two dry summers occur in succession, the second one usually produces serious outbreaks of grasshoppers. But, whether or not this is true, there is ample evidence to show that such weather is more favorable for the successful hatching of the eggs and the development of the young 'hoppers. On the other hand, cool wet weather is usually unfavorable and grasshoppers have been known to die in large numbers from disease when such weather prevails. If the soil, where the eggs are laid, is undisturbed it will aid them to come out at the proper time with the least fatalities. The lack of

were stripped of their foliage and eventually died three summers ago in Cheboygan county. Clover had been planted as a cover crop and the 'hoppers were having a feast on it at the time it was cut. Then they flew to the only remaining green food, the leaves on the apple trees. Not only were the leaves stripped but the fruit was attacked and large irregular holes eaten to the core. About the same thing happened this past summer in Benzie county. Any number of cases have been reported of grasshoppers eating the silk off of forming ears of corn. In still other localities they didn't stop with the silk but ate the leaves, stalk and all. In speaking of the work of the grasshoppers, in one part of the state, one county agent said, "Our farmers have been teased with frost and drought to a hitherto unknown extent but the thing that caused them the greatest loss is the grasshopper. I have never seen such a sight as this year. Oat and rye fields have been literally decapitated, and the straw cut with mowers for bedding. Cabbages, onions, rutabagas, beans, peas, etc., have been eaten from the face of the earth until the ground stood so bare that a person would think that there had nothing been planted on it. I have seen acres of grasshoppers so thick on the ground that, if they would stay still, you could not put the end of your finger on the ground without hitting one." This does not represent a picture of the entire grasshopper devastated district but it pretty well portrays what happened in many very widely separated communities during

(Continued on page 331).



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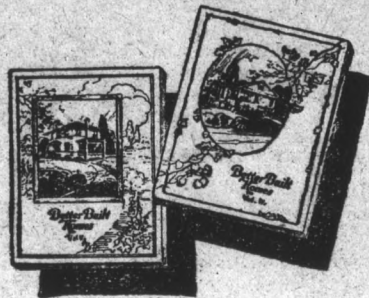
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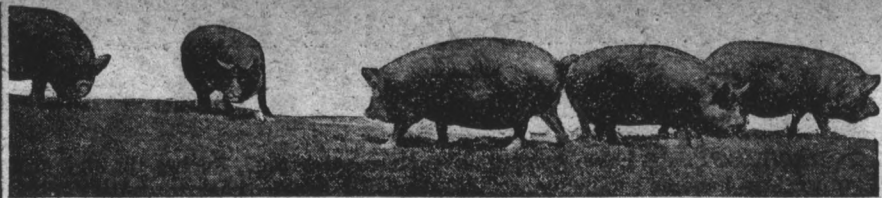
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Farmers Organize

By Milo D. Campbell

I AM presuming, though without any express notice, that the work of the Agricultural Advisory Commission has ended. The necessity for some mediator, for some guardian of the American farmer, however, is greater today than it has been at any time during the war.

There never has been an hour when the farmers of this country were more threatened, nor less prepared for defense than at this moment.

Let us briefly review some of the conditions that surround them:

1. Labor is thoroughly organized in the cities, and is demanding a continuance of war-time wages with but forty-four hours work each week. This means a contagion of like conditions on farms, or a migration of farm labor to the cities.

2. The dense ignorance of the consuming public upon the actual cost of production of farm crops, resulting in the prevailing general sentiment that the farmer is a greedy profiteer.

3. The great dissimilarity in wages paid in this and other countries for farm labor. The pay for farm help in this country being from twice to four times as much as in countries with whom our surplus must compete.

4. The lack of organization among farmers, and the lack of federation among the organizations that do exist make them the easy prey of politicians and of the interests.

5. The increasing cheapness of money that has absorbed much of what has seemed an increase of price for farm produce.

6. The labor of wife, children and over hours of farmer and hired men, that have gone into farm productions and for which in pre-war years no charge has been made. These resulted in low prices, far below actual cost had any estimate been made of them.

7. The depleted fertility of our soil, owing to the extra cropping of fields to supply food during the last three years. Commercial fertilizers have been out of consideration, and ordinary rotation of crops quite forgotten.

8. The reluctance of returning soldiers to go back to the farms. The rewards are not promising, and the seclusion of farm life too great a change from the social and stirring life of camp and field.

9. The seemingly well saddled control over farm productions by the packers, wool combine, grain speculators and great food interests of the country.

10. The threats everywhere heard from politicians of the cities against farmers, who undertake to cooperate or combine in the matter of price for their produce. The use of anti-trust laws solely against farmers, while allowing the great manufacturing concerns, the big food interests and packers complete immunity.

11. The juggling of tariff laws, solely for the benefit of consumers, and without reference to the protection of farmers.

There is no limit to the nameless and multiplying difficulties ahead of the farmer. He sees land cheaper today than it was three years ago. He sees the papers filled with communications from city correspondents about the government's wheat pledge. The public press is well united that the government should stand by its promise to pay \$2.26 for the 1919 crop, but de-

plores generally that the farmer is to profit so much thereby.

It does not understand that the farmer will not profit. The press has not been shown this. It does not seem to know that the winter wheat has been planted with high cost seed, with high cost labor, and that the average crop of fourteen bushels per acre last year (a bumper year), would give the farmer no profit at \$2.26.

The great question now before the American farmer, is one of survival. His worst enemies are not bugs, blight and drouth, but they are politics, selfishness of controlling interests, his complete servility to the men who fix the price of his products. If I were to suggest some immediate and easy remedies that could be made effective, I would not seek to revolutionize anything. My first suggestion would be organization. This requires no change of religion or politics.

A. Join some farm organization. Join the one nearest home where you can attend and be a neighbor and a good fellow. The Grange, the Gleaners, the Farmers' Club, the Equity, the Union, the Milk Producers' Association. Join one or all of them if you can. Get into the game, and do not stand on the side lines and expect your neighbors to fight all the battles for you.

B. When you have become a member of any of these organizations, stand for some kind of federation of them that will call for united demands upon congress, upon legislatures, upon the Department of Agriculture, upon the President, for a square deal.

C. Abhor Bolshevism and the red flag. Take pride in the dignity and honor that belong to American Agriculture, and seek to do your bit in maintaining it, by enlisting in some organization of farmers.

If the farmers of America were thus organized, if they would become social equals instead of independent slaves, they would have no trouble in making known their righteous demands and in getting a quick hearing. Howling and baying at the moon will avail nothing.

CLOVER SEED SCARCE.

THERE is not enough red-clover seed to meet the demands upon that important legume as a restorer of soil fertility to American farms following the strain of war-time conditions—not enough, that is, unless the farmers practice economy and good judgment in its use. Both the carry-over and the current crop of red-clover seed appear to be below normal, while the need for seeding a large acreage to red clover in the middle and northern states is greater than for several years.

This information comes from the United States Department of Agriculture in a circular, "Crops and Live Stock Production in 1919," just issued from the office of the secretary. To make the available supply of clover seed go as far as possible, farmers are urged to follow the best methods practicable in seeding and to avoid undue risk of waste of seed by attempting to secure stands of red clover on lands unsuitable either in character or condition of this crop. In some cases, it is pointed out, alsike clover can be substituted successfully, especially on lands too wet or too acid for red clover.

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Dairy Feeding Problems

A SUBSTITUTE CROP FOR HAY.

Please advise me what crop to sow on ground where the new seeding failed. I would prefer some crop that would take the place of hay.

Gladwin Co.

C. H. D.

About the surest and best crop that can be grown as a substitute crop for hay is Canada field peas and oats mixed equal parts by weight and sown at the rate of two and one half bushels to the acre. Peas, if cured for hay when the pods are nicely formed, make just about as good a ration as clover hay and the cows like them. If we add some oats so as to help hold the peas up, then they can be harvested with a mowing machine as readily as clover hay. This crop should be cut when the oats are in the milk and the peas are just nicely podded, and cured and handled as you would clover hay. They ought to be sown just as early in the spring as you can prepare the land; the earlier the better, if soil conditions are right.

A good crop of millet makes a good fair substitute for hay. This can be sown as late as the latter part of June. Hungarian grass is the best variety. This should be sown thickly so that the plants will not grow too coarse and it should be cut when in blossom. Do not allow the seeds to form before cutting, and mature the same as hay.

Another plant that is coming into use in this climate is soy beans. They can be sown in drills or sown broadcast. Most people prefer to plant them in drills twenty-eight inches apart and cultivate, then when the pods are nicely formed they can be cut for hay and cured the same as clover hay, or you can let them ripen and save the seed for grain and the straw then makes a pretty good substitute for hay.

C. C. L.

GROWING CALVES WITHOUT MILK.

I have seven calves that I bought, from two weeks' to two months old. They were bought of neighbors when about four days' old, and I am trying to raise them without skim-milk. I only have, say, about two gallons of milk a day to feed them. I have tried feeding ground oats with hulls sifted out, have fed it dry, and also have fed it cooked, adding salt, but it scoured the calves so badly that I quit that and bought 25 pounds of calf meal and have fed it according to directions, but the calves seem to get thinner and if I try to increase so the calves will pick up, that scours them. Three of these calves are two months old and they eat clover hay and grain, but stay thin, and are pot-bellied, and if I try to crowd them they get scoured. Is there any feed that I could buy and feed and save the calves?

Gratiot Co.

F. E. N.

It is certainly a difficult task to grow good calves without any milk. Milk is the natural food for young animals. It has been done, and it can be done, but they do not grow as well, especially at first, and you need not expect that your calves are going to keep as fat and slick as they would on a diet of milk or part milk. A real young calf ought to have some milk. It is absolutely essential. It must have some milk until it gets large enough so that it can eat clover hay.

Dr. McCollum has proved that certain vitamins essential to animal life are found only in the butter-fat of milk and the green leaves of plants, consequently the calf should have some milk containing a little butter-fat—skim-milk will do because this contains a small amount of butter-fat,

but whole milk is better for the young calf. After the calf gets old enough so that it can eat some clover hay then it gets vitamins from the green leaves of this plant and can get along much better.

The Wisconsin Experiment Station has made some quite elaborate experiments in growing calves without milk. They have found that a mixture of many different grains produce better results than any one grain alone. For instance, making a combination of ground oats, ground wheat, barley, corn, wheat middlings, oil meal, gluten meal, in fact, as many different grains as you can get, mixed together, give the best results. When the calf is quite young it is better to make a porridge by boiling this mixture of grains, leaving it in the form of a rather thin porridge so that the calf can drink it readily. If your grain ration was cooked and fed in the form of porridge, I don't believe you would have as much trouble about digestion as you are now having.

In an early day people made hay tea for calves, that is, they actually boiled the hay and fed them this tea. Here, you see, they would get the vitamins from the green leaves which would in a large measure, take the place of milk. Young calves ought to have new milk for the first two weeks of their lives, then they can gradually be weaned from new milk to skim-milk, and at three or four weeks of age you can take the skim-milk away from them by substituting this combination of grains and hay, or any other dry forage that they will consume, then gradually teach them to eat whole grain, like oats and corn, and give this to them extra besides their porridge.

C. C. L.

OATS AND BARLEY FOR GRAIN RATION.

I am feeding silage, clover hay and straw for rough feed, and oats and barley for grain. How could I feed to get more milk?

Montcalm Co.

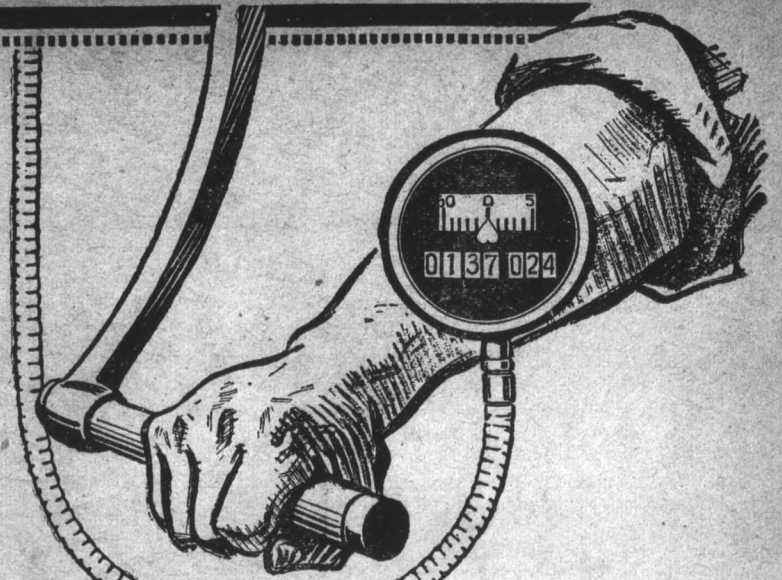
R. B.

It would be impossible to furnish a sufficient amount of protein with barley and oats for grain and corn silage, clover hay and straw for roughage, unless you fed a sufficient amount so that there would be a waste of carbohydrates. Consequently, it would pay to purchase oil meal or cottonseed meal or gluten feed as a part of the grain ration because these feeds are much richer in protein than barley or oats.

I would suggest that you mix oats, barley and bran equal parts by weight, that is, one hundred pounds of ground oats, one hundred pounds of ground barley and one hundred pounds of bran and then feed the cows two pounds of cottonseed meal or two pounds of oil meal a day and a sufficient amount of the oat, barley and bran mixture to give each cow a pound of grain per day for every three pounds of milk which she produces in a day. I am confident that this added amount of protein will so improve your ration that you will get better results.

C. C. L.

A calf objects in a hurry to taking its dinner from a soiled udder. Is it reasonable to suppose that conditions are better for supplying the proper food for man. If the cattle are on pasture, little grooming, save this finishing touch, will be needed. But if stabled, an abundance of bedding is not only a luxury both to the stock and their owner, but it will result in the conservation of fertility.



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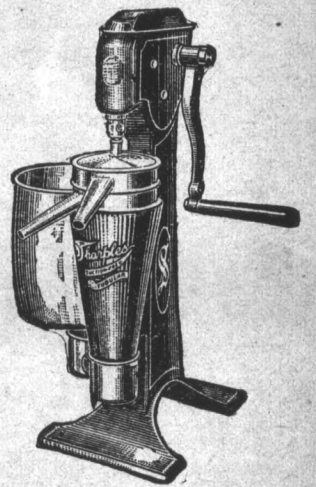
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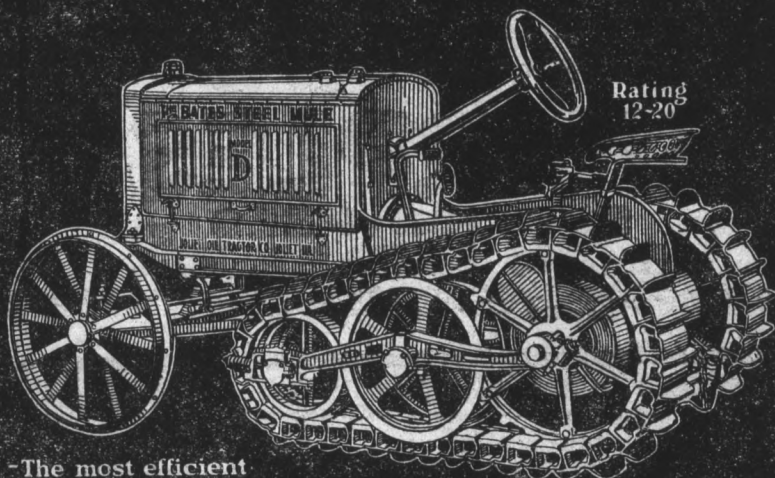
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Securing Farm Loans

THE Federal Farm Loan Act was passed two years ago by congress for the benefit of the farmer, who is desirous of conducting his farm on a business basis. The farmer is a business man, but up to this time he has not had the same facilities for procuring credits as other business men. The very nature of farming makes it necessary that a farmer be given credit extending over a long period of years, and as a rule local banks are not willing to make long-time loans. The loans made by the Federal Land Bank are made for such a length of time as to cut out worries and uncertainties connected with the customary short-term loans.

The farmers of Michigan are served by the Federal Land Bank at St. Paul. A loan made by this bank practically never matures because the borrower pays a small portion on the principal every time he pays his interest. These small payments will pay off the entire sum in thirty-four and one-half years, but the farmer has the privilege of paying back his loan at any time he wishes.

It is comparatively easy for the farmer to get a government loan. He has only to become a member of the National Farm Loan Association. Should there be no National Farm Loan Association already organized in your territory you will find your county agent very willing to assist you in

getting one started. The Federal Land Bank of St. Paul is anxious to aid any group of farmers in organizing a loan association, and it will furnish all of the forms and blanks necessary, together with the services of an organizer who will come to your county and explain in detail the method of operation of the farm loan system.

The question is often asked as to whether one borrower is liable for any other borrower. Each man is liable and responsible for his own loan only. Each borrower is required to buy stock in the local association to the extent of five per cent of his loan. If the association should become insolvent he would become liable for this five per cent. The money to pay for this stock can be borrowed from the land banks and is returned to the farmer in full when his loan is paid off and it will bear dividends. The cost of securing a government loan is comparatively nothing and it costs but very little to carry the loan along. The rate of interest is five and one-half per cent. On a \$1000 loan the semi-annual payments are \$32.50, and these payments will entirely pay off the loan by the end of thirty-four and one-half years. These payments are the same that the farmers are now paying in many instances simply as interest, but by taking out a loan from the Federal Land Bank they will completely pay his loan off.

Farmers Using More Trucks

APPARENTLY, from reports made to the Department of Agriculture, the farmers throughout the country are using the motor truck even where they could use the railroad, because of the quicker and better service obtained.

The motor truck is used particularly for live stock, but a lot of freight of other kinds is being transported.

The department says motor truck companies have been formed in many towns and cities within a radius of fifty miles of Omaha to meet the demands of farmers for such service. These companies are developing not only the live stock trade, but also a "back haul" trade of groceries, merchandise and general freight, such as feeds, fertilizers and farm supplies. On one morning this winter between 5:30 and 8:00 o'clock forty truckloads of live stock were delivered at the Omaha yards, and of this number nineteen of the vehicles were owned by farmers.

Profitable Despite High Rates.

The charges for hauling stock by motor vary with the distance. Some companies charge a flat rate of twenty-five cents a hundred pounds, and add one cent per hundred pounds per mile. Other firms charge by the load, from \$10 to \$15 for the trip, depending on the distance and the number of animals carried. Although the rates are considered extremely high, as the truck hauler charges fifty to sixty cents a hundred weight, compared with a twelve-to-fifteen-cent freight rate, still the farmers seem to find the motor truck method profitable.

A standard two-ton truck will carry about twenty head of hogs. The floor space when small stock, such as sheep and hogs are transported is increased by double-decking. As a rule, the motor express companies operate trucks of four or five tons capacity, while the vehicles owned by farmers usually carry one or two tons.

Figures indicate how the motor truck delivery of live stock at the South Omaha yards has increased in the last two years. In the first nine months of 1917 there were only 52,129 hogs in the Omaha "drive in." There was an increase of ninety per cent in the same period in 1918, 142,220 hogs

being delivered by truck. The cattle "drive in" from July to September, inclusive, 1917, was 12,189 head, and in the same period in 1918, 17,681 cattle.

Hogs Directly from Farms.

The Cincinnati, Indianapolis and Louisville markets receive a large part of their hogs directly from the farms by motor trucks.

The custom in the Cincinnati Market is to charge a flat rate of from \$15 to \$30 a trip for the use of the large truck to convey stock from fifteen to forty miles. A haul of forty-three miles was made in four hours. The cargo was hogs. The shrinkage was from four to six pounds apiece—not much compared with the former loss.

At Kansas City a marked increase in the local "drive in" has resulted largely from the increased use of motor trucks. During the first eight months of 1918, 72,887 hogs were handled by motor truck and wagon, an increase of 21,505 over the same period in 1917.

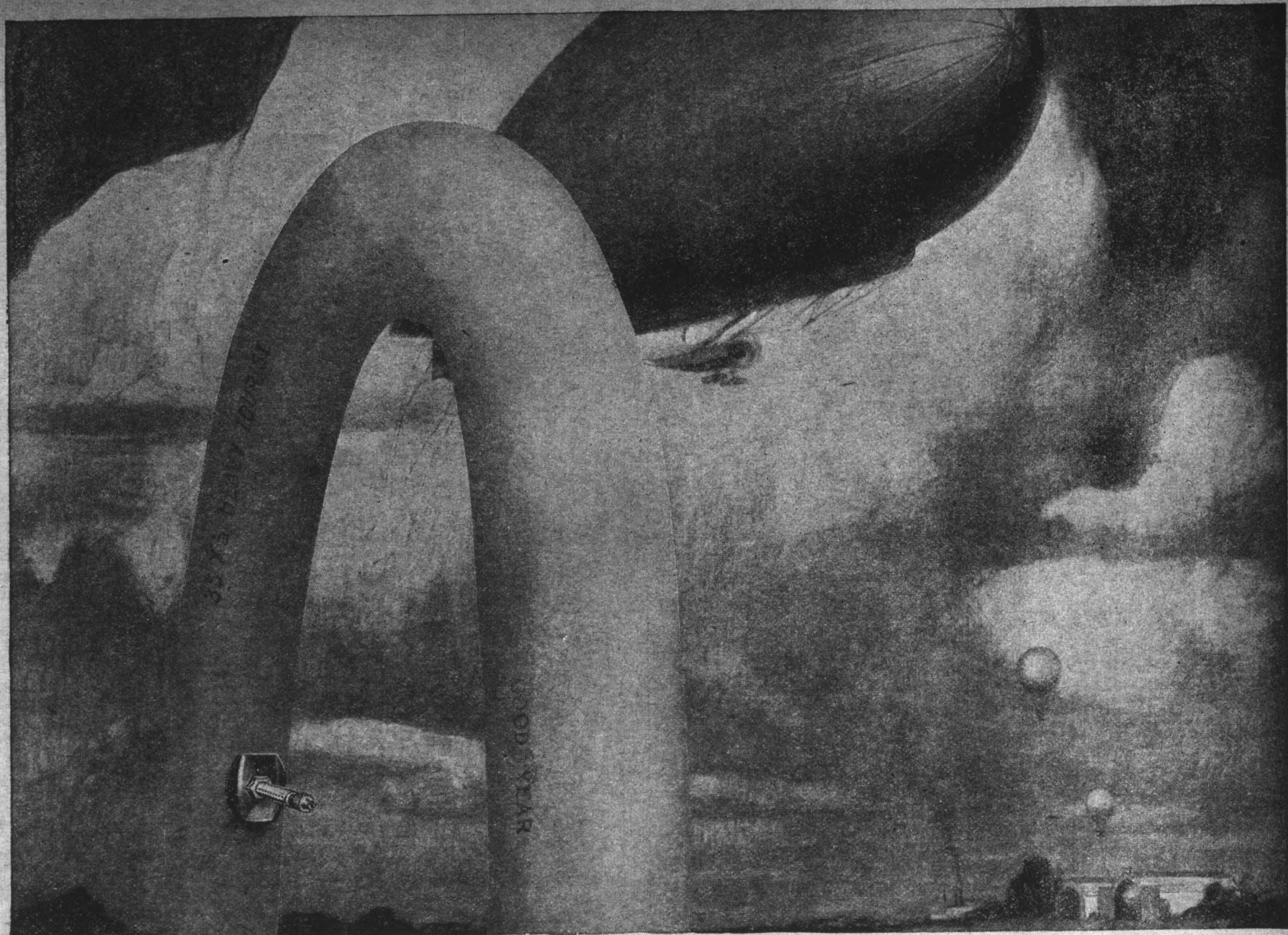
Denver notes an increase of 223 per cent in sheep, twelve per cent in hogs and thirteen per cent in cattle in the first eight months of 1918, compared with 1917.

At St. Joseph, Mo., the "drive in" during the last year has more than doubled through the use of trucks. In a single day at St. Joseph 1,400 hogs, 200 cattle and a considerable number of sheep were brought to the market in 190 motor trucks.

With good, permanent roads on the boom in all parts of the country, and transportation by truck more satisfactory in every way, the department investigators believe the future promises cheap and efficient marketing of stock in power vehicles.

Shrinkage Less, Sales Quicker.

Two savings which are claimed for the motor truck are: One, the animals are not en route long enough to lose much weight. They are pretty well cared for on the journey and are delivered in the yards in good condition. Two, the farmer is able to sell the day he decides to market his stock. He does not have to take chances as formerly in getting stock cars from the railroad, and probably be held up a day or two, or three, and "miss the market."



BOTH ARE GOODYEAR TUBES

GOODYEAR'S ability to build tubes that last long and hold air unfailingly is dramatically related to the fact that Goodyear is also a successful manufacturer of balloons and dirigibles.

There is sound basis for such assertion. Both tubes and gas bags present problems of inflation.

For nine years, Goodyear has pioneered the furthering of aeronautics in this country.

In constructing these giant gas bags the problem of inflation is exceedingly complex.

For the gas of the balloon is more elusive than air; harder to hold within rubber.

But it has been conclusively established that stout, light fabric, impregnated with rubber and *built up layer-upon-layer*, forms the most practical container for this elusive gas.

Is it not quite logical, therefore, that this same *built-up* principle of construction should be successfully applied to tubes whose sole function it is to hold air?

Goodyear Heavy Tourist Tubes are built on this principle and their valve-patch is *vulcanized-in*. Built up as they are with several plies of pure gum, they are the best air containers we know of.

There are thousands of passenger-car owners who use Heavy Tourist Tubes exclusively, gladly paying the slightly added cost in the firm belief that they thus protect and get more mileage from their tires.

More Goodyear Tubes are used than any other kind.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR
AKRON

GALLOWAY IMPLEMENTS
THE HOUSE THAT BUILT THE HOUSE WITH THE CUTTING

1919 Book
Lowest Prices

SENT FREE!
— Write Today!

For 1919 Galloway is making greater offers than ever before. With the war over and Peace here, the American farmer must feed the world. My low, direct to you factory prices on highest grade implements give you wholesale savings. Don't pay two and three prices for your farm machinery.

BUY DIRECT FROM THE FACTORY
Get your implements straight from Galloway's factories. I cut out all waste and lost prices by selling direct. One million satisfied customers use Galloway implements and save big money. You can do the same. Write today for Galloway's 1919 book.

NEW 1919 MODEL SEPARATORS

1919 model is ready. Have all the latest and best improvements. Over three hundred thousand in use. Thousands sold annually. Each one sells from one to a dozen more. Is closer skimming, easier cleaned and more sanitary than any other separator built. All parts run in constant spray of oil. No sharp edges to break up globules. Four good sizes. 375 lbs.—500 lbs.—750 lbs.—950 lbs.—at four low prices.

Latest SPREADERS
1919 Model



The best ever for 1919. Has 11 great exclusive spreader improvements that put the Galloway in a class by itself. Steel-beater, wide spreading V-rake—automatic stop—clean out push board—roller feed—chain drive—endless apron with force feed—cut under front wheels, short turn—is extra light draft—handles more manure for less cost on man, team, and pocket book than any other spreader built.

Magneto EQUIPPED 1919 ENGINES

Galloway's 1919 new model engines are more powerful, more economical than ever. 2 1/2 to 12 H.P. Portable or stationary. Has valves in head, no lost energy. Big bore, long stroke and heavy weight. Special built-in magneto supplies blue hot spark, needs no batteries. Easily started, no cranking, cylinder and water not frostproof. Burns any fuel. Heavy or light work models for the lightest to the heaviest, toughest job on your farm.

BOOK FREE—Write Today!

Get your copy of Galloway's money saving book for 1919. Buy all your farm supplies at wholesale—direct from Galloway's factories. Use this book as your buying guide. We ship from our 1200-acre factory at Waterloo or big warehouse stocks in Chicago, Kansas City, Council Bluffs, St. Paul and Winnipeg. Write today to **William Galloway Company, 187 Galloway Station, WATERLOO, IOWA.**



OTTAWA KEROSENE ENGINES

Start Easy in any weather. Pull steady. Carry big overload. All sizes and styles. 1 1/2 H.P. to 22 H.P. 90 Days' Trial. Money Back Guarantee. Prompt shipment.

Low Prices Write for present money saving prices and Free Book, telling all you want to know about engines. Write today. 1363 King Street, OTTAWA MFG. CO. OTTAWA, KANS.

CORONA WOOL FAT COMPOUND

is a wonderful healing remedy unlike anything you ever used. For Galled and Sore Shoulders, Barb Wire Cuts, Wounds, Scratches, Split Hoofs, Sore Teats on Cows, it has no equal. I want you to try this remedy at my expense. I will send you a big **Sample Box FREE**

It won't cost you a cent or place you under any obligations—just send me your name and address. It's worth its weight in gold to any farmer or dairyman. Write. C. G. PHILLIPS, Pres., THE CORONA MFG. CO., 13 Corona Block, Kanton, O.

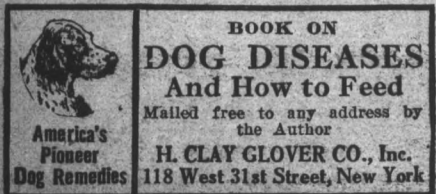


BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc.
118 West 31st Street, New York

America's Pioneer Dog Remedies



Milk Problems

By R. C. REED

WE believe that the first consideration to both the milk producer and the consumer, should be the moral obligation. Yet how few of our people ever think that there is any moral obligation connected with the milk business. According to the investigation of the best scientists and experimenters the well-being of the American people depends more upon a large consumption of dairy products than upon any other food product in use at the present time. To maintain the position as the greatest people of the greatest nation that the world has ever known we dairymen must acquit ourselves like true noblemen.

In order to accomplish this purpose we must leave the rut that has so long been a hinderance to better production and larger consumption. The reports of the boards of health concerning infant mortality show that for every American soldier lost on the battle front, eleven American children die in their homes as a result of a lack of their bodies being properly nourished by the use of milk. What a field—what an opportunity—what a mission is ours!

The Price.

What will furnish an adequate return is and must be a vital question, for every successful business must have in it two vital and fundamental principles! First, a compensatory price, and second, a confidence which permeates every part of the industry. The misguided effort to gain a price has often resulted in the destruction of the more important factor—confidence in the business.

Strikes may have been necessary in the days gone by, but not since the beginning and work of the Michigan Milk Producers' Association for we are now confronted with the facts that despite free and severe criticism by a part of our people, we look back to find that the Detroit price (which is and has been the backbone of the milk market of Michigan) is comparable to the price obtained in any other similar location. And we have avoided that most expensive factor in all business economy—the strike.

It is estimated by the Rural New Yorker that the recent strike of sixty thousand milk producers in the New York Dairymen's League cost in the neighborhood of six million dollars. This tremendous loss must, eventually, come out of the milk business and like the burdens of the recent war in Europe, these burdens must be borne by the parties participating. The milk business will suffer to this extent.

There is no question but that the producer should have control of his product and be in position to set the price for which he will sell it. The manufacturer of every other product does this and nobody objects. The dealer is not forced to buy at the seller's price.

Surplus.

We are confronted at the present time, by some of the distributors in the city of Detroit, with the claim of a serious surplus. How this surplus shall be cared for is a question up for immediate solution. Possibly before this reaches the reader, action will be taken by the Milk Commission, which convenes on February 24 at the Board of Commerce, Detroit, which will handle this question in a fair and impartial manner, as has this Commission the other questions that have come before it. Many of the locals in the Detroit area have requested that their share of the surplus should be kept by them. The unfortunate and unreliable features of this plan will at once present themselves to the thinking reader. If the milk producers of the Detroit area would establish some kind of a factory that might be available on any similar occasion in the years to come, I am

(Continued on page 355).

What the Famous MUELLER PIPELESS FURNACE

will do for you

Save 1/2 to 1/3 on fuel—and will burn anything, hard or soft coal, coke, wood, gas or lignite.

Heat every room in your house to a comfortable temperature. It is *guaranteed* to do this.

Promote health, by keeping the air moist and pure.

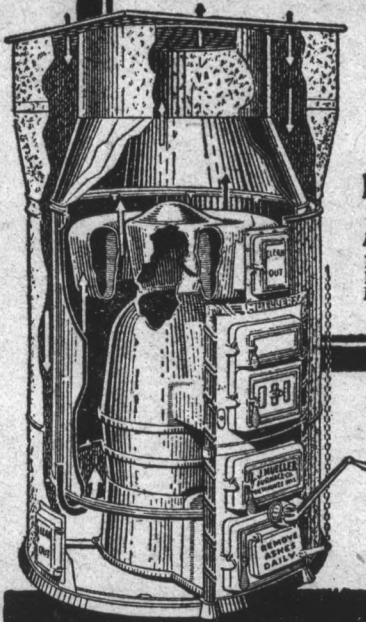
This remarkable performance is made possible only by the Mueller's exclusive features of design and construction, which are interestingly explained in the booklet "The Modern Method of Heating Your Home." We will gladly send you a copy free upon request, and give you the name of the nearest Mueller dealer.

L. J. MUELLER FURNACE CO.

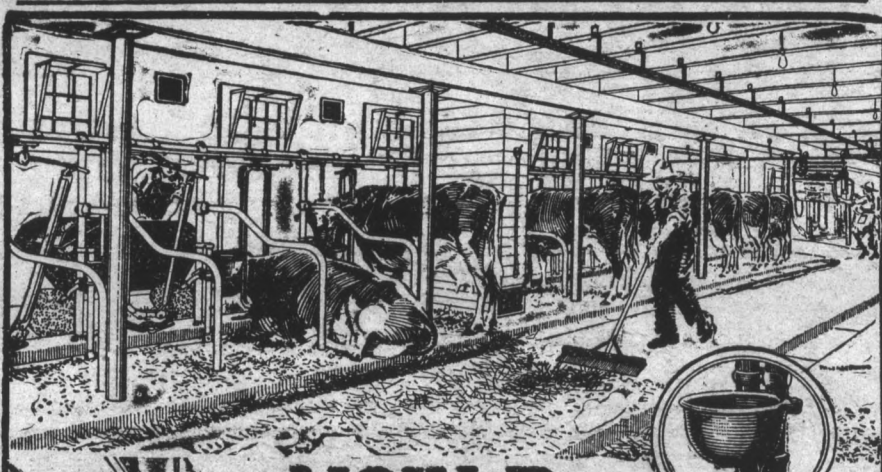
195 Reed Street Milwaukee, Wis.

Makers of Heating Systems of All Kinds Since 1857

Distributing points at Grand Rapids and Detroit, Mich; Toledo, Ohio; Pittsburgh, Lancaster and Philadelphia, Pa; Brooklyn and Buffalo, N. Y.



You can have the Mueller Pipeless Furnace installed easily and inexpensively. It is necessary only to set it in your cellar and cut a hole in the floor directly above for the register. No tearing up of walls for pipes. And if you have no cellar you can dig a small pit just large enough to set the Mueller in and provide operating room.



NOW Boys Do Men's Work—with James Barn Equipment

For James makes barn work easy. The task is not too great for children's strength. Carriers and trucks make a boy's job of cleaning barns and feeding cows. Drinking cups save time, make milk yields bigger, do away with bothersome tank heaters.

Carriers pay a profit of 25%—drinking cups 200%.

And so with other James equipment—stalls, stanchions, scrapers, steel pens, ventilators, bull staffs, swinging cranes.

"The James Way"—a FREE BOOK—tells all about inventions that save

labor, increase milk yields, improve cow health.

Also about barn planning, plank frames, ventilation, easy ways of putting in stalls, carriers and pens.

Write for book today; state number cows owned, and whether you intend building or remodeling.

James Mfg. Co. Ft. Atkinson, Wis., Elmira, N. Y.

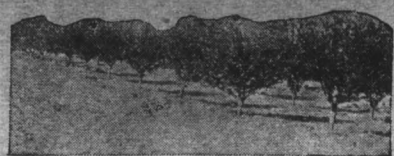
SEED OATS

Best Michigan northern oats, buy good seed and grow 80 to 100 bushel, per acre. Price 90c per bushel. Samples free. MAYERS PLANT NURSERY, Merrill, Mich.

OATS

Sensation 80-92 and 97 bus. per acre. Also early SEED CORN. Samples free. THEO. BURT & SONS, Melrose, Ohio.

WE WANT VETCH. SEND US SAMPLE. YOUNG-RANDOLPH SEED CO., Owosso, Mich.



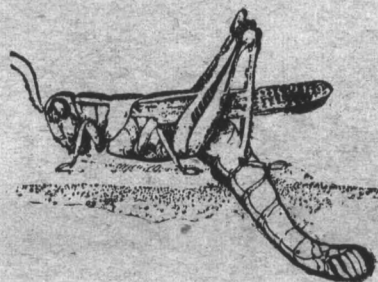
The Grasshopper a Limiting Factor

(Continued from page 325).

the past summer. A farmer in Otsego county had twenty-five acres of hay until the 'hoppers came along. After they had been there a short time he cut it and drew it all to the barn in a one-horse wagon. A neighbor of his had ten acres of Alexander oats that had just been inspected by Mr. Spragg of M. A. C., who said that they would yield close to thirty-five bushels to the acre. Shortly after, when the heads were turning, the grasshoppers flew in and "almost like a forest-fire" destroyed his oats. He managed to cut a few small bundles of straw but had no seed at all. He lost his original seed as well as the maturing crop which would have yielded well over three hundred bushels, and seed at that time was worth about seventy-five cents a bushel. Likewise his straw and the young seeding of clover was practically all destroyed. These acres were robbed of a much needed fertilizer and his plan of rotation was forcibly changed. Some farmers complained that the 'hoppers had eaten so much food that some of the cattle had to be sold. A local creamery reported that the receipts from milk were much less than usual from lack of food for the cows. One farmer reported that the grasshoppers had cleaned him out of \$5,000, while more than one county reported damage well over \$30,000 for the year, all laid up to that despot with the ungovernable appetite, the Lesser Migratory Locust.

Where Eggs Are Laid.

The grasshoppers lay their eggs in the ground during the fall of the year



and then die, egg-laying usually being completed about the middle of October. Some species seek out compact soil, more or less free from vegetation, in which to lay their eggs, while others deposit their eggs in bunches of grass. Such areas are chosen because they warm up rapidly in the morning and because the insect can get a firm foothold when boring a hole in the ground in which to deposit its egg-capsule. An area of a square foot has been found to contain more than five thousand eggs, while over one thousand have been discovered in a clump of grass not over two inches wide. The eggs hatch out during the last of May and the first part of June, the 'hoppers losing no time in starting to feed upon any nearby succulent food. When they first hatch they are nearly white but soon take on a darker appearance and begin hopping around. From forty to sixty days are required for them to reach maturity and get their wings. The length of time depending on the weather conditions and the amount of food obtainable. They grow by shedding their skin, which splits down the back, and then they crawl out of it and develop still further until the next molt. With the last molt they get their wings.

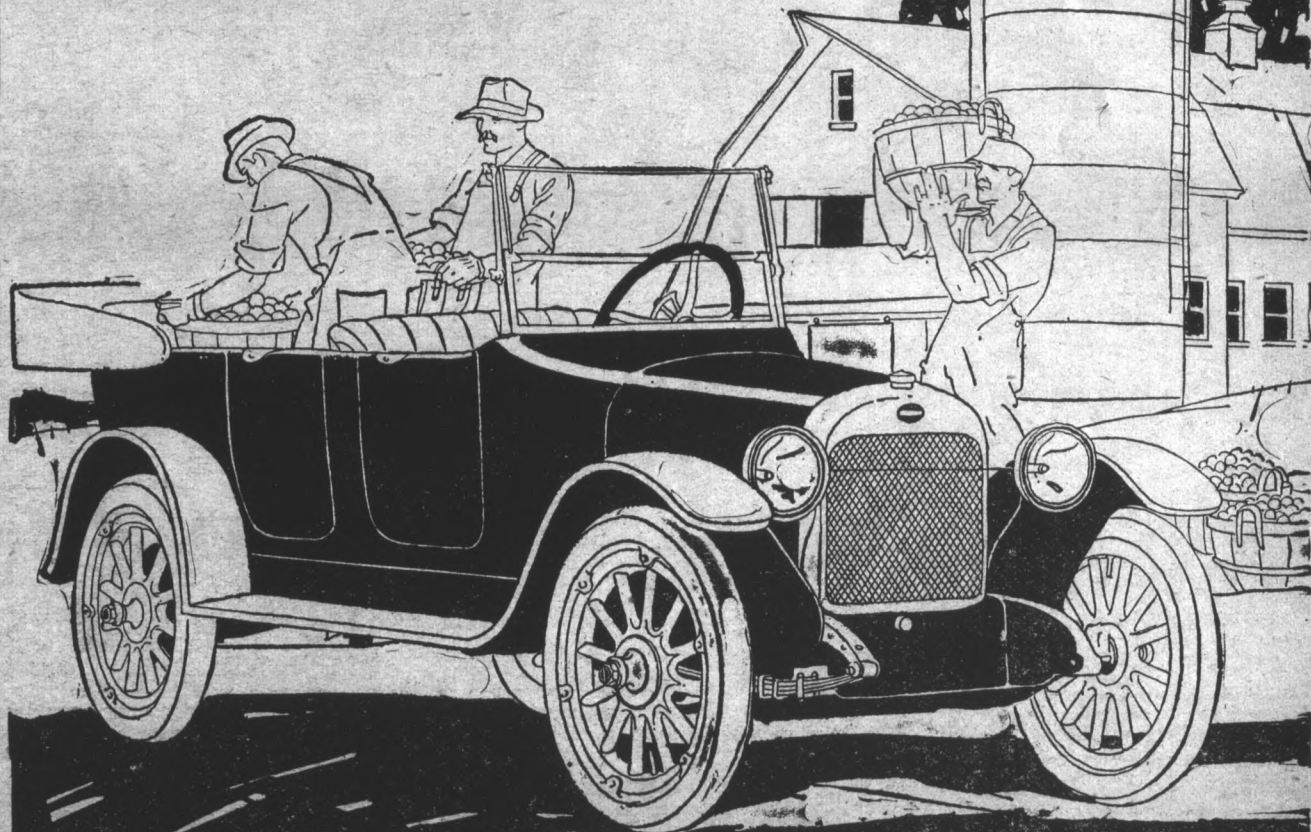
Heavy feeding does not always produce proportionate gains.

THE biggest reason why your car this year should be an Oakland Sensible Six is the Oakland Sensible Six itself. In design it is the most advanced example of the prevailing principle of high power and light weight construction. In value it represents an accomplishment possible only with Oakland's immense volume of production and its policy of concentrating all its energies upon a single chassis type. In performance it affords that rare combination of reliability and thrift which is the aim of truly efficient engineering. More than 100,000 Oakland Sensible Six cars are now in use. Everywhere, they are delivering the kind of service you have a right to expect from an exceptionally good automobile.

The Oakland Sensible Six Touring Car is unusually roomy and comfortable, having a full 106 inches of body room upon its sturdy and serviceable chassis. Powered with the famous overhead-valve Oakland Sensible Six 44-horsepower engine, it delivers owners mileages of from 18 to 25 per gallon of gasoline and from 8,000 to 12,000 on tires.

OAKLAND MOTOR CAR CO. Pontiac, Mich.

Touring Car, \$1075; Roadster, \$1075; Sedan, \$1630; Coupé, \$1650.
F.O.B. Pontiac, Mich. Additional for wire wheel equipment, \$75.00.



OAKLAND

SENSIBLE SIX

This Two-Fords-in-One-Device



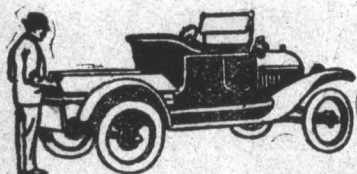
Remove Tonneau



Unfold Heath Duplex Delivery Body



In 60 Seconds You Have a Truck



Refold Heath Duplex Delivery Body

Replace Tonneau--In 60 Seconds You Have a Passenger Car



Pays Big Quick Profits

The Heath Duplex Folding Delivery Body is the liveliest, quickest selling, most practical device that was ever attached to a Ford car. It gives you the service of two cars out of *one* Ford—a *truck and a passenger car*. It sells on sight, in a large field of ready yield. Your only selling expense is the Heath Duplex Folding Delivery Body and what it costs to run your Ford car.

There is a universal demand for the Heath Duplex Folding Delivery Body, because practically every one of the two million or more Ford owners uses his car for delivery purposes either regularly or occasionally. There are a million or more owners of Ford cars waiting to have some one show them how profitably they can use the Heath-Duplex.

And the Heath Duplex is the only two-in-one exclusive change-a-Ford-to-a-truck patent that can be turned into a delivery car in **60 seconds**, and changed back again to a passenger car in the same time. It is the only patented device that allows the use of the original passenger body without change in its appearance or utility.

Any one handy with Tools can install the Heath Duplex. After the original installation is made, it requires no tools to make the change from passenger to truck or back again. Once sold it requires no service.

It is made and guaranteed by one of the strongest concerns in the automobile industry.

Every owner of a Ford touring car is your prospect. You do not have to be an automobile dealer or even have a store to sell the Heath-Duplex. All you need is your Ford touring car and all or part of your time. You can make big profits calling on Ford owners two or three hours a day.

We have an attractive factory-to-agent proposition with a liberal discount which will interest you immensely. Write today for particulars,

McCord Manufacturing Co., Inc.
Dept. No. 11, Detroit, Mich.

Heath Duplex \$57.50 F.O.B. Detroit
Makes a Ford a Truck or Passenger Car in 60 Seconds
Patented May 12th, 1908, December 19th, 1916, Reissued August 6th, 1918

WE ARE BUYERS

Of:

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SOY BEANS
COW PEAS
GIANT SPURRY
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CANE SEED

Mail samples to

S. M. IS BELL & CO.
Jackson, Michigan

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Tests conducted by the U.S. Bureau of Animal Industry at Laramie, Wyoming, demonstrated that sheep sheared with a machine not only produce more wool the first season, but grow more wool every successive year. Wool commands high prices. Get a Stewart No. 9 Ball Bearing Shearing Machine and make more money. Price \$14. Send \$2—pay balance on arrival. Write for catalog. **CHICAGO FLEXIBLE SHAFT COMPANY** Dept. B127, 12th St. and Central Ave., Chicago, Ill.

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Tag your stock—best and cheapest means of identification for Hogs, Sheep and Cattle. Name, address and number stamped on tags. Catalog mailed free on request.
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COLLIE PUPS

males only \$5. G. A. WIGENT, Watervliet, Mich.

American Fence

Full gauge wires—full weight—full length rolls. Superior quality galvanizing, proof against hardest weather conditions.

Send for our Special Book on Fencing. Dealers Everywhere

AMERICAN STEEL AND WIRE COMPANY

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FIELD SEEDS AT WHOLESALE PRICES

We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything guaranteed equal to samples or money refunded. Don't pay double profits on Grass Seed. Our seeds are sold subject to government test. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes and all Farm and Garden Seeds. Don't order until you write for big 116-page catalog. Free samples and special low prices on seeds you require. Will send free 60-page book on Growing Alfalfa to those who ask for it. Write at once, as we can save you money.
A. A. BERRY SEED CO., Box 231 Clarinda, Iowa



Save Half on Nursery Stock!

Buy Hardy, High-Grade Trees and Ornamentals Direct from Nursery. Save agent's commission. Big, new, handsome 1919 Catalog describes the best stock grown. Many specialties. All Guaranteed. Start an Orchard this year. Order early for spring planting. To be sure of spring supply write today—a postal will do. Catalog FREE.
CELERY CITY NURSERIES, Box 18 Kalamazoo, Michigan

Catalog FREE



CHANGE IN POTATO GRADES.

THE potato grades recommended by the Department of Agriculture and the United States Food Administration, on September 10, 1917, have been changed slightly. The revised grade specifications are stated below:

U. S. Grade No. 1.

This grade shall consist of sound potatoes of similar varietal characteristics, which are practically free (a) from dirt or other foreign matter, frost injury, sunburn, second growth, growth cracks, cuts, scab, blight, soft rot, dry rot and damage caused by disease, insects or mechanical or other means.

The diameter (b) of potatoes of the round varieties shall be not less than one and seven-eighths (1 $\frac{7}{8}$) inches, and of potatoes of the long varieties, one and three-fourths (1 $\frac{3}{4}$) inches.

In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, six per centum by weight of any such lot may be below the remaining requirements of this grade; but not more than one-third of such six per centum, that is to say, not more than two per centum by weight of the entire lot, may have the flesh injured by soft rot (d).

U. S. Grade No. 2.

This grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and soft rot, and which are free from serious damage (c) caused by sunburn, cuts, scab, blight, dry rot or other disease, insects or mechanical or other means.

The diameter (b) of potatoes in this grade shall be not less than one and one-half (1 $\frac{1}{2}$) inches.

In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and in addition, six per centum by weight of any such lot may be below the remaining requirements of this grade; but not more than one-third of such six per centum, that is to say not more than two per centum by weight of the entire lot, may have the flesh injured by soft rot (d).

Explanation.

(a) "Practically free" means that the appearance shall not be injured to an extent readily apparent upon casual examination of the lot, that any damage from the causes mentioned can be removed by the ordinary processes of paring without appreciable increase in waste over that which would occur if the potato were perfect. Loss of the outer skin (epidermis) only shall not be considered as an injury to the appearance.

(b) "Diameter" means the greatest dimension at right angles to the longitudinal axis.

(c) "Free from serious damage" means that any damage from the causes mentioned can be removed by the ordinary processes of paring without increase in waste of more than ten per centum by weight over that which would occur if potato were perfect.

(d) "Soft rot" means a soft, mushy condition of the tissues, from whatever cause.

There is no question in the minds of our up-to-date feeders that the skim-milk fed warm from the separator is of more value as a feed for young animals than the milk that is returned from the creamery where it is separated. This point alone would commend the use of a hand separator on many farms where the growing of young calves and pigs is considered a valuable appendage to the dairy.

Every Farm Home Should Have Plumbing



RESTFUL tub bath or shower after a hard day's work! That's a pleasure for every member of the family after "Standard" Plumbing Fixtures are installed. Easier, faster, more efficient work in the kitchen because of one of those splendid "Standard" one-piece sinks! That's what the housewife needs and deserves.

Wash-day tasks made lighter because of "Standard" enameled laundry tubs. There's another domestic convenience that every woman wants. Clean, sanitary washstands with running hot and cold water all the time; water closets indoors to prevent going outside in all kinds of weather. More of life's necessities, to say nothing of the luxury of it all, after plumbing is installed.

"Standard" Plumbing Fixtures

There's a "Standard" Plumbing Fixture for every use, representing a wide range of prices and styles for a modest or fine home; elaborate, or plain; within the limits of any

pocket-book and all representing the same fundamental quality and service that have made "Standard" Green and Gold labels familiar to users of plumbing everywhere.

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SAN ANTONIO.....212 LOSOYA
FORT WORTH.....828-830 MONROE
KANSAS CITY.....201 RIDGE ARCADE
SAN FRANCISCO.....149-55 BLUXOME
LOS ANGELES.....216-224 S. CENTRAL
DETROIT OFFICE.....HAMMOND BLDG.
CHICAGO OFFICE.....KARPEN BLDG.

The name "Standard" does represent the *standard* of plumbing values. A manufacturing experience covering 44 years with trade connections which make it possible for farm owners in all localities to get "Standard" Plumbing Fixtures without difficulty, give us the right to ask for your consideration when you build a new home or when you make the old one better by installing plumbing.

A well-illustrated catalogue, "Standard" Plumbing Fixtures for the Home", will be sent to you free on request. It shows many styles of all fixtures and will be of much help to you when you make your selection. Write for it today.

Standard Sanitary Mfg. Co.
Pittsburgh, Pa.

For "Standard" Farm Lighting Plants and Water Supply Systems, write nearest branch marked with a (*) in list at opposite corner.



The Saginaw Liberty Silo With the Cross-Truss

THE cross-truss makes possible the building of great trestles, high steel towers, modern bridge and roof trusses. In the Saginaw Liberty Silo we have applied the same principle of construction. The cross-truss ties and joins the Saginaw Liberty Silo together making it a tower of strength. So rigid is this silo that no anchoring cables are necessary.

Other features of the Saginaw Liberty Silo:

- Hollow wall—made of wood.
- Perfect silage fermentation next to such a wall.
- Dead air space between wood walls.
- Silage protected against freezing.
- No silo wall equals the smoothness of this wall.
- Silage packs of its own weight under such conditions.
- Easy and simple to erect—a rigid, solid, immovable structure.

Write today for more information. It's one of the four different types of silos called Saginaw—the name proves its superiority.

Ask for our stockman's calendar. Sent free. Write today—address Department No. 370

The McClure Company.
Cairo, Ill. Saginaw, Mich.

SAGINAW SILOS

Wood Steel-Built—Wood Stave—Wood Hollow-Wall—Masonry

LEARN AUCTIONEERING

at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught. Write today for free catalog. JONES NAT'L SCHOOL OF AUCTIONEERING, 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.



"TIX-TON MIX" with salt the year around keeps flock healthy and free from worms and ticks. Saves you big money—a \$1.00 sample box by parcel post will include 1 barrel of salt. Write for club offer—booklet on "Nature and Care of Sheep." PARSONS TIX-TON CO., Grand Ledge, Mich.

Equip Your Barn The West Bend Way

"West Bend" means time-saving, labor-saving, money-saving. It is the name that guarantees you efficiency, economy and satisfaction in fitting up your barn. West Bend Barn Equipment is steadily growing in popularity because it has so many practical time-saving features that are not found in any other line.

West Bend One Lever Control and West Bend Swinging Stanchions

—the greatest improvement ever made in dairy barn equipment. With this remarkable time-saver you can stand at one end of a row of 50 cows, throw a single lever and lock them all in their stanchions, or release them—if you use West Bend Swinging Stanchions and Cow Stops. With the same equipment you can release any cow or lock her in separately. It's the greatest time-saving, labor-saving device in modern barn equipment. With this equipment you can lock in or release 50 cows in about the same time you would individually spend on one cow with ordinary equipment and do it quicker and with absolute safety, for you do not have to approach the cows' heads.

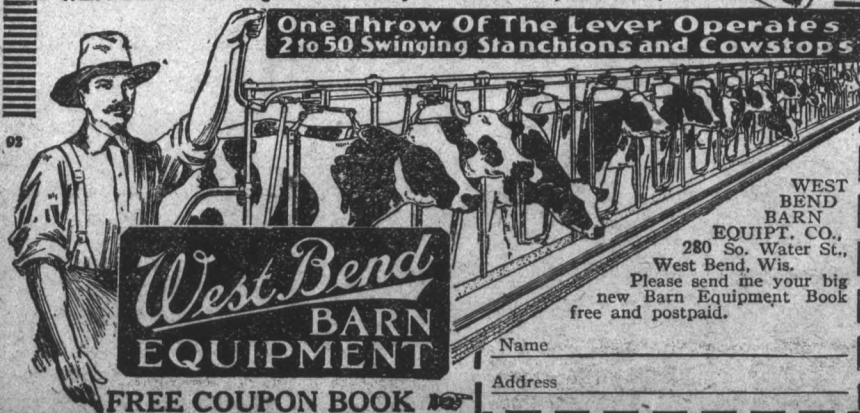
Cows Can't Get their Heads In Wrong

The West Bend Automatic Cow Stop prevents the animal putting its head in any place but the right one. West Bend Barn Equipment costs no more than the "other kind"—but there is no comparison between them. The West Bend Line is complete, including Stanchions, Stalls, Bull and Calf Pens, Feed and Litter Carriers, Watering Systems, Barn Ventilators, etc. We can equip any barn, large or small.

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FREE COUPON BOOK



Feeds for the Cow

BUCKWHEAT AS FOOD FOR DAIRY COWS.

What is the value of ground buckwheat to use in grain ration for dairy cows? I have quite a large amount of buckwheat and there is no sale for it in my locality, neither can I get it ground in flour as the mills decline to grind it, and would like to know if it could be ground and mixed with other grain and made a profitable ration for dairy cows. I have ground oats and barley and can buy wheat bran at \$55 per ton. How does ground buckwheat compare with wheat bran in protein and could it be used profitably in place of bran in making up a balanced ration? If so, will you please give me a balanced ration made up of ground oats, barley and ground buckwheat?

Wayne Co.

E. J. R.

Whole buckwheat doesn't differ materially from corn, oats or barley as a food. Corn contains on an average 7.9 per cent protein, 66.7 per cent carbohydrates and 4.3 per cent fat, or ether extract. Buckwheat contains 7.7 per cent protein, 49.2 per cent carbohydrates and 1.8 per cent fat. You will notice that it contains practically the same per cent of protein but does not contain as much starch and sugar and fat. Pound for pound, then, it would be richer in protein than corn and would be a little more valuable in balancing a ration composed of ordinary roughage foods. When buckwheat is made into flour and the middlings bolted out, the middlings contain the chit or germ of the seed, which is much richer in protein than the balance of the food so that buckwheat middlings contain twenty-two per cent protein, 33.4 per cent carbohydrates and 5.4 per cent fat. Here we have a splendid food to help balance a ration that contains too large a per cent of carbohydrates.

E. J. R. does not give the roughage foods of the ration and so very little information can be given as to balancing the ration, but it can readily be understood that ground buckwheat won't take the place of wheat bran or oil meal or cottonseed meal to balance the ration. It is more of the same nature as oats or barley or corn. It can be used as a substitute for any of these three foods, but should be combined with oil meal or cottonseed meal if you want to increase the protein content of the ration.

C. C. L.

TEN COWS ON TWENTY ACRES.

Can I keep ten cows on twenty acres of land, good, but sandy? If so, how would I go about it? I have no silo and no pasture to speak of. For my part I think it can be done. I hope you will advise me what to sow and plant, as I am anxious to make a go of it.

Wayne Co.

J. L.

It is not impossible to keep ten cows on twenty acres. In fact, more intensive dairying has actually been done than this would be. But you can't take an ordinary twenty acres of land where no previous planting has been done by way of crops and accomplish this at once. You have got to gradually work into it. You say you have no silo, but for this intensive dairying a silo is absolutely necessary to give the best results and you ought to have one this summer so that you can fill it this fall.

You do not say whether you have a clover meadow on this farm or not, or what the crops are. If there is nothing on the land at all I would proceed something like this: Sow five acres to peas and oats, mixing them equal

parts by weight, and seed it with clover, and sow at the rate of two bushels per acre. As soon as this gets large enough you can use part of them as a soiling crop and the balance can be cut and cured for hay. As soon as these peas and oats are harvested disc the ground up thoroughly and plant to ensilage corn. If the season is unfavorable it may be difficult to save moisture enough so that the corn will start well, but a great many years this can be done. If you have a silo already built, or would build one early this spring, you could put these peas and oats into the silo and have them to feed all summer, then you would get this crop off early enough so that you could grow a crop of ensilage corn.

I would take five acres and plant it to ensilage corn. If you have good luck with the corn following the peas, this may make more ensilage corn than you need, but it can be cured for dry fodder if you can't get it into the silo. This five-acre field planted to ensilage corn should be sown to rye just as soon as the silo is filled, then next spring this rye can be made into hay or put into the silo and the ground fitted and put into ensilage corn.

For this year I would sow one field to oats and harvest the oats for grain as there is nothing better for part of the ration than ground oats, then the straw can be used to feed the cows, and for bedding. This spring I would also put in a small field of soy beans. I would allow them to ripen, save the seed to be ground for the cows, and use the straw for hay. It is a splendid substitute for hay, even though we allow the grain to ripen.

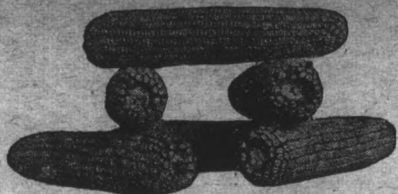
Of course, at first you have got to purchase nearly all the grain. I have made no provision for any pasture for the cows. If you keep ten cows on twenty acres of land you cannot pasture them; you would not have land enough. You have got to keep them in the barn and in exercise yards continuously. When you once get started your experience will dictate what crops you shall raise and the proper rotation for furnishing the foods for these cows. In all probability for a few years you will have to purchase the most of the grain for the cows until you get your land and crops in better shape.

C. C. L.

HOLD ANNUAL MEETING.

The annual meeting of the West Michigan Holstein Breeders' Association was held in Grand Rapids, Mich., on February 3, 1918, and about fifty West Michigan Holstein breeders were in attendance at this meeting. The meeting was called to order by President H. E. Rising, and the minutes of the last meeting read and approved. President Rising made a few remarks, after which a business session was held and cattle pledged for the West Michigan Holstein Breeders' Annual Spring Guarantee Quality Sale. It was decided to hold this sale at the West Michigan State Fair Grounds in Grand Rapids, Mich., on Wednesday, May 14, 1919, with Colonel D. L. Perry, of Columbus, Ohio, in the box as auctioneer. There will be between eighty and one hundred high-class Holstein cattle consigned to this sale, which will be carefully inspected by members of the sale committee, and these cattle will be carefully tuberculin tested by government or state accredited veterinarians. A sale committee was appointed, consisting of W. R. Harper as sales manager, with P. Buth, M. W. Willard, H. A. Washburn and H. E. Rising as the associate members of the sale committee.

W. R. H.



ROCK PHOSPHATE VS. ACID PHOSPHATE.

Is rock phosphate a good fertilizer? Is acid phosphate worth twice as much? My ground was plowed last fall and I want to sow oats and seed with sweet clover. How much should these fertilizers cost?

Charlevoix Co.

J. M. I.

The analysis of rock phosphate would seem to show that it is worth about as much as acid phosphate but the trouble is that the phosphorus in the rock phosphate is not water-soluble and consequently cannot be used by the plant. I have known where people used as much as one thousand pounds of rock phosphate to the acre and they couldn't see any benefit from it at all. We have plenty of inert phosphorus in our soils already, and when we apply fertilizer we should use one that is water-soluble so as to give something that the plant can use immediately. From my experience and observation, and what I have learned from reading the results of various experiment stations I would say that acid phosphate is worth much more than twice as much as rock phosphate. Acid phosphate would be a splendid fertilizer to use on oats where you are to seed to sweet clover, because both oats and sweet clover need quite a per cent of available phosphorus to make good development.

THE FARM HORSE IN SPRING.

WITH two "short years" just passed, it is more important than ever for Michigan farmers to make a big effort to increase production. In this work the farm horse is going to play a very important part; but it is absolutely necessary that he be broken gradually to the work. It is a significant fact that our boys in khaki were not put into the trenches until they were somewhat trained and hardened for the work. Neither should the farm horse sweat, particles of dust collected in the spring work until he is fit.

From an economical point of view, it is best not to crowd the horses when first beginning the spring work. If they get tired out, nothing will restore them except a few days' complete rest.

Especially heavy ones, to travel over newly plowed or uneven ground. Frequent short rests relieve the worry and prevent the horses from becoming overheated.

The harness must be given careful attention to prevent the forming of galls and sores. Wherever it rubs, the horse sweats, particles of dust collect, and by pressure of the harness cut into the skin, forming sores. If not taken care of, they become so serious as to necessitate laying off work. A good plan is to have clean water and a sponge handy, and to wash and dry the places before putting on the harness again. A wash of equal parts of tincture of myrrh and soft water, used two or three times a day when the sores first start, will assist a great deal.

Another thing that worries the horses is to have them hitched uncomfortably to the farm machinery. The traces should always be fastened at equal distances, thus bringing the single-trees and double-trees at a right angle to the way in which the team is going.

Wayne Co.

H. L. SPOONER.

It is not the gross income but the net profits that measure the success of the dairy business.

"Old Number One" Still on the Job

IT was F. Gasperich, owner of OilPull No. 314, one of the first 30-60's built—and also still on the job—that first told us about "Old Number One."

"There is a bit of sentiment attached to the OilPull machine, familiarly called 'Old Number One,'" he wrote. "It has been in our vicinity ever since its purchase in 1910 and is still on the job, running better than many new tractors of other makes. It is owned by Frank Schultz, of Agar, S. Dak., and I don't believe there is a man in this state who has done more plowing and threshing with OilPull machines. Recently I had an opportunity of witnessing the performance of this old OilPull and I will say that it is still a marvel of reliability."

So we asked Frank Schultz to tell us of his experience with the pioneer OilPull, and he writes as follows:

"I have done more work with my 30-60 OilPull tractor than any other engine around this part of the country. I don't know just how many hundreds of acres it has plowed or bushels it has threshed, but she's always been on the job and never lacked for power."

"Some of my neighbors have so-called oil burning engines, but when they get down to a hard pull, they're a lot better on gasoline. Many a time I've had 'Old Number One' running on heavy load all day without a stop and she never overheats. This I don't believe any other tractor owner in this part of the country can say. As far as burning kerosene is concerned, it is the only real kerosene burner that I know of."

"And the OilPull has a lot of reserve power,

which a fellow needs going up steep hills breaking sod in South Dakota. It's the only engine I know that is under-rated."

"The OilPull has more bearing surface and larger shafts than any tractor I've ever seen. I also like the heavy foundation to hold the motor and gearing in place. The carburetor is as simple a mixing device as can be made."

"When you see the OilPull work in the belt you realize the power it develops—how steady the power is and how easily it handles the largest separator."

"In my day I've operated a good many different makes of tractors, but I have yet to see one that will last and stand up like the Rumely OilPull. All the repairs that have been bought for 'Old Number One' would not amount to \$200."

What a tractor can do is best told by what it has done. What "Old Number One" OilPull has done during all these years sets a record for tractor performance that anyone can well use as a standard by which to judge any tractor made.

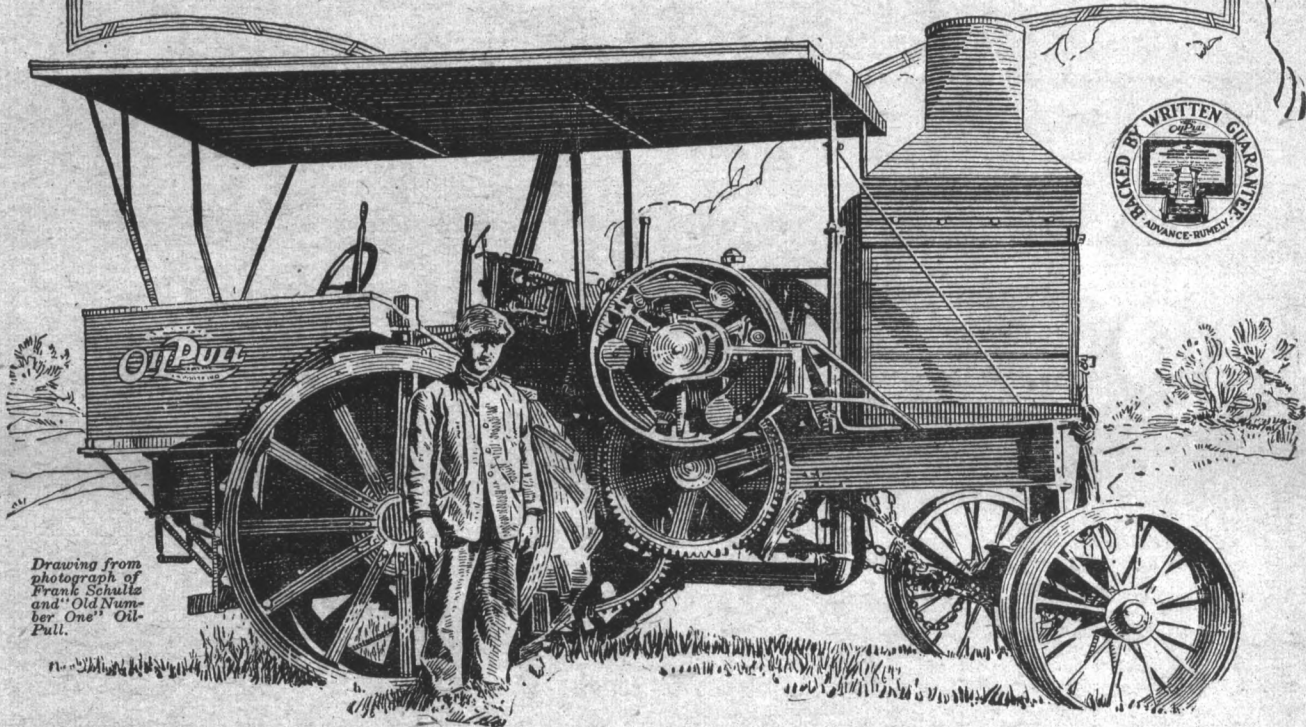
Moreover, into every OilPull is built the same long life, dependability and economy that "Old Number One" has proved out—it's just an example of what OilPull tractors are doing today for over 8,000 owners.

You can get a Rumely OilPull in a size to fit your farm—anywhere from 3 to 10 plows. And Rumely service is within reach of your telephone—no matter where you are—through 26 branch houses, at which are maintained constantly a full stock of machines and repair parts.

Let us send you the OilPull catalog.

ADVANCE-RUMELY THRESHER COMPANY, (Inc.)

La Porte, Indiana
Battle Creek, Mich.



Drawing from photograph of Frank Schultz and "Old Number One" OilPull.

Better Seed Beds — Bigger Yields

Make the most of high-priced seed and fertilizers. Put them into perfect seed beds made as smooth as a flower bed with an

"Acme"

Pulverizing Harrow

"The Coulters Do the Work." They slice their way through sod and trash. They fill air spaces and compact the furrow slices. They pulverize and level the surface soil.

The "Acme" Harrow is light in draft—easy on the team, and you ride. Sizes: 1-horse to 4-horse; the larger sizes are just right for the tractor. Ask your dealer to show you the "Acme." Write us today for prices and new catalog. Be sure also to ask about our new "Acme" Disc Harrow.

DUANE H. NASH Inc.

456 Elm Street

Millington N. J.

"Acme" Standard No. 23—Two-horse Harrow

This model has 12 coulters and cuts 6½ ft.
No. 26 has 16 coulters and cuts 8½ ft.



ROSS' Eureka Corn

These seven cobs kept for one year on the product of one acre of Eureka Corn. Yield was 70 tons 800 lbs. of best quality ensilage. Every bag of Ross' Eureka Corn bears our trademark—man holding stalk of corn. We have complete line of supplies for farm, garden, dairy, orchard or poultry. Seeds our specialty. Send for 120-page free catalog. Supply limited; write today.

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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

EVERGREENS HILL'S 38 Hardy, Tested Varieties
Fine for windbreaks, hedges and lawn planting. All hardy, vigorous and well rooted. We ship everywhere. Write for free Evergreen book and 60 Great Bargain sheet. D. HILL NURSERY CO., Box 5230 Dundee, Ill.

BUILT TO LAST



The Distributor Blades of the No. 10 Can't Work Loose

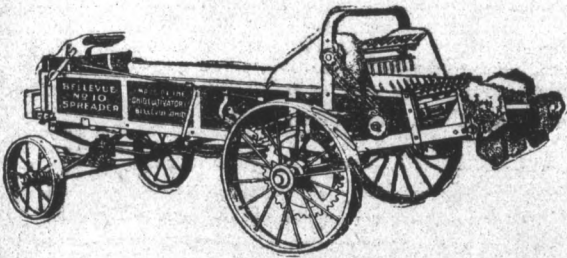
Distributor blades that easily become loosened are a source of trouble and expense. That's why we eliminated the possibility of the distributor blades of the Bellevue No. 10 Spreader from working around the shaft.

They're put in to stay! Each steel hexagon shaped distributor blade is securely bolted to a square steel shaft. The shaft passes through a square opening in each blade that fits the shape of the shaft tightly. The blades couldn't move around even if they weren't bolted. Then each blade interlocks with another, making a three-way protection against loosening of the blades.

That's the way we built the entire Bellevue No. 10 Spreader—by eliminating the mistakes others have made, by studying conditions and requirements. When you take the Bellevue Spreader into your field and see how efficiently it works you will say that the people who built it knew their business.

It is to your advantage to see the Bellevue No. 10 before you buy a spreader. Ask your dealer about it—and if he can't tell you, write to us for our free Spreader Catalog.

OHIO CULTIVATOR CO. BELLEVUE, OHIO
Address Dept. 51



The BELLEVUE No. 10 SPREADER

HORSES

Pure Bred

Belgian Draft Horses

We have some extra good Belgian Stallions for sale, coming three and four years old. They are heavy, of good conformation and sound. You can see their sires and dams. They are raised in Michigan and acclimated. We have no agents on the road for which you or we would have to pay. You cannot buy them any better nor cheaper in the world. Our studs and mares carry the best blood Belgium has produced. We prove this by their pedigrees. We invite you to see our stock before buying. You can see them any day of the week except Sunday. Write for particulars and catalog to the OWOSSO SUGAR COMPANY, Prairie Farm, Alicia, Mich.

Saginaw Valley

STOCK FARM

Belgian and Percheron Stallions and Mares and registered Holstein Cattle, of the best breeding, for sale.

Eli Sprunger & Son, Saginaw, W. S., Mich.

Horses Will Be Horses Soon

We have on hand at all times a choice selection of young Percheron Stallions.

PALMER BROS.,

Belding, Mich. R. R. Orleans.

One Reg. Clyde Stallion coming 3 years old. Sired by a Imported Stallion weight 2160 lbs. and out of Imported Mare weighing 1800 lbs. the mare won first at Michigan State Fair 1918. This colt will make a 2000 lbs. horse. Priced to sell, write or call at once.

WM. I. ORANDELL, Cass City, Mich.

For Sale Percheron Stallion Indicateur No. 6008 Black, weight 1925 this horse is high class, and O. K. in every particular, colts to show. Photo sent. No traders or dinky horse men need reply. Also the Wilkes stallion Cincelaya T. 3887. Record 2-19. C. L. Stockdale, Box 37, Wayland, Mich.

Reg. Percherons One pr. matched black mares, 6 yrs. old Wt. 3500 lbs. in foal to ton horse. One Imp. Dapple Grey stallion 8 yrs. old Wt. 1850. One Black stallion 4 yrs. old Wt. 2000 lbs. all sound and choice stuff priced below value to move them.

J. W. STEGEMAN, Allgan, Mich.

Percherons, Holsteins, Angus, Shropshires, Durocs
DORR D. BUELL, Elmira, Michigan.

For Sale Reg. Black Percheron 3 yr. old Stallion and a number of good sound grade draft colts.
CHAS. BRAY, Okemos, Mich.

For Sale Percheron Stallions. One Dapple Grey sound five years old. One Black Sound four years old. Take Liberty Bonds.
BIRKHOZ STOCK FARM, New Buffalo, Mich.

Percheron Stallions and mares a reasonable prices; inspection invite.
E. L. KING & SON, Charlottetown, Mich.

For Sale Six Shetland Ponies all pure bred and most of them are spotted.
BERT MORGAN, Petoskey, Mich.

The Grain-Saving Stacker

"I found the following saving with the Grain-Saving Stacker: Wheat, 10 bu. to every 1000 bu. threshed; oats, 25 bu. to the 1000; barley, 15 bu. to the 1000." Report of F. L. Kennard, Agronomist, University of Minnesota.

The Grain-Saving Stacker is the ordinary gearless wind stacker with the most important improvement since wind stacking came into use. The device in the hopper saves the grain which otherwise goes to the stack and is wasted. It has saved many thousands of bushels—an enormous gain, at prevailing prices. Under even average conditions it will



View looking into hopper showing grain trap near stacker fan; also auger running from beneath trap for returning the saved grain to separator.

Save Enough Grain to Pay the Threshing Bill

The manufacturers of America's standard threshing machines named below are prepared to furnish machines equipped with the Grain-Saving Stacker. Full information will be given you by any in this list, many of whom you will recognize as the manufacturers of the best-known tractors and farm implements. Write any of these for descriptive circular.

LIST OF MANUFACTURERS

United States
Aultman & Taylor Machinery Co.,
Mansfield, O.

Avery Co., Peoria, Ill.

A. D. Baker Co., Swanton, O.

Banting Manufacturing Co., Toledo, O.

Batavia Machine Co., Batavia, N. Y.

Buffalo Pitts Co., Buffalo, N. Y.

Cape Mfg. Co., Cape Girardeau, Mo.

J. I. Case Threshing Machine Co.,
Racine, Wis.

Clark Machine Co., St. Johnsville, N. Y.

Ellis-Keystone Agricultural Works,
Pottstown, Pa.

Emerson-Brantingham Co., Rockford, Ill.

Farmers Independent Thresher Co.,
Springfield, Ill.

A. B. Farquhar Co., York, Pa.

Frick Co., Waynesboro, Pa.

Harrison Machine Works, Belleville, Ill.

Huber Manufacturing Co., Marion, O.

Keck-Gonnerman Co., Mt. Vernon, Ind.

Minneapolis Threshing Machine Co.,
Hopkins, Minn.

**Port Huron Engine & Thresher Co., Port
Huron, Mich.**

The Russell & Co., Massillon, O.

Russell Wind Stacker Co., Indianapolis, Ind.

**Sawyer-Massey Co., Ltd. (U. S. Agency),
Moline, Ill.**

Swayne, Robinson & Co., Richmond, Ind.

The Westinghouse Co., Schenectady, N. Y.

(Canada)
**Robt. Bell Engine & Thresher Co., Ltd.,
Seaford, Ont.**

**Dominion Thresher Co., Ltd.,
New Hamburg, Ont.**

Ernst Bros. Co., Ltd., Mt. Forest, Ontario

John Goodison Thresher Co., Ltd., Sarnia, Ont.

Hergott Bros., Ltd., Mildmay, Ontario

MacDonald Thresher Co., Ltd., Stratford, Ont.

Sawyer-Massey Co., Ltd., Hamilton, Ont.

Stewart Sheaf Loader Co., Ltd., Winnipeg, Man.

Sussex Mfg. Co., Ltd., Sussex, New Brunswick.

Waterloo Mfg. Co., Ltd., Waterloo, Ont.

R. Watt Machine Works, Ridgetown, Ont.

George White & Sons Co., Ltd., London, Ont.

**The Grain-Saving Device Originated with The Indiana Manufacturing Co.,
Indianapolis, Ind., Who Also Originated the Wind Stacker**



PREPARING MUCK LAND FOR SEEDING.

About one third of my farm of 97 acres is good muck and will soon have the best of drainage. I would like to break up some of this muck this year and I hardly know what would be the best way to go at it, as some of it is quite boggy. Will the bogs have to be leveled down before I can do a good job of plowing? If so, what is the best tool I can do it with? What do you consider is the best crop for this kind of land for the first time? What kind of fertilizer would you use, and how much to the acre? I would like to get this land seeded to timothy and alsike as soon as possible. I might say that there is a large dredge now at work digging a ditch seven and a half miles in length, and I am sure an answer to these questions would interest quite a few.

Eaton Co.

H. T.

There are a number of types of breaking plows which have been used successfully on muck. Where the muck has been stumped and contains large roots the disc plow has been found to be most efficient. On our so-called prairie mucks where there is no timber and which is sod, the best type of plow has been found to be the "breaking" plow, which has a long moldboard and wide shares. It will be found practical to have several shares on hand so that they may be sharpened and changed often. The matter of sharp, wide shares on a breaking plow facilitates the cutting of this packed grass. Muck you know, is nothing more than tightly packed organic matter. The coulter must also be sharp, whether it be a disc or a knife. A plan which is followed with success is to thoroughly disc before plowing. If you will use good judgment in selecting the plow for this job I do not think that the bogs will bother you.

Some of the crops which are used to subdue muck are: Buckwheat, timothy, oats, spring barley, red-top, potatoes and millet. Here again it depends on the type of muck. We must remember that there are just as many different types of muck as there are highlands. The best kinds of fertilizer which can be used on new muck is barnyard manure. If this is not available you will probably get a fairly good crop of grain without fertilizer the first year. Growing any crop which will cause the muck sod to be subdued rapidly will prepare this land for timothy and alsike.

I would suggest that you get in touch with your county agent and arrange for a meeting with the men who own muck along this ditch. Then, Mr. Farland will arrange for me to visit you and I will be glad to take this matter up with you in detail.

EZRA LEVIN,

Muck Crop Specialist.

HOGGING DOWN RYE.

I would like some information about feeding down rye. Should I wait until the rye is entirely ripe before turning in the hogs? Do hogs waste much of the grain when fed in this way?

Ingham Co.

C. B. V.

Experienced feeders prefer to delay turning hogs onto the rye field until the weather has softened the beards. There is very little waste in pasturing rye if one feeds some corn and green feed along with it. Turning hogs into a field of rye at a time when the beards are sharp and stiff has discouraged many feeders from utilizing rye for hogging down purposes.

W. M. K.

A CORRECTION.

In the list of officers of the Federation of Michigan Farm Bureaus recently organized at Lansing, Miss Flora C. Buell, of Ann Arbor, is head of the Home Economics Department, instead of Miss Jennie Buell, as published in our issue of February 8.

When You Write to Advertisers Please Mention This Paper.



A GRADE THAT PAID.

I HAVE a two-year-old grade Holstein heifer that freshened December 29, 1918, and has produced 2,173.9 pounds of milk in forty-two days, as follows,

	Lbs.
Dec. 29 to Jan. 4, 1919.....	257.0
Jan. 5 to Jan. 11, 1919.....	352.7
Jan. 12 to Jan. 18, 1919.....	380.7
Jan. 19 to Jan. 25, 1919.....	392.2
Jan. 26 to Feb. 1, 1919.....	388.9
Feb. 2 to Feb. 8, 1919.....	402.4

I started her on five pounds of grain in two feeds, and after one week I increased to seven pounds and kept increasing gradually until she is taking fifteen pounds a day at three feeds. I am now milking three times a day.

The roughage consists of two bushels of silage and mixed hay, two-thirds timothy and one-third clover, the silage is very dry and has a little mold in it. Her grain consists of three parts mixed feed, one part corn meal and one part oil meal. Her best twenty-four-hour production was 58.6 pounds, which she produced three different times.

Ottawa Co. B. F. BEUTE.

CONDITIONING FOR RECORDS.

THE cow must be in proper condition to go through the work of making a good production record, whether for seven days, thirty days, ninety days or one year. Few breeders of dairy cattle realize what condition means in making a great production record. It is often the extra few pounds of flesh and reserve energy that means the breaking of a world's record for milk and butter-fat production and places some breeder on the highest pinnacle of fame. It is difficult to define exactly just how to put on this extra flesh and bring the cow safely through her calving period, but it is seen only when cows begin their official tests as vigorous and well-fleshed as skillful feeding can make them. Condition, as meaning capable of maximum production, is necessary before a phenomenal record may be looked forward to in the coming test.

SUDAN GRASS VS. MILLET.

Owing to the prospect for a shortage of hay the coming season, on account of the extensively dry season the past year I intend to sow millet, or Sudan grass, as a substitute. Has Sudan grass proven to be of value compared with Sudan grass to give an intelligent opinion as to its value compared with millet. For my own use and from what I know I would sow millet in preference to Sudan grass. Millet we know makes a splendid substitute for hay. Hungarian grass is the best variety of this plant. This can be sown as late as the latter part of June and on a good soil will make a splendid crop. It should be harvested for hay when in the milk. Don't let the seeds form.

Sudan grass is a vigorous grower, but my knowledge is that it is not as valuable and does not make as fine a quality of hay as Hungarian grass. A splendid crop to grow for hay in this climate is Canada field peas and oats mixed equal parts by weight and sown at the rate of two and a half bushels per acre.

C. C. L.

Larro-feed

THE READY RATION FOR DAIRY COWS
Marketing Conditions Which Interfered During the War With Shipment and Production Now Overcome

As long as the war continued, various ingredients were difficult, oftentimes impossible, to get. Incoming shipments of supplies and outgoing shipments of Larro-feed were subject to many delays.

Now most of the restrictions on production have been removed. Shipping facilities are good.

Larro-Feed is Guaranteed to Give You More Milk and More Profits

Actual experience has shown thousands of dairymen that Larro-feed possesses every quality a balanced ration should have—the variety and palatability which make cows like it and thrive on it—the digestibility which conserves their health and milk productivity—the correct proportions of feed ingredients which raise their milk production to the maximum.

Results in the form of increased milk profits and healthier cows have won the continued patronage of Larro-feed users. They know that no home-mixed, guess-work feed can possess the qualities they get in this ready-to-feed ration. Larro-feed is the product of practical men who have made a life study of dairy feed. It is composed of the choicest ingredients only, mixed in a clean, modern plant, that is equipped throughout with

the most accurate mixing and weighing machinery.

Larro-feed is not a cheap feed—nor is it cheap in results. If its first cost seems high—remember that the first cost comes back to you with a profit attached. You get it in the milk pail, in the increased milk profits in your bank book. This profit is included in the Larro guaranty.

Remember—Larro-Feed Has Been Sold for Seven Years on a Money-Back-If-Not-Satisfied Guarantee

How long do you suppose we could continue selling Larro-feed on this guaranty plan if the feed did not make good. Users everywhere are enthusiastic over the results they obtain.

Order a supply from your local Larro-feed dealer today. If you have not yet used it, give it a thorough trial. Remember the value of milk was never higher, the demand for it never greater. The more your cows produce, the more money you make, and Larro-feed is guaranteed to make more milk profits for you. If you do not know who the Larro-feed dealer is in your territory, write us direct and we will give you full information as to how and where you can get a supply.

THE LARROWE MILLING COMPANY
601 LARROWE BUILDING DETROIT, MICHIGAN

Only \$2 DOWN ONE YEAR TO PAY

38 Buys the New Butterfly Jr. No. 2-1/2.
Light running, easy cleaning, close skimming, durable.
NEW BUTTERFLY
Separators are guaranteed a life-time against defects in material and workmanship. Made also in four larger sizes all sold on 30 Days' FREE TRIAL and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money.

EASY TO CLEAN

Albaugh-Dover Co., 2105 Marshall St., Chicago

Lump Jaw

The farmer's old reliable treatment for Lump Jaw in cattle.

Fleming's Actiniform

Sold for \$2.50 a bottle under a positive guarantee since 1896—your money refunded if it fails. Write today for FLEMING'S VEST-POCKET VETERINARY ADVISER. A book of 197 pages and 67 illustrations. It is FREE.

FLEMING BROS., Chemists, 252 Union Stock Yards, Chicago

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Car lots or less. YOUNG-RANDOLPH SEED CO. Owosso, Mich.

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Everything About SILAGE

Complete information on building, filling and maintaining of Silos; silage, feeding and rations. Used by many State Agricultural Colleges as text-book. 264 pages, 10-page index, 74 illustrations. Send 25c. coin or stamps, for your copy today. Also ask for our 4-color folder of Silver's Silo Fillers Mailed FREE.

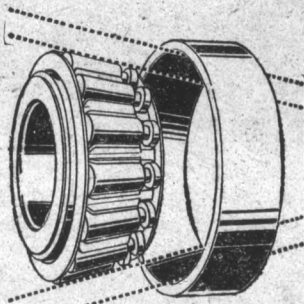
The Silver Mfg. Co., 390 Broadway, Salem, O.

Send for This Book Now

Cull Beans For Sale Car lots or bag lots. YOUNG-RANDOLPH SEED CO. Owosso, Mich.

Mention The Michigan Farmer When Writing Advertisers

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

It's in Your Auto It Ought to be in Your Tractor

Timken Taper has for years been a principle of motor-car bearings that has enabled them to stand up under the continuous hammer, strain and end thrust that always exists as the car rushes along the road.

The Timken Taper *principle* has been tested out over hundreds of thousands of miles—on all sorts of roads—in nearly every make of passenger car on the market. It has been further proved by tests that only the heaviest trucks could impose.

This same principle of Timken Taper is correct, too, for the tractor. For there is not the slightest difference in the *kind* of load that is put on any bearing by any passenger car, truck or tractor, and there need be no difference in the bearing except as to size and proportions.

More and more tractor builders are realizing that this similarity of service exists, and there's proof of their acceptance of the tapered principle in the rapidly increasing number of Timken equipped tractors. There's more about the principle of Timken Taper in the booklet T-3, "Timken Bearings for Farm Tractors." Write for your copy.



THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio





WORLD EVENTS IN PICTURES



From "Darkest Russia" Comes this Photo Showing Typical Bolsheviks Marching through the Streets of Moscow.



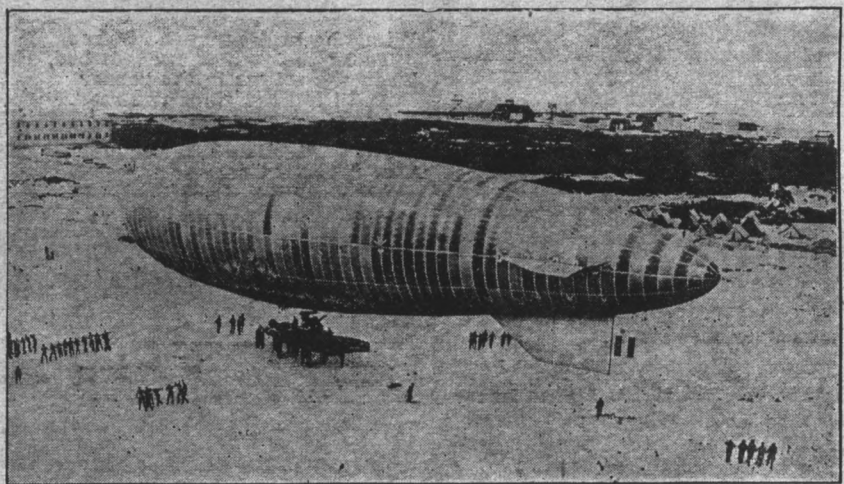
Michigan Soldiers of the 339th U. S. Infantry Under Inspection at Archangel, Russia, During a Ten-day Rest Period.



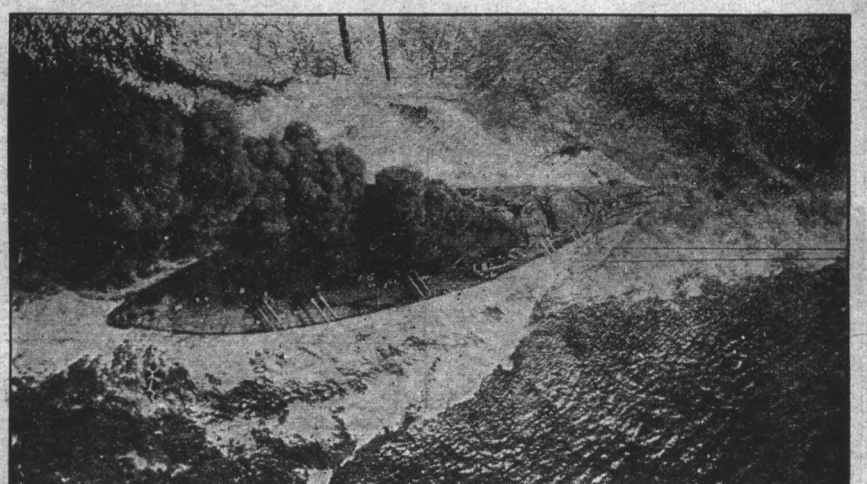
German Soldiers Stationed upon Roof of a Nearby Building Protect Government Building in Berlin Against Soldiers of the "Reds."



U. S. Troops and Civilians of Seattle were Called Out to Break the Strike which Involved 55,000 Workers of Different Trades.



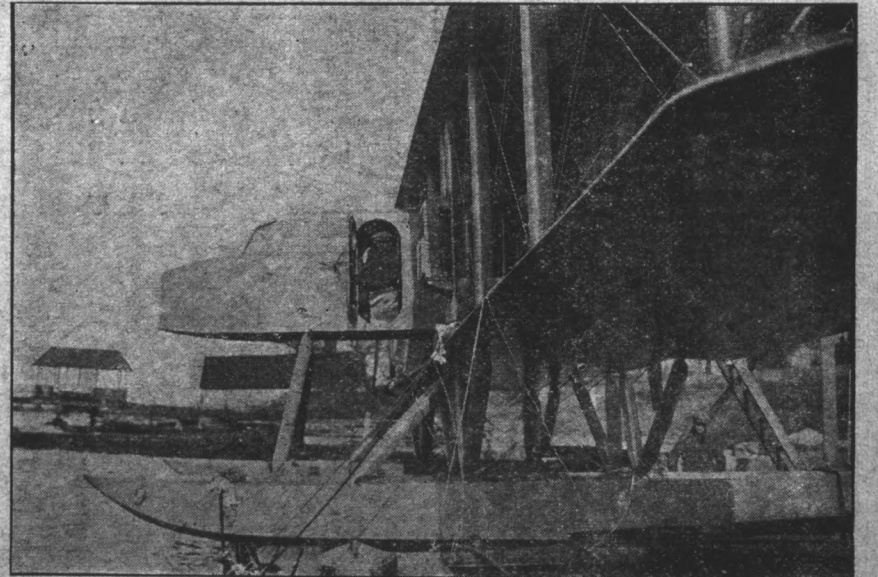
American Dirigible 192 Feet in Length, Largest now in Operation, Makes a Successful 1,500 Mile Flight from Long Island to Key West, Florida.



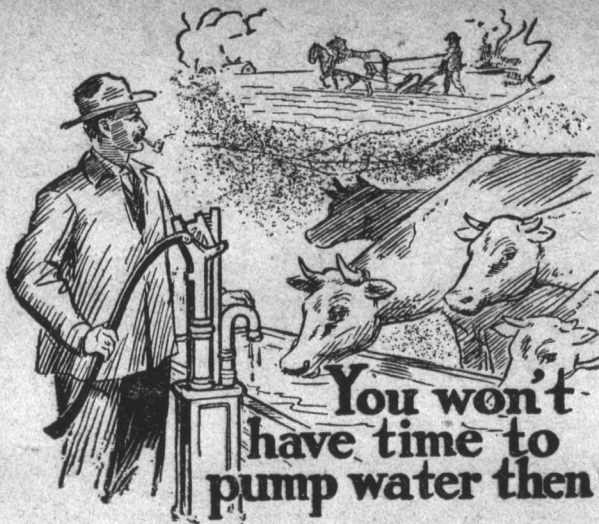
War Ship of the British Navy Illustrating the Effect of a "Smoke Screen" on Going into Action. Photo Taken from a Kite Balloon.



President Wilson and Mrs. Wilson Visit Chateau Thierry where the Yanks Turned the Tide Against the Germans. Mrs. Wilson in Gateway.



Swedish Aviator and Plane in which he Intends Making trans-Atlantic Trip. It is Propelled by Liberty Motors and the Wings Extend One Hundred Feet.



When you start working your land, your time is valuable. You won't have time to spare to pump water for stock and for the house—but you'll have to do it, anyway, unless you decide *now* to put in a

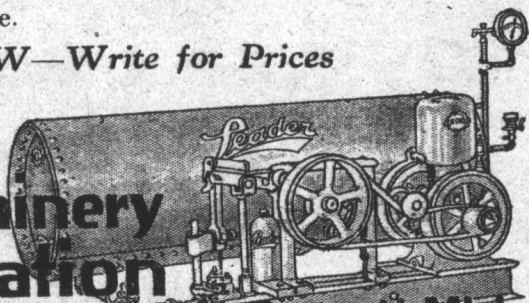
Leader Water System

Why should you take time a dozen times every day to pump water when the Leader will do the work for you? With it you can have an abundance of fresh water always ready at the turn of the faucet. No time lost—no labor—no attention at all. It will pay you to investigate.

Investigate NOW—Write for Prices

Kerr Machinery Corporation

E. Fort & Beaubien Sts. - Detroit, Mich.



Boost Your Local Paper

THE small town newspaper can be made one of the largest factors in the uplift of the community. In many local towns the local paper is now the vital spark that keeps business going. It is the organ of the social life of the community and it keeps friends from forgetting each other. The local paper keeps the former citizen interested in the old home town even after he has moved to the city. Without a live local paper the small town lacks one of the most necessary agents for its welfare.

Why does the local paper appeal to the reader? The boy in France may not worry over the future of the German colonies in Africa, or the boundaries of Siberia, but he does like to know that Bill Jones is painting his barn and that Tom Smith has opened a new grocery on the corner. The small town paper appeals to the citizen of the community in the same manner as it appeals to the soldier. It is the story of much of the life around home and everything that tells of home is very interesting to all of us.

Confidence in the local paper is necessary if it performs the highest service. "Well," says Johnson, "they had a big fight at the school meeting last week." "Is that so," responds Brown, "I didn't read anything about it in the Bugle and if it's not there, it didn't happen." Brown had faith in his daily paper. A paper that can hold the confidence of its readers has a great responsibility to them as the readers will take its statements without question and act accordingly. A paper that does not enjoy the confidence of the community might better not be printed, even though it is somewhat of a financial success. The place of the paper in the lives of the people in the community can be made so important that the value of the influence cannot be computed in money.

Cooperation between the people of the town and the publisher of the local paper is important. There are two sides to the proposition. First, we have emphasized the obligation that the publisher owes the people of the town and his duty to furnish them with the best possible service. Next comes the duty of the people to the publisher of their community paper.

The cost of publishing papers has increased because of the increased price of paper, ink, labor, and in fact, everything that goes into the manufacture of a paper or magazine. The local paper depends for its income on the business which it receives from the community. Subscriptions are not the biggest item in the receipts but they must be paid. Often a farmer with abundant funds will neglect the payment of a newspaper subscription until frequent duns have been received. He may feel that it is only a piece of paper and as long as the editor prints a bunch of them anyway the small subscription fee from one subscriber will not worry the publisher. Multiply that feeling a few hundred times and it will cause the publisher enough worry to possibly put him out of business. Probably nothing in the newspaper business can help the editor more than prompt payment of subscriptions.

The merchants of a small town soon learn to appreciate the value of a live local paper. Their advertising patronage is absolutely necessary to keep the publisher in business. It is a well-known fact that a man must advertise to improve his business as soon as that business reaches the stage where he is prepared to deliver the right kind of goods. Honest advertising in the local

paper will create confidence in the publisher of the paper as well as improve the business of the advertiser. The local merchant should do all in his power to make his advertisement clear and free from the slightest tinge of a misleading statement. This is an important factor in making the local paper a success. Many a customer who has been cheated at a sale has lost all faith in the paper in which he read the advertisement. The publisher owes it to himself and to the community to refuse questionable advertising and also all copy from local merchants who may have disregarded the truth in writing their advertisements.

The farmer is vitally interested in the small town paper because such a paper depends greatly on the patronage of the farmers in the community. The paper keeps the farmer in touch with all meetings of a business or social nature which occur in the town. Thus the farmer is able to do his part in the life of the community to a larger extent than as if the town had no live paper to keep him posted on local events.

The life of the community demands that there be some method of informing the people of what is going on. The local paper fills that place and as a real factor in the development of a town and a farming community, it deserves the cooperation of every farmer.

WINTER EVENINGS.

There's a heap of solid comfort
In an easy chair at night,
With a magazine or paper,
Some good apples or my pipe.
And it matters not how wintry
Or how stormy out of doors,
I sure take a lot of pleasure
Resting from the evening chores.

Wife, she hustles up the dishes
Tucks the youngsters into bed,
Then she settles in the rocker
And I tell her what I've read.
While she patches on some trousers
Or some little stockings mend,
And we both are mighty sorry
When such pleasant evenings end.

But I couldn't find enjoyment
Nor much comfort in it all,
If I didn't know the horses
Were well bedded in their stall.
If the cattle were not sheltered
And protected from the cold,
If the sheep had not been watered
And fixed snugly in the fold.

Oh—it adds to all the pleasure
And it makes it seem complete,
Knowing that the cows and horses
Are a sharing in the treat.
That they stand knee deep in bedding
And a munching on their hay,
And the little calves are cosily
A sleeping in the bay.

There's a heap of solid comfort—
On a stormy winter's night,
With a magazine and paper
Some good apples or my pipe.
But the thing that gives me pleasure
And that makes it seem complete,
Is to know the stock is sheltered
And a sharing in the treat.

L. W. S.

WILL YOU WALK INTO MY PARLOR?

A Mr. Cobb has married a Miss Webb. He knew they were meant for each other the first time he spied her.

EASTER?

"John," said Mrs. Stylover, "I'm going to town tomorrow to see the new hats."

"You forget," her husband reminded her, "that tomorrow is Sunday and the stores will be closed."

"Who said anything about stores? I'm going to church."

Hurst's 1919 Catalog—Just Out

STANDARD MERCHANDISE AT WHOLESALE PRICES TO THE PEOPLE



Standard Make
Guaranteed

Auto Tires

\$12.95

Retail at \$15.55

\$3.70 Red Tubes \$2.85
2.50 Reliners 1.75

Complete Auto Accessory Department.
Send for catalog.

\$2.50 House Paint

\$1.85 Per gal. in
5 gal. cans

\$2.00 Barn Paint.. \$1.29
1.50 Shingle Stain 1.00

Varnishes Stains, Brushes, Etc.
Send for catalog and color cards.

COMMERCIAL
FEED AND SEED

**Hurst's Clover Brand
HOG FEED**

Produced pork at \$9.50 per
cwt. in a recent test
Write for Feed and Seed
prices.

A \$25 Set of Buggy Harness



\$17.15

\$50.00 Team
Harness
\$39.15

Send for catalog

COMPLETE DEPARTMENTS OF
Auto Accessories, Hardware, Vehicles, Implements, Feed,
Groceries, Furniture, Dry Goods, Electric Goods, Etc.

HURST & CO.

Capital Stock \$1,000,000. Assets over a million.
Incorporated Wholesale Purchasing Agents for Farmers

32-42 Hurst Block INDIANAPOLIS, U. S. A.

SEND FOR THE CATALOG

SEND FOR

This \$75.00
SEPARATOR
\$49.50

Guaranteed as good as any
Cream Separator on the
market.

ORDER TODAY

10-Bar 47-inch Farm Fence



46c Per Rod.
Standard Make
Standard Weight
26-in. Hog Fence
31c

All styles, all sizes Fence at prices
that save you money.



Hurst's Winner Roofing

\$1.25 Per roll of 108 square
feet.
With Nails and Ce-
ment.

\$1.50 Asphalt Roofing.. \$1.10
3.00 Slate Roofing..... 2.40
6.50 Asphalt Shingles.. 5.50

This \$125.00 Top Buggy

\$99.65

Wagons
Implements
Farm
ools.
Wholesale
Prices.
Get the
Catalog.



Gathering the World's Plant-Food for American Farms



The Service of the Fertilizer Industry

Assembling raw materials from the four corners of the earth is the *first* step. Then comes grinding, processing, treating with acids, curing, regrinding, mixing into the various required combinations, bagging and, finally, distributing to the consumer — 7,000,000 tons annually — when, where and in such quantities as may be desired.

Now that the War is over, the fertilizer industry is making many improvements in materials and methods which will render still greater service to American Agriculture.

Soil Improvement Committee

913 Postal Telegraph Bldg.
Chicago

of the National Fertilizer Association

1413 The Munsey Bldg.
Baltimore

"Fertilizer Feeds the Crops that Feed the World"

High Power-Low Cost-Easily Controlled WATERLOO BOY

(ORIGINAL KEROSENE TRACTOR)

Plows 8 to 12
Acres per Day

Ample Power
For All
Belt Work

In placing the power rating of the Waterloo Boy Tractor at 12-25 we have made due allowance for the need of reserve power in all farm work.

Farmers who own Waterloo Boy Tractors find that its 8-horse pulling power at the draw bar is ordinary and that it pulls a 10-horse load when occasion demands.

Its belt power is conservatively rated to operate a 24-inch to 26-inch thresher, but owners of the Waterloo Boy report that they operated a 28-42 thresher successfully at a fuel cost of 15 gallons kerosene in a 10-hour day. Filled 30-foot silo without a hitch or balk.

Because of Waterloo Boy Dependability

you can take quick advantage of favorable weather and ground conditions for plowing, harrowing, seeding, harvesting, threshing, silo filling, hay baling, grinding, hauling, etc.

Does Double Duty When Called For

On the farm of Col. Samuels, near Dallas, Tex., the Waterloo Boy pulled a 4-disc plow 7 inches deep, cutting 40 inches wide in "Texas Black Wax" and dragged a 5-foot harrow, leaving ground in fine condition, in one operation.

The Waterloo Boy is noted for its success as an economical kerosene burner, for simple, strong construction, for easy control and ready response to every power demand.

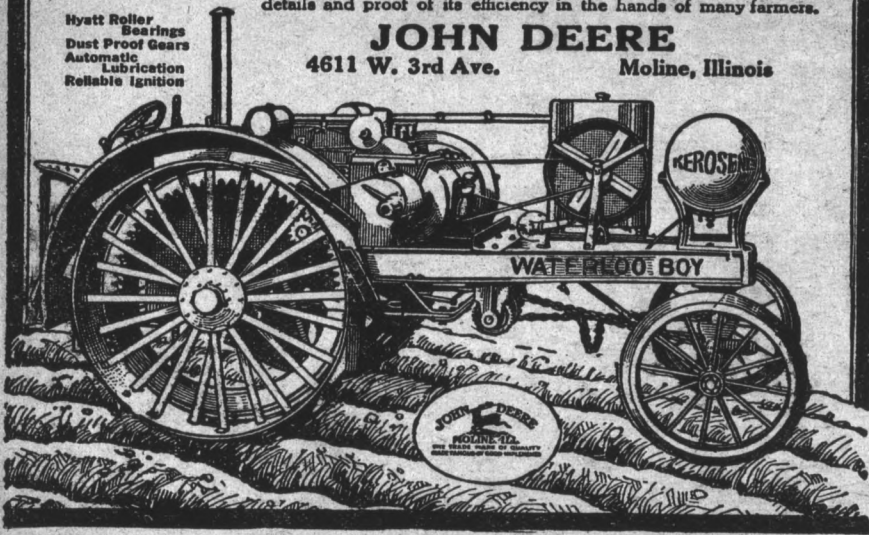
Investigate this tractor. Write us for free illustrated catalog which gives construction details and proof of its efficiency in the hands of many farmers.

Hyatt Roller
Bearings
Dust Proof Gears
Automatic
Lubrication
Reliable Ignition

JOHN DEERE

4611 W. 3rd Ave.

Moline, Illinois



The Cheapest Way To Pull Stumps

Thousands
of Kirsins
Now in
Use!

No horses needed with a **Kirstin Puller**—no extra help required. One man alone pulls biggest stumps in 4 to 10 minutes. The wonderful **Kirstin One-Man Puller** pulls little, tough or green stumps as low as 5c each; also brush, hedges and trees. Cuts land clearing cost way down. Costs less to buy—less to operate. Weighs less—has greater strength—more power.

Get Our Big
FREE BOOK

Tells how to clear land quickly and economically. Guides you at every point. Worth many dollars to any farmer. Also get special proposition.

**Kirstin One-Man
Stump Puller**

Works on wonderful leverage principle—gives one man giant's power. Its six speeds and patented cable take-up save time, cable and machine. All steel—three years' guarantee against breakage. Pulls acre from one anchor.

Sold on 30 days' free trial—no money in advance. One man style or HORSE POWER. Shipment from nearest distributing point saves time and freight. Write for FREE BOOK and Special Agent's Proposition—TODAY.

A. J. KIRSTIN CO., 316 Lud St., Escanaba, Mich.

World's Largest
Makers of
Stump Pullers!

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws. Write AERMOTOR CO., 2500 Twelfth St., Chicago



MAPLE SYRUP MAKERS!

With the GRIMM Evaporator

you will make better syrup with less fuel and labor than with any other system. Write for catalog of evaporators, tanks, buckets, sap spouts, syrup cans & other supplies. State number of trees you top.



Grimm Manufacturing Co.
629 Champlain Ave., N.W., Cleveland, O.

LANDOLOGY

FREE

If for a home or investment you are thinking of buying good farm land, simply write me a letter and say, "Mail me LandoLOGY and all particulars free." Address
EDITOR, LANDOLOGY, Skidmore Land Co.,
381 HALL AVE. MARINETTE, WIS.

A magazine giving the FACTS in regard to the land situation. 3 months' trial subscription
A Grand Stock of all kinds of fruit trees
berry plants, grapes, shrubs
vines, roses, the choicest varieties. Also seed corn and garden seeds. Prices right. Catalog free.
JERNST NURSERIES, Box 2, Eaton, Ohio.

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How to
Break
and Train
Horses

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BIG MONEY IN "ORNER" HORSES

MY free book will amaze you. See the big money that is being made by those I taught my famous system of horse breaking and training! Wild colts and vicious, unmanageable horses can be picked up for a song. By my methods you can quickly transform them into gentle, willing workers and re-sell them at a big profit. You can also earn fat fees breaking colts and training horses for others.

Write! My book is free, postage prepaid. No obligation. A postcard brings it. Write today.
Prof. JESSE BEERY 383 Main St., Pleasant Hill, Ohio

A Grand Stock of all kinds of fruit trees
berry plants, grapes, shrubs
vines, roses, the choicest varieties. Also seed corn and garden seeds. Prices right. Catalog free.
JERNST NURSERIES, Box 2, Eaton, Ohio.



"Beyond the Frontier"

My Pledge Saves De Artigny.

I HAD one glimpse of his face as he leaned forward, and there was a look in it which made me shudder and turn away. His was no idle threat, and whether the man truly loved me or not, his hatred of De Artigny was sufficient for any cruelty.

I realized the danger, the necessity for compromise, and yet for the moment I lacked power to speak, to question, fearful lest his demands would be greater than I could grant. I had no thought of what I saw, and still that which my eyes rested upon remains pictured on my brain, the sparkle of sun on the water, the distant green of the shore, the soldiers huddled in the canoe, the dark shining bodies of the Indians ceaselessly plying the paddles, and beyond us, to the left, another canoe, cleaving the water swiftly, with Pere Alouez' face turned toward us, as though he sought to guess our conversation. I was aroused by the grip of Cassion's hand.

"Well, my beauty," he said harshly, "haven't I waited long enough to learn if it is war or peace between us?"

I laughed, yet I doubt if he gained any comfort from the expression of the eyes which met his.

"Why, I choose peace, of course, Monsieur," I answered, assuming a carelessness I was far from feeling. "Am I not your wife? Surely you remind me of it often enough, so I am not likely to forget; but I resent the insult of your words, nor will you ever win favor from me by such methods. I have been friendly with Sieur de Artigny, it is true, but there is nothing more between us. Indeed no word has passed my lips in his presence I would not be willing for you to hear. So there is no cause for you to spare him on my account, or rest his fate on any action of mine."

"You will have naught to do with the fellow?"

"There would be small chance if I wished, Monsieur; and do you suppose I would seek companionship with one who had killed my uncle?"

"'Twould scarce seem so, yet I know not what you believe."

"Nor do I myself; yet the evidence is all against the man thus far. I confess I should like to hear his defense, but I make you this pledge in all honor—I will have no word with him, on condition that you file no charges until we arrive at Fort St. Louis."

"Ah!" suspiciously, "you think he has friends there to hold him innocent."

"Why should I, Monsieur? Indeed, why should I care but to have justice done? I do not wish his blood on your hands, or to imagine that he is condemned because of his friendship for me rather than any other crime. I know not what friends the man has at the Rock on the Illinois. He was of La Salle's party, and they are no longer in control. La Barre said that De Baugis commanded that post, and for all I know De Tonty and all his men may have departed."

"'Tis not altogether true, and for that reason we are ordered to join the company. De Baugis has the right of it under commission from La Barre, but does not possess sufficient soldiers to exercise authority. La Salle's men remain loyal to De Tonty, and the Indian tribes look to him for leadership. Mon Dieu! it was reported in Quebec that twelve thousand savages were living about the fort—ay, and De Artigny said he doubted it not, for the meadows were covered with tepees—so De Baugis has small chance to rule until he has force behind him. They say

this De Tonty is of a fighting breed—the savages call him the man with the iron hand—and so the two rule between them, the one for La Barre, and the other for La Salle, and we go to give the Governor's man more power."

"You have sufficient force?"

"Unless the Indians become hostile; besides there is to be an overland party later to join us in the spring, and Sieur de la Durantaye, of the regiment of Carignan-Salliers is at the Chicago portage. This I learned at St. Ignace."

"Then it would seem to me, Monsieur, that you could safely wait the trial of De Artigny until our arrival at the fort. If he does not feel himself suspected, he will make no effort to escape, and I give you the pledge you ask of me."

It was not altogether graciously that he agreed to this, yet the man could not refuse, and I was glad enough to escape thus easily, for it was my fear that he might insist on my yielding much more to preserve De Artigny from immediate condemnation and death. The fellow had the power, and the inclination, and what good fortune saved me, I can never know. I think he felt a certain fear of me, a doubt of how far he might presume on my good nature.

Certainly I gave him small encouragement to venture further, and yet had he done so I would have been at my wit's end. Twice the words were upon his lips—a demand that I yield to his mastery—but he must have read in my eyes a defiance he feared to front, for they were not uttered. 'Twas that he might have this very talk that he had found me place alone in his canoe, and I would have respected him more had he dared to carry out his desire. The coward in the man was too apparent, and yet that very cowardice was proof of treachery. What he hesitated to claim boldly he would attain otherwise if he could. I could place no confidence in his word, nor reliance upon his honor.

However nothing occurred to give Cassion opportunity, nor to tempt me to violate my own pledge. We proceeded steadily upon our course, aided by fair weather, and quiet waters for several days. So peaceful were our surroundings that my awe and fear of the vast lake on which we floated passed away, and I began to appreciate its beauty, and love those changing vistas, which opened constantly to our advance.

We followed the coast line, seldom venturing beyond sight of land, except as we cut across from point to point; and fair as the wooded shore appeared, its loneliness, and the desolation of the great waters began, at last, to affect our spirits. The men no longer sang at their work, and I could see the depression in their eyes as they stared about across ceaseless waves to the dim horizon.

Day after day it was the same dull monotony, crouched in the narrow canoe, watching the movements of the paddlers, and staring about at endless sea and sky, with distant glimpses of wilderness. We lost interest in conversation, in each other, and I lay for hours with eyes closed to the glare of the sun, feeling no desire save to be left alone. Yet there were scenes of surpassing beauty unrolled before us at sunrise and sunset, and when the great silvery moon reflected its glory in the water.

Had companionship been congenial no doubt every league of that journey would have proven a joy to be long remembered, but with Cassion beside me

ever seeking some excuse to make me conscious of his purpose, I found silence to be my most effective weapon of defense. Twice I got away in Pere Allouez' canoe, and found pleasure in conversing, although I had no confidence in the priest, and knew well that my absence would anger Cassion.

Our camps occurred wherever night overtook us and we found good landing place. Occasionally we went ashore earlier, and the Indians hunted for wild game, usually with success. In all these days and nights I had no glimpse of De Artigny, nor of his crew. It was not possible for me to question Cassion, for to do so would have aroused his jealous suspicion; but, as he never once referred to their continued absence, I became convinced that it was his orders which kept them ahead. No doubt it was best, as the men soon forgot the tragedy of Hugo Chevet's death, and after the first day I do not recall hearing the murder discussed.

Such deeds were not uncommon, and Chevet had made no friends to cherish his memory. If others suspected De Artigny they felt little resentment or desire to punish him—and doubtless the men had quarreled, and the fatal knife thrust been delivered in fair fight. The result interested them only slightly, and none regretted the loss of the man killed.

We made no entrance into Green Bay, for there was nothing there but a newly established mission station, and perhaps a hunter's camp, scarcely worth our wasting two days in seeking. Beside the night we made camp at a spot marked on the map as Point de Tour, we found waiting us there the advance canoe, and both De Artigny and the chief counseled that our course be south across the mouth of the bay. I sat in my tent and watched them discuss the matter in the red glow of the fire, but this was my only glimpse of De Artigny, until he led the way the next morning.

Our voyage that day was a long one, and we were often beyond view of the land, although we skirted several islands. The lake was stirred by a gentle breeze, yet not enough to delay our passage, and the sky above was cloudless. The Indian chief took the steering paddle in one of our boats, relieving Pere Allouez, and De Artigny guided us, his canoe a mere black speck ahead. It was already dark when we finally attained the rocky shore of Port de Morts.

When dawn came De Artigny and his crew had departed by order of Cassion, but the chief remained to take charge of the third canoe. The indifference the younger man had shown to my presence hurt me strangely—he had made no effort to approach or address me, indeed, so far as I was aware, had not so much as glanced in my direction. Did he still resent my words, or was it his consciousness of guilt, which held him thus aloof?

Not for a moment would I believe him wholly uninterested. There had been that in his eyes I should never forget, and so I persuaded myself that he thus avoided me because he feared to anger Cassion. This was not at all in accord with his nature as I understood it, yet the explanation gave me a certain content, and I could find no better. Thus we resumed our journey southward along the shore, but with clouded skies overhead, and the water about us dull and gray.

CHAPTER XVII. The Break of Storm.

WE had no more pleasant weather for days, the skies being overcast and the wind damp and chill. It did not rain, nor were the waves dangerous, although choppy enough to make paddling tiresome and difficult.

A mist obscured the view, and compelled us to cling close to the shore so as to prevent becoming lost in the smother, and as we dare not venture to strike out boldly from point to point,

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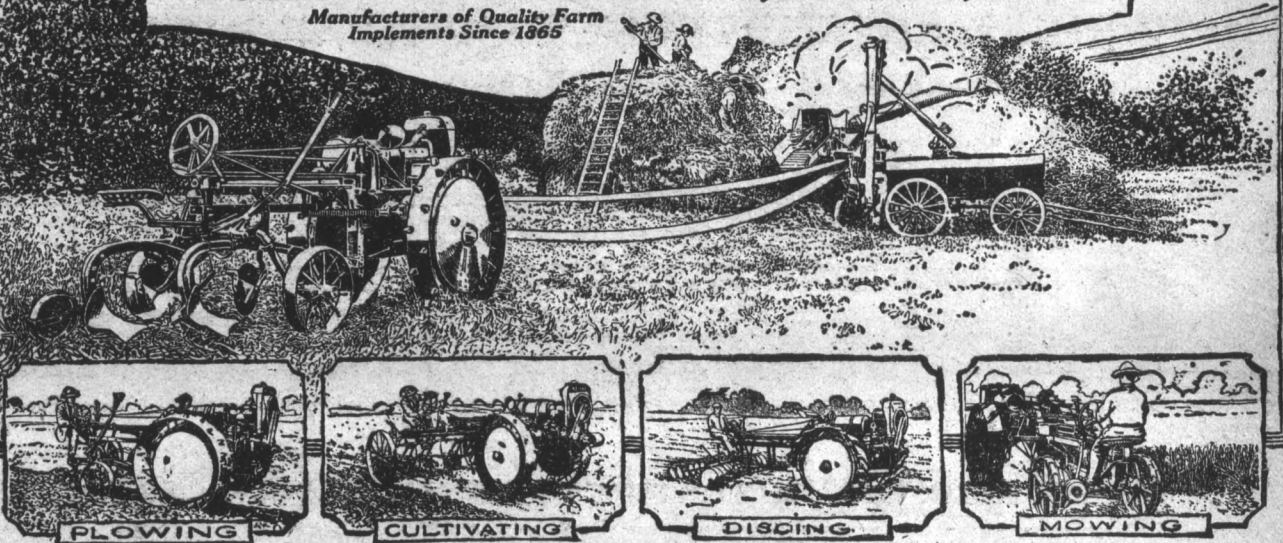
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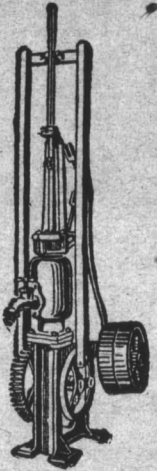
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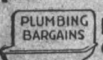
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"Beyond the Frontier"

(Continued from preceding page).

we lost much time in creeping along the curves.

The canoes kept closer together, never venturing to become separated, and the men stationed on watch in the bows continually called to each other across the tossing waters in guidance. Even De Artigny kept within sight, and made camp with us at night, although he made no effort to seek me, nor did I once detect that he even glanced in my direction. The studied indifference of the man puzzled me more than it angered, but I believed it was his consciousness of guilt, rather than any dislike which caused his avoidance. In a way I rejoiced at his following this course, as I felt bound by my pledge to Cassion, and had no desire to further arouse the jealousy of the latter, yet I remained a woman, and consequently felt a measure of regret at being thus neglected and ignored.

However I had my reward, as this state of affairs was plainly enough to Monsieur Cassion's liking, for his humor changed for the better, in spite of our slow progress, and I was pleased to note that his watchfulness over my movements while ashore noticeably relaxed. Once he ventured to speak a bold word or two, inspired possibly by my effort to appear more friendly, but the raw, disagreeable atmosphere furnished me with sufficient excuse to snuggle down beneath the blankets, and thus ignore his presence.

I passed more of those days thus hidden from sight, only occasionally lifting my head to peer out at the gray, desolate sea, or watch the dim, mist-shrouded coast line. It was all of a color—a gloomy, dismal scene, the continuance of which left me homesick and spiritless. Never have I felt more hopeless and alone. It seemed useless to keep up the struggle; with every league we penetrated deeper into the desolate wilderness, and now I retained not even one friend on whom I could rely.

As Cassion evidenced his sense of victory—as I read it in his laughing words, and the bold glance of his eyes—there came to me a knowledge of defeat, which seemed to rob me of all strength and purpose. I was not ready to yield yet; the man only angered me, and yet I began dimly to comprehend that the end was inevitable—my courage was oozing away, and somewhere in this lonely, friendless wilderness the moment I dreaded would come, and I would have no power to resist. More than once in my solitude, hidden beneath the blankets, I wiped tears from my eyes as I sensed the truth; yet he never knew, nor did I mean he should.

I had no knowledge of the date, nor a very clear conception of where we were, although it must have been either the fourth or fifth day since we left Port du Morts. The night before, we had camped at the mouth of a small stream, the surrounding forest growing down close to the shore, and so thick as to be almost impenetrable. The men had set up my tent so close to the water the waves broke scarcely a foot away, and the fire about which the others clustered for warmth was but a few yards distant.

Wrapped in my blankets I saw De Artigny emerge from the darkness, and approach Cassion, who drew a map from his belt pocket, and spread it open on the ground in the glare of the fire. The two men bent over it, tracing the lines with finger tips, evidently determining their course for the morrow. Then De Artigny made a few notes on a scrap of paper, arose to his feet, and disappeared.

They had scarcely exchanged a word and the feeling of enmity between them was apparent. Cassion sat quiet, the map still open, and stared after the younger man until he vanished in the

darkness. The look upon his face was not a pleasant one.

Impelled by a sudden impulse I arose to my feet, the blanket still draped about my shoulders, and crossed the open space to the fire. Cassion hearing the sound of my approach, glanced around, his frown changing instantly into a smile.

"Ah, quite an adventure this," he said, adopting a tone of pleasantry. "The first time you have left your tent, Madame."

"The first time I have felt desire to do so," I retorted. "I feel curiosity to examine your map."

"And waited until I was alone; I appreciate the compliment," and he removed his hat in mock gallantry. "There was a time when you would have come earlier."

"Your sarcasm is quite uncalled for. You have my pledge relative to the Sieur de Artigny, Monsieur, which suffices. If you do not care to give me glimpse of your map, I will retire again."

"Pouf! do not be so easily pricked. I spoke in jest. Ay, look at the paper, but the tracing is so poor 'tis no better than a guess where we are. Sit you down, Madame, so the fire gives light, and I will show you our position the best I can."

"Did not De Artigny know?"

"He thinks he does, but his memory is not over clear, as he was only over this course the once. 'Tis here he has put the mark, while my guess would be a few leagues beyond."

I bent over, my eyes seeking the points indicated. I had seen the map before, yet it told me little, for I was unaccustomed to such study, and the few points, and streams named had no real meaning to my mind. The only familiar term was Chicagou Portage, and I pointed to it with my fingers.

"Is it there we leave the lake, Monsieur?"

"Ay the rest will be river work. You see this stream? 'Tis called the Des Plaines, and leads into the Illinois. De Artigny says it is two miles inland, across a flat country. 'Twas Pere Marquette who passed this way first, but since then many have traversed it. 'Tis like to take two days to make the portage."

"And way up here is Port du Morts, where we crossed the opening into Green Bay, and we have come since all this distance. Surely 'tis not far along the shore now to the portage?"

"Mon Dieu, who knows! It looks but a step on the map, yet 'tis not likely the distance has ever been measured."

"What said the Sieur de Artigny?"

"Bah! the Sieur de Artigny! ever it is the Sieur de Artigny. 'Tis little he knows about it in my judgment. He would have it thirty leagues yet, but I make it we are ten leagues to the south of where he puts us. What, are you going already? Faith, I had hopes you might tarry here a while yet, and hold converse with me."

I paused, in no way tempted, yet uncertain.

"You had some word you wished to say, Monsieur."

"There are words enough if you would listen."

"'Tis no fault of yours if I do not. But not now, Monsieur. It is late, and cold. We take the boats early, and I would rest while I can."

He was on his feet, the map gripped in his hand, but made no effort to stop me, as I dropped him a curtsy, and retreated. But he was there still when I glanced back from out the safety of the tent, his forehead creased by a frown. When he finally turned away the map was crumpled shapeless in his fingers.

The morning dawned somewhat warmer, but with every promise of a

storm, threatening clouds hanging over the water, sullen and menacing, their edges tipped with lightning. The roar of distant thunder came to our ears, yet there was no wind, and Cassion decided that the clouds would drift southward, and leave us safe passage along the shore. His canoe had been wrenched in making landing the evening before, and had taken in considerable water during the night. This was bailed out, but the interior was so wet and uncomfortable that I begged to be given place in another boat, and Cassion consented, after I had exhibited some temper, ordering a soldier in the sergeant's canoe to exchange places with me.

We were the last to depart from the mouth of the stream where we had made night camp, and I took more than usual interest, feeling oddly relieved to be away from Cassion's presence for an entire day. The man irritated me, insisting on a freedom of speech I could not tolerate, thus keeping me constantly on defense, never certain when his audacity would break bounds. So this morning it was a relief to sit up, free of my blanket, and watch the men get under way.

We may have proceeded for half a league, when a fog swept in toward the land enveloping us in its folds, though we were close enough to the shore so as to keep safely together, the word being passed back down the line, and as we drew nearer I became aware that De Artigny's boat had turned about, and he was endeavoring to induce Cassion to go ashore and make camp before the storm broke. The latter, however, was obstinate, claiming we were close enough for safety, and finally, in angry voice, insisted upon proceeding on our course.

De Artigny, evidently feeling argument useless, made no reply, but I noticed he held back his paddlers, and permitted Cassion's canoe to forge ahead. He must have discovered that I was not with Monsieur, for I saw him stare intently at each of the other canoes, as though to make sure of my presence, shading his eyes with one hand, as he peered through the thickening mist. This action evidenced the first intimation I had for days of his continued interest in my welfare, and my heart throbbed with sudden pleasure. Whether, or not, he felt some premonition of danger, he certainly spoke words of instruction to his Indian paddlers, and so manipulated his craft as to keep not far distant, though slightly farther from shore, than the canoe in which I sat.

Cassion had already vanished in the fog, which swept thicker and thicker along the surface of the water, the nearer boats becoming mere indistinct shadows. Even within my own canoe, the faces of those about me appeared gray and blurred, as the damp vapor swept over us in dense clouds. It was a ghastly scene, rendered more awesome by the glare of lightning which seemed to split the vapor, and the sound of thunder reverberating from the surface of the lake.

The water, a ghastly, greenish gray, heaved beneath, giving us little difficulty, yet terrifying in its suggestion of sullen strength, and the shore line was barely discernible to the left as we struggled forward. What obstinacy compelled Cassion to keep us at the task I know not—perchance a dislike to yield to De Artigny's advice—but the sergeant swore to himself, and turned the prow of our canoe inward, hugging the shore as closely as he dared, his anxious eyes searching every rift in the mist.

(Continued next week.)



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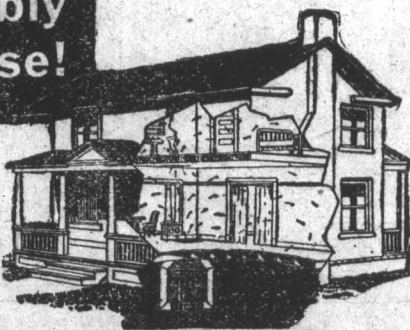
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Money In Bush Fruits

By M. N. Edgerton

ALTHOUGH there is not the money to be made in growing bush fruits that there is in the growing of strawberries, a fair profit may be obtained with proper culture and favorable market conditions. While the yield per acre is very much less than with strawberries, this difference is partly offset by the longer bearing period of bush fruits. Strawberries will not yield highly profitable crops longer than for two seasons, while the bush fruits will yield profitable crops through a term of ten to fifteen years, depending upon the sort and the treatment given. The market for bush fruits is necessarily limited. None of the bush fruits compare with the strawberry in popular favor. Ordinarily, the market is limited to nearby towns, both because of the limited demand and the inferior shipping qualities of these fruits. No grower can profitably substitute bush fruits for strawberry growing; nevertheless, where land and labor is available and market demands adequate at remunerative prices, a grower may easily make bush fruits profitable as an adjunct to strawberry growing.

Bush fruits are relatively deep rooting plants. Any soil that will produce profitable crops of strawberries, or grain, will be suitable to grow good crops of bush fruits. The soil should be rich as a matter of course, and deep plowing practiced when fitting. Because of deeper rooting habits the bush fruits should be set rather deep, say about four inches below the surface level. The roots of the plants should be well protected from air and sun while out of the ground and the soil thoroughly tamped about them when setting, that there may be no loss of plant vitality through drying of roots, and that capillarity connection may be restored in the disturbed soil at the earliest moment. Efficiency in method of handling and setting are imperative to a quick start and a strong rapid growth in the planting.

Directly the work of setting is finished, tillage should begin by a thorough stirring of the entire surface, which work should be repeated at intervals as may be required to maintain the ideal earth mulch. Ordinarily every six or seven days will suffice. However, untimely showers very frequently make it necessary to depart from the regular routine. Inefficiency in this phase of the work spells failure. Efficient tillage is necessary to conserve soil water for plant use, and to retain that friable mellow condition of soil grains so that they will promote the best growth of plant. Maximum growth in cane requires a strong, well developed root system, and this is impossible to secure in the presence of a compact water-starved condition of soil grains. Perpetual efficiency in the earth mulch is a fundamental necessity of successful bush fruit culture.

A secondary purpose of efficient tillage is weed subjugation. Weeds rob the plants of essential plant food and sunshine, resulting in a spindling unhealthy growth of cane. Excessive cane growth should be treated as weeds; for any growth in canes in excess of that required to produce a maximum crop of fruit reduces profits as much as weed growth. If the canes are permitted to grow so thickly as to crowd each other, and weeds and grass allowed to creep in, one might far better have not started the plantation. Not only is it necessary to restrict the plants in the quantity of cane growth, but it is equally as essential to restrict the quantity of fruit ripened by individual canes. If this is not done not only will the quality of the fruit harvested be inferior, but exhaustion of plant vitality will result from overbearing. Proper restriction is secured by cutting away about one-third of each cane. This may be done any

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Cuts from both sides of limb and does not bruise the bark.

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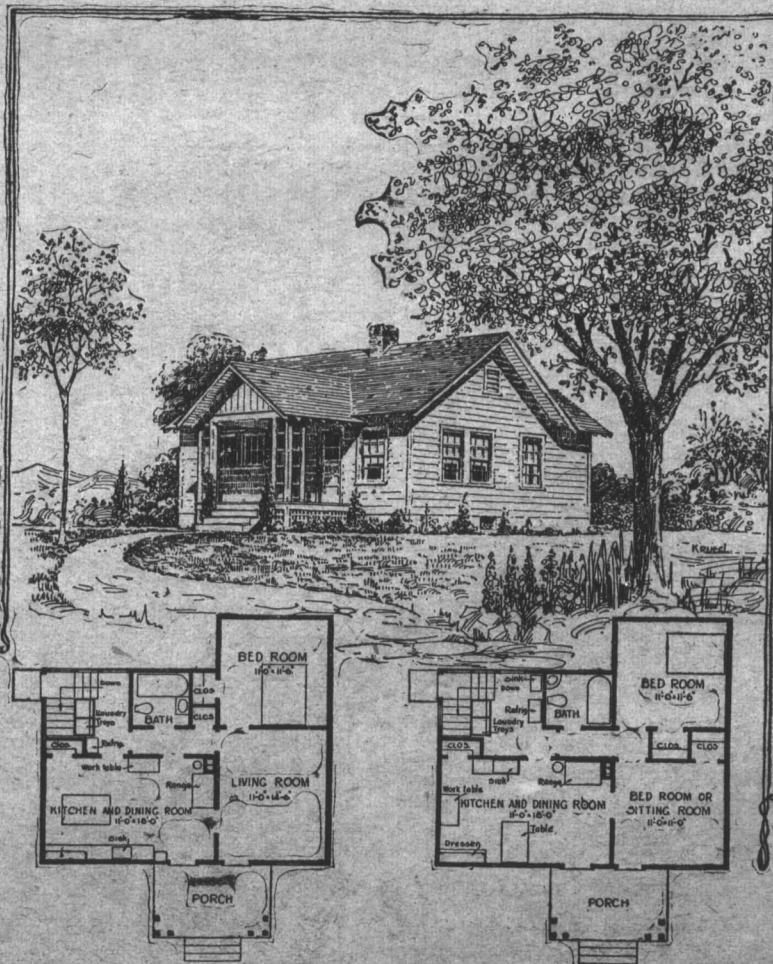
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Destroy the fungi and worms, and thus be sure of large yields of perfect fruit.

Excelsior Spraying Outfits and Prepared Mixtures are used in large orchards and highly endorsed by successful growers. Write for our money-saving catalog, which also contains a full treatise on spraying Fruit and Vegetable crops.
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Have You a Good Tenant House? The Farm Tenant and His Family Appreciate a Comfortable Cottage Home Surrounded by Trees and Flowers.

Cherry, Pears, Apple and Plum trees 15c each, all kinds of small fruit. Catalogue free. ALLEN'S NURSERIES, Geneva, Ohio



time after leaves drop in fall before the spring growth begins. I prefer to do the work early in the spring. If pruned in late fall or early winter it is quite probable that extra pruning will be required the following spring to remove that growth which was winter-killed. It is important that the work of pruning be done before spring growth begins to secure full benefit. Spring growth removed with spring pruning represents just so much loss in plant energy. If spring growth is allowed to reach the blooming stage before pruning the loss is excessive because of the highly vitalized forces employed in pollen secretion. Little or no benefit accrues from pruning after this stage of growth obtains.

Spring cultivation should begin as soon as soil conditions permit, and repeated throughout the active growing period of the canes at intervals required to maintain an efficient earth mulch. As proper wood ripening is necessary to safe wintering, any method of culture that makes for normal growth in canes and proper ripening of the wood should be utilized. It is possible to materially assist in the work by efficient tillage, a system of tillage that will promote continuous growth of cane throughout the summer. Proper ripening of the wood may be materially assisted by the use of a cover crop. For this purpose I know of nothing better than oats. Grain for the cover crop should be sown and cultivated in with the last cultivation of the summer, in August or the first of September. Sown at this time considerable growth of top will obtain by the time freezing weather arrives.

I believe a cover crop is essential to success. Its benefits are two-fold. It assists wood ripening of canes by appropriating in its growth soil water and plant food which might otherwise be appropriated by the canes in late fall growth; besides it promotes land productivity; by appropriating nitrates set free in the soil and which might not be taken up by the fruit canes after active growth has ceased and by contributing soil humus.

M. N. EDGERTON.

LONG WARM SPELL DANGEROUS TO PEACHES.

THE long spell of unseasonably warm weather is putting the peach crop in a perilous position. While the buds may show no apparent change, it is declared that sap has been running up and that buds are not as fully dormant as they should be in late winter. Should cold weather come on again by degrees giving the sap opportunity to work down and the buds to harden again, likely no damage would be done but should there come a sharp drop to near the zero mark, growers say it is very probable that injury would result. Ordinarily, peach buds here are safe enough down to eight or ten degrees below zero, and sometimes even lower if conditions favor and the buds have been well hardened in. The safety of the crop at such times hinges on the dormant condition of the buds, entire absence of sap, air drainage, dark days so that the sun does not warm the frozen wood too much at mid-day and other conditions.

Peach scares in late winter occur quite regularly and are often followed by a bumper crop, but with the acreage of trees seriously cut down by the extreme cold of last winter, there can not be any very general damage to buds this winter if anything like a big crop is to be produced this season.

A good cow of inferior breeding is not qualified to drop a good calf.

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To the boys going back to civilian life

You will need new clothes almost the first thing.

If you were not a Styleplus wearer perhaps these facts will convince you:

- We concentrate our volume which enables us to manufacture at low cost.
- We attach a sleeve ticket on every Styleplus garment at our factory which plainly marks the price.
- Styleplus Clothes have *earned* the reputation of always being exceptional in value, and in style.
- Styleplus are for the men who want a reliable quality—and real style—in the medium price range.

Buy your clothes in a store where you can see the different styles and patterns, try on the clothes and get a satisfactory fit. It is the only way to be sure you are getting exactly what you want. So, to get real clothing satisfaction, visit your local Styleplus Store today!

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More Heat Less Fuel One Register

Your entire home perfectly heated all the time at a big annual saving and no mussy stoves or grates to bother with—that's what the Williamson Pipeless Furnace guarantees you. Only one fire to feed and take care of. Just one register. No torn-up floors and partitions. No warm air pipes or

cold air duct in basement. Space, annoyance, time, labor, fuel—all saved. Also adapted for stores, halls, churches, schools, etc.

WILLIAMSON Pipeless Furnace

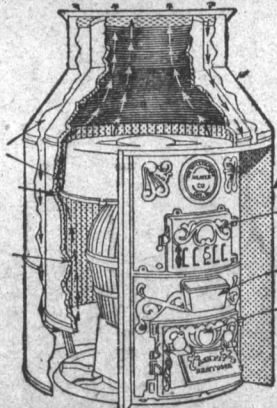
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"To Love and to Labor is the Sum of Living"—Moore

WOMEN'S SECTION

New Garments from Old

No. 2, Success an Inspiration to Further Efforts

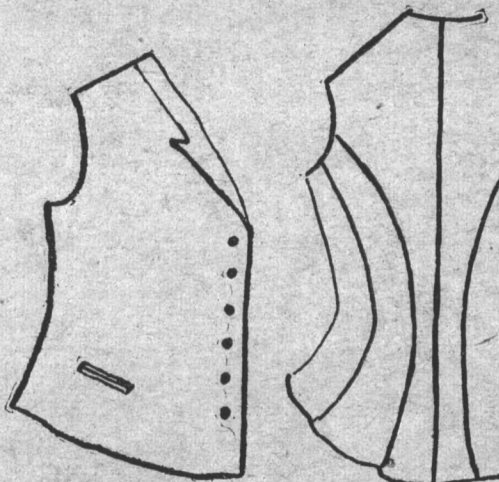
A FRIEND, inspired by the success of my suit, brought out another old suit which presented different problems, the solution of which seemed equally difficult. As in the previous case, the skirt was the least difficult to make. This one had eleven wide gores with a pleat on one edge of nine of them. The material was a grey wool mixture almost resembling tiny checks, which fact rendered the seams almost invisible when well pressed. A well-fitting, straight skirt with front panel and three straight gores on either side was evolved from seven of the original flaring gores.

Again the jacket looked impossible. It was short, with set-in pockets in front and shaped pieces in the back. (See Diagram D). A pattern in a recent fashion book furnished the idea and the remaining four gores of the skirt supplied the material for a new jacket. The old leg-o'-mutton sleeves were cut down to make new ones. The old fronts, re-cut, formed the yoke and side pieces above the belt. (See Diagram E). Material from the skirt was used for the shirred fronts and the entire back. The old back and remaining bits of skirt were pieced together to finish out the peplum. The success of this piecing is due to great care in cutting and to the weave of the material as previously mentioned. The old skirt facing cut on the bias, was lined with pieces cut on the straight of the goods and used for the new belt

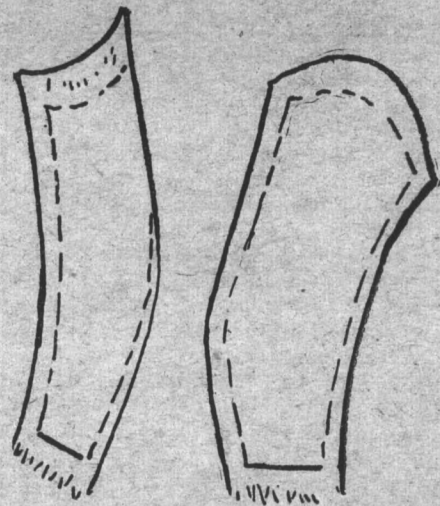
which crosses in front and ties in the back. The belt thus covers much piecing at the waist line and holds the shirred fronts in place. New velvetreen in a harmonizing shade of blue forms the collar and trims the sleeves with narrow bands. It was necessary to buy new lining. Snap fasteners, sewed beneath large, smoked-pearl buttons, close the front.

In the case of this suit, the material looked dingy and unattractive in the old garment. Sponging and pressing revealed a soft grey woolen cloth with sufficient body to make frequent pressing unnecessary. The new spring suit, made on fashionable and becoming

The coat was first ripped apart, then the entire suit, lining included, was washed and pressed. The result was beyond all expectations, the material coming out like new. The only alteration necessary in the skirt was to lift it an inch higher on the belt, close the



D—Front and Back of Old Jacket.



F—Method of Cutting New Dress Sleeves from Worn Silk Lining.

back opening and open it at the left side front. The lines of the skirt were straight, with the exception of side panels trimmed with small buttons. Cutting out the panels would have made the skirt too narrow, but the removal of the buttons made the slight flare less conspicuous.

The possibility of covering the holes in the skirt was next considered. The solution took the form of a long coatee without sleeves, made from the old coat. Diagram G shows the original pieces of the coat. The seams were sewed up as before, the extra fullness, both above and below the waist line, being laid in deep pleats. Section B, originally pleated to fit smoothly over the hips was now gathered and the waist line covered with the original belt. The buttonholes on one front had been cut off, so the other front was cut to correspond. This left the coatee to correspond. This left the coatee to correspond. This left the coatee to correspond.

lines from an old, out-of-date garment could not be purchased this year for less than thirty dollars. The actual cost of materials for its reconstruction is as follows:

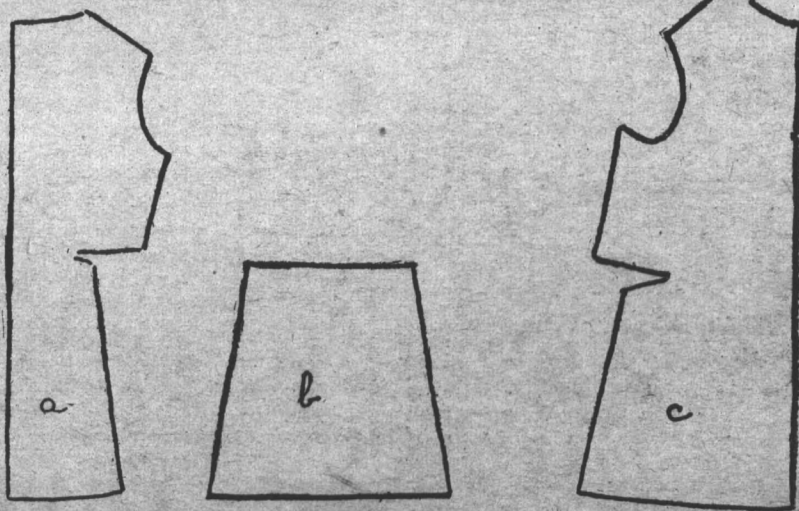
Two yards sateen lining.....	\$1.00
One-third yard velvetreen.....	.58
Canvas for collar lining.....	.12
Snap fasteners.....	.10
One spool each, silk and cotton thread.....	.19
Total.....	\$1.99

A New Dress From An Old Suit.

The third garment turned out from our "transformation shop" was a practical dress, suitable for any occasion,



E—Front and Back of New Jacket. The Belt Covers the Piecing.



G—Pieces of Old Blue Coat After Ripping.

made out of a blue gaberdine coat suit. The armholes and neck were cut out. The suit was soiled, the skirt worn in a trifle, faced and stitched. The blue mesaline coat lining made a very good foundation waist. Skirt sections were shirred in for fronts, and arm holes and waist line, and soiled from much wearing. The sleeves



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(Twill Cloth)

Uncle Sam's Boys and Girls both wear garments of **IRONCLAD KHAKI** the patriotic economy cloth. It's fast color—can't fade and wears like leather. Be sure the Ironclad "army" label and Guarantee Bond are in every khaki work shirt, pants, overalls and coveralls you buy. **Garments sold by dealers—everywhere**

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Wanted Young Ladies of refinement, to enter training school for nurses. **SAGINAW GENERAL HOSPITAL, Saginaw, Mich.**

Gladioli are most beautiful of garden flowers. My mixture is extra good. 12 bulbs to bloom this year and 25 to bloom next year, only 25c prepaid.

Enough for 20 feet of row of finest Spencer Sweet Peas you ever saw. P. L. WARD, Plantsman, Hillsdale, Mich.

Seed Barley high yielding six rowed, heard 1918 crop pure Wisconsin Pedigree, grown especially for seed, re-cleaned polished and graded, free from smut, hand picked for oats. Extra quality, ready for your drill. \$2.15 bu. sacks free. Samples.

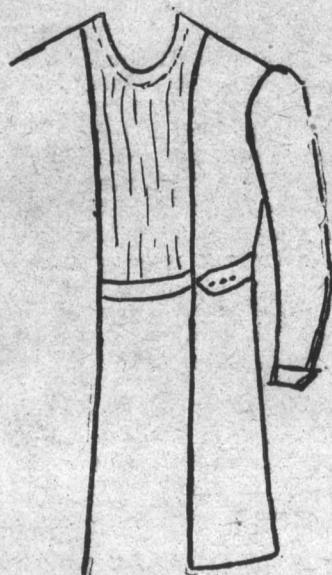
SEED CORN. Old reliable Mich. Yellow Dent. Home grown, fire-dried and tested. Also regenerated Swedish Select and Scottish Chief Oats. Circular and samples on request.

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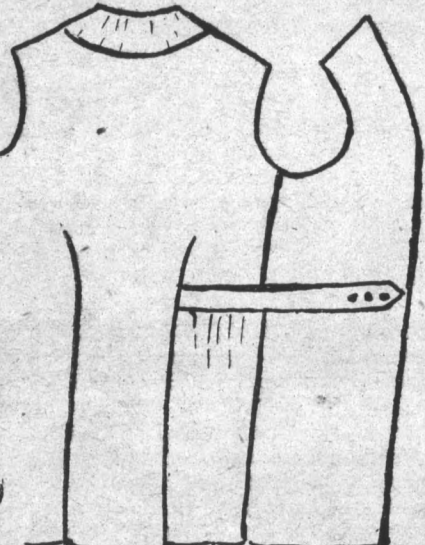
Champion Beardless Manshury or Silver King Bearded Barleys: Early Scottish Chief White Oats: **PRICES DOWN.** FRANK BARTLETT, Dyren, Mich.

White Sweet Clover seed Test 99.94% pure, germ. 76.6 Write for sample and C. A. THOMAS, Shepherd, Mich.

were large enough so that when a dress sleeve pattern was laid on, the frayed parts were cut away. (See Diagram F). Turn-back cuffs cut from skirt sections of the lining, made the sleeves long enough. The skirt was then stitched fast to this waist, and the dress, with long coat, silk sleeves and fronts, was complete. (See Diagram K). The value of the dress, which has still many months wear in it, is near ten dollars. No money was



K—Front of Dress with Round Neck.



Back and Side-front Ready for Fitting.

spent in its reconstruction. And when its owner has ceased to wear it, there will still be enough good material in it for a child's garment.

"How Do You Do It?"

"Yes, it may be very fine to make over your old clothes, but what if you don't know how? I am sure mine would not be fit to wear!" Experience is the best teacher, and it is never too late to begin. If you think there is nothing in the house worth the making search your closets and chests again. You will be surprised at what you find. Shawls laid away for years are being brought out for the new dresses with long fringe-trimmed panels. Mourning veils of silk or wool crepe are now made into serviceable blouses. Do not be afraid to use for dresses, materials originally intended for other purposes. A black broadcloth coat made skirt and sleeves. Over a foundation waist of old silk was draped an overblouse of curtain madras, the pattern a dull blue on a black background. The result was both fashionable and artistic. Without being told, no one knows what the blouse material is. Dyes will often transform otherwise useless garments.

(A third article will give valuable suggestions on the preparation of materials to be made over, and the fitting and final pressing of garments).

HOME QUERIES.

Household Editor.—Would you kindly tell me how I could get the print off of muslin feed bags? There is quite a lot of print on them.—Mrs. E. W. J.

Soak them in cold water until the color rubs out in your hands.

"Yes, I tried it, but I went back to Royal."

This is the experience of most women who have been tempted to try so-called cheaper baking powders, which almost always contain alum, and often leave a bitter taste in the food.

ROYAL Baking Powder

Absolutely Pure

Made from Cream of Tartar derived from Grapes

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5 ACRES 8 room house, good seller, small barn, fine red raspberry patch, some apples, 4 1/2 miles southeast of Olivet at Lee center, at \$700 and 30 of land, 4 1/2 miles East of Charlotte on the island road, a 9 room house, cement cellar, good barn gambrel roof 40 x 50 ft., other buildings, good orchard, clay soil some muck, a good home at a bargain. Address to L. G. DePEW, R. 3, Charlotte, Mich.

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has some unsettled, low priced lands open to purchase with school, telephone, mail, market and a state loan if needed. Ask for bulletins. Department of Immigration, Chas. McCaffree, Commissioner, Capitol Q-84, Pierre, S. D.

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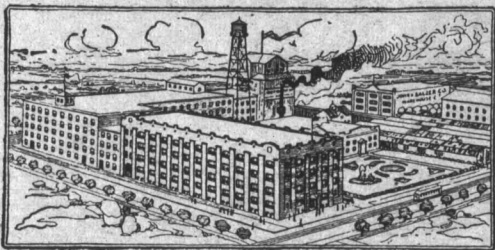
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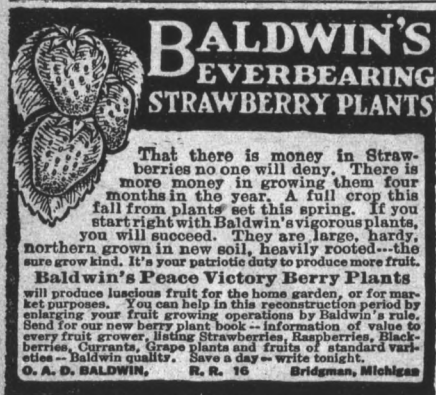


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Baldwin's Peace Victory Berry Plants will produce luscious fruit for the home garden, or for market purposes. You can help in this reconstruction period by enlarging your fruit growing operations by Baldwin's rule. Send for our new berry plant book—information of value to every fruit grower, listing Strawberries, Raspberries, Blackberries, Currants, Grape plants and fruits of standard varieties—Baldwin quality. Save a day—write tonight.

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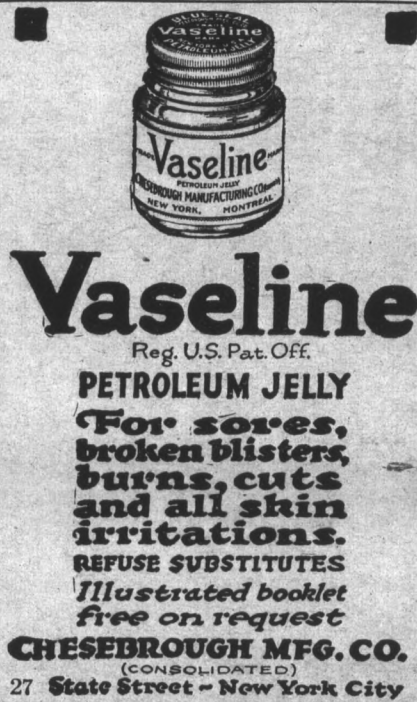
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Our Boys' and Girls' Page

The Way the Sheep Came

By E. L. Vincent

IN our day boys and girls would think it pretty hard lines if they had to wait four years for a single sheep. Looking ahead, that does seem like a long time, and things move swiftly in our day. It is not so long ago, however, that a great many men and women can well remember how sheep were "let out" to double once in four years and really how fast the years sped round even then, so that almost before they knew it they had their original sheep or lamb, together with another one gained under the plan in those days in vogue among sheep farmers.

My father used to take sheep from neighbors who had not as much pasture as they needed for the maintenance of a large flock, keep them on his farm, care for them, feed them, and then at the end of four years return to the neighbor double the original flock, retaining the rest as his share of the copartnership gain. I well remember how fast those sheep reduplicated. Of course, it was a good while to wait and to work, but men were not in as big a hurry in those days before the great Civil War in this country, and perhaps people had more patience to wait, anyhow.

Another farmer I know had a bit of interesting experience taking sheep in this way. He had a flock of ewes and being in need of a ram to run with them, he got one of a man who lived a little way from his home. He was a fine fellow, with big horns curled about beautifully. I am sorry to say that these horns proved to be his undoing in the end. After the ram was fully grown, the farmer and a neighbor marked their sheep so that they could be told apart, turned them into the road and started for a creek a little way off to wash them for the coming shearing. The neighbor had in his flock a powerful ram, quite a match for the one with the fine crooked horns; and the two flocks had scarcely struck the road for the washing hole when these veterans locked horns for what proved to be a deadly combat. Backing off several feet, they would come at each other, head down, with a bang that could be heard a long way off. It would not have been healthy for any man to have been caught between those stone-hard heads. And the farmers could do little except stand there and watch the contest to an end.

Over and over again the rams backed away and rushed upon each other, head to head. But suddenly the sheep that had been rented of the neighbor, dropped down, his head hanging limp after a tremendous blow against the caput of his antagonist. His neck had been broken and that was the end of him. I do not know whether the farmer had to make the dead sheep good with his neighbor or not, but I suppose that according to the strict sense of justice that prevailed in those days that would be the natural thing to do.

This same farmer not many years afterward made an offer to his four oldest boys and girls. It was this: "If you will plant corn enough and hoe it so that you have earned two dollars, I will give you a ewe lamb. We will let the lamb run with the rest for four years and then you will have another. Leave the two another four years and you shall have four, and so on as long as you like."

Two boys and two girls accepted the proposition and went at the planting and hoeing with a vim. I do not know now how much they were to receive for a day's work, but it could not have been more than a few cents, for they worked away a good many days before they had earned the stipulated two dollars. Wages were not as high in those days as they are now. I know a number of the grandchildren who are now earning twenty dollars a week in a factory that has come in not far from the old farm home.

The farmer was very fair with his boys and girls. It was a great day when they all went down to the sheep pasture and picked out the lamb which was to be their very own, the foundation of their prospective fortune. A nice ewe lamb was picked out for each of the little workers and they went back to wait for time and the good care given by the father to bring them their other sheep, the sheep which came as the increment of their investment. That project came near to being a disastrous one for the farmer. It would have compelled him to have sold off a large part of his own original flock to make room for the newcomers if part of the children had not been in a hurry to realize upon their investment, and called for the sheep that were their due. The farmer stood right by his promise, and when the boys and one girl asked that they be given their sheep to be sold, he turned them over, helped about selling the little flock and gave them the money.

One of the girls was not in as big a hurry as the rest, however, and she left her lamb for what would not seem a very long time. She was by this time quite a big girl and away at school. Finally when home one year on her mid-year vacation she and father figured it out that she was entitled to eight sheep as her profit on the work bestowed upon that corn field in the days gone by. The wages she received did not seem very big in the time of it, but if each sheep sold for five dollars, and I suppose that would have been a fair price at the time they had been disposed of, the sum total would have been forty dollars—pretty fair interest for the capital invested. This was the father's way of helping his boys and girls to cultivate the habit of earning and saving and it stood them in good stead as long as they may live. Habits are like sticks bound in a bundle, broken only after mighty effort.

Let me go on a little further with my story, leaving the sheep for the



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Lay 40 to 50 eggs each per year. Why raise chickens to eat when these are much more profitable and raised as easily? Weigh 3 pound at six months, and bring \$1.00 a pound in the market. Set the eggs under chickens—feed and care for the young the way you would chickens. Are economical as they only require one-half as much food. Are very hardy and not subject to disease. Best eating bird in America. Eggs guaranteed from vigorous healthy unrelated stock.

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Lay 50 to 60 eggs per year. We guarantee our breeding stock to be the best in the country as they are entirely wild trapped Mallards and not the coarse semi-wild strain.

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Our book, "CARE OF BABY CHICKS," and a package of GERMONE are the best insurance against chick losses. Those formerly losing more than half their hatched now raise better than 90 per cent. To you who have never tried GERMONE, we will send postpaid, book and package as above. You pay, if satisfied, 75c; 60 days' trial. We trust you.

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POULTRY

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Every farmer, poultryman and poultrywoman in the State should have a copy of this catalog; it explains pure bred poultry stock that is practicable for the farmer. If you are interested in poultry, send for a copy.

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Everything indicates that there will be more orders for Chicks this year than can be filled. Orders are already booked for future delivery; those who want to be sure of Chicks should order now and have them shipped later when you will want them. Our Breeds are:

Barred, White and Buff Plymouth Rocks.
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White and Silver Laced Wyandottes.
Black and White Orpingtons.
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Single Comb and Rose Comb White Leghorns.
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Eggs from any of the foregoing breeds for settings or in quantities for incubators. Special price for 500 to 1000 eggs during season; and for eggs for early broilers.

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Special in Cockerels—We have about 30 Barred Rocks of special breeding and weight that we will sell, if taken at once, at \$2.50 to \$3.50 each; about 20 S. C. White Leghorns at \$2.00 to \$3.00; a few high class R. C. Rhode Island Reds; White and Buff Rocks; R. C. White Leghorns; and Anconas.

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If you really want poultry stock this season, especially Day Old Chicks, you should order now; stock can be shipped later.

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Baby Chicks Bred-to-lay S. C. W. Leghorns. The high cost of feed we have culled our breeders closely, saving the best; therefore, we will have to advance the price to 15c each for March and April. Book orders early. Sunnybrook Farm, Hillsdale, Mich.

Baby Chicks: S. C. White and Brown Leghorns. Best of feed we have culled our breeders closely, saving the best; therefore, we will have to advance the price to 15c each for March and April. Book orders early. Sunnybrook Farm, Hillsdale, Mich.

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Barred Plymouth Rock Cockerels, fullblooded each; prize winners for 17 years. J. A. BARNUM, Union City, Mich.

Additional Poultry Ads. on Page 353

time being. The boys and girls of that farmer were a sturdy lot. It may be that I shall be called extravagant in my statements when I say that the girl who had the eight sheep as her little patrimony from her father's flock, did many kinds of farm work except plant and hoe corn. She dug potatoes, together with her other brothers and sisters, at one cent a bushel. Each of them received a like amount. If they dug twenty-five bushels in a day, they all had twenty-five cents at night, making a dollar for four workers. The girl dug in a well that was put down in the hard clay soil by the farm house; she dug many a rod of ditch, and helped to stone it up, working till her fingers were worn quite to the quick; she carried sap to make maple sugar and kept the fire burning when father was up at the barn doing the chores. They were ready for any job in the house or out of doors. The boys were capable of handling any team on the farm, and some pretty fiery steeds were kept in those days. Hard work, but they were all healthy and it did not hurt them to know how to do everything that came to be done.

And they all "came out" well. The girl of the eight sheep went away to a state normal school, graduated and became in good teacher in grade, academy and high school. Others have made their mark and none of them but would say that those days away back yonder on the farm were the happiest days of their lives. They are now all helpful citizens of the commonwealth. Who knows what a different story might have been told under other circumstances. A moment ago I spoke about some of the grandchildren of that man who are in shops earning big wages. They get more in a single week than their fathers and mothers saw at their age in ten years. But I do wonder if they are any happier for the money they earn? Sometimes I fear they are not. But anyway, life goes on fast. Things have surely changed since those far-off days.

But what do you think about it? Would it not be a good plan for you, boys and girls of the farm today, to make father a proposition? He needs help, especially now when hired men are scarce and hard to find. There are a good many things you can do in the course of the season. On some farms it may be one thing, on some another. Do some of these odd jobs and ask father if he will give you a lamb in payment. If he has sheep on the place, the chances are that he would be glad to do it. If he does not keep sheep, here may be an opportunity to begin, for sheep at the present time are highly profitable. The wool is high and scarce, while mutton now brings a good price and this will be so for a good many years from present appearances. Any father probably would be glad to buy a sheep for you and fix up the fences well for your lamb to pasture. It may be that you and father can agree on some different term than four years. I have no doubt in the olden times some pastured and cared for sheep five or six years before they received their "double." Whatever the term, let father have the wool and any lambs that are born, as his pay for the feed and keeping, you simply waiting for the time to come round when you shall receive your extra lamb as your share of the profit.

It would be a good thing for you to join other boys and girls in this work, forming a little club of your own. In some parts of the east boys and girls have such clubs and they get up a great deal of interest by meeting and talking things over and exhibiting their sheep and lambs at the local fairs. This awakens more and more interest in sheep and will after a while bring sheep back into the good place they used to occupy in the farming operations of the country.

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CONSIDER that for over 87 years the one assurance of correct weights has been the name FAIRBANKS on a scale.

This merit is amply proven to you by successful service on thousands and thousands of farms everywhere — on wagon, stock and portable scales.



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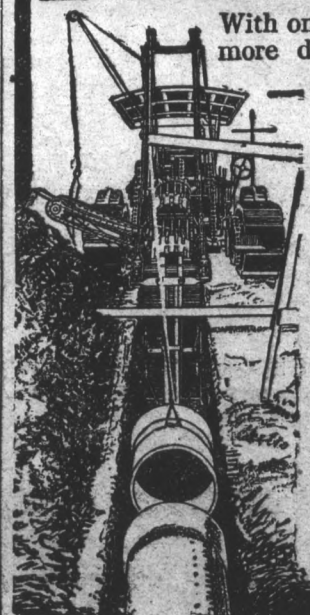
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A book of solid facts, tells how others are coining money, how they get the work, how much it costs to do it and all the details of operating.

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READ THIS LETTER
Work has been so plentiful that I have turned away more than I have done. The machine has given entire satisfaction and far exceeded my expectations. I find it very easy to average 130 rods working ten hours. The machine has been in operation for five months and during that time I have done work amounting to \$4000 which netted me \$2500.
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You Haven't A Moment To Lose
Get Your Hatching Outfit-Now!

Early hatches mean healthier chicks, bigger broilers, and more laying hens during the winter months, when egg prices are highest. Now is the time to start a Champion Belle City making money for you. Of course, the late hatches pay big, too, but why not get the extra profits from the early ones—besides you are sure to have the biggest hatches of strongest chicks when you use my

\$10⁹⁵ 140-Egg Champion Belle City Incubator

With Fibre Board Double-Walled construction that has led the field for over 13 years—Self-Regulated—Hot-Water Copper Tank—Thermometer Holder—Safety Lamp and Deep Nursery.

When ordered with my \$6.35 World Famous 140-chick Hot-Water Brooder—Double-Walled, big, roomy—guaranteed to raise the chicks—making a complete outfit—both only \$15.95.

Freight Prepaid East of Rockies Towards Express

And allowed to points beyond. You cannot get a better Hatching Outfit—used by Uncle Sam, leading Agr'l Colleges and over 740,000 successful poultry raisers.

With this Guaranteed Hatching Outfit and my complete Guide Book for setting up and operating, you are sure to have poultry in abundance. And you can easily

Share in My Special Offers of \$1000 in Gold. They provide easy ways to earn extra money. Save time—Order now, from this advertisement, or write for my big Free Catalog "Hatching Facts" before you order. Jim Bohan, Pres.

Belle City Incubator Co.
Box M14 Racine, Wis.



Fit Biddy to New Conditions

By Briant Sando

WHILE the price of eggs and fowl have advanced twenty-five to fifty per cent, the cost of feed, labor, lumber, hardware, etc., have doubled or trebled during the past few years. We have therefore changed our feeding methods in every way practicable to reduce costs; we have graded up our flocks by weeding out all the drones and poor layers; we get top prices for our produce by going direct to the consumer and eliminating tribute to middlemen; we avoid guesswork by keeping systematic records of our various methods and feeds, their costs and results; we sell or caponize all cockerels and male birds not absolutely necessary for breeding purposes; we grow small grains and green crops in the yards; we save all the poultry manure.

In feeding, we have almost had to forget that we ever used wheat for poultry. We have revised all our rations, regardless of tradition, to fit the grains and by-products now most available for poultry feeding.

We are using sour milk and buttermilk, and green cut bone in place of commercial meat feeds as much as possible. We are also utilizing several little patches of land for raising buckwheat, millet and similar small grains to which we formerly paid scant attention.

Here are some economical rations that are giving us excellent results:

Number 1.

Scratch Feed.—Two pounds cracked corn, one pound oats.

Mash.—Three pounds corn meal, one pound beef scraps.

Number 2.

Scratch Feed.—Seventy-five pounds cracked corn, twenty-five pounds oats or barley.

Mash.—Two hundred pounds of bran, one hundred pounds ground oats, one hundred pounds shorts, one hundred pounds corn meal, one hundred and twenty-five pounds fish or meat scrap.

Number 3.

Scratch Feed.—Cracked corn.

Mash.—One hundred pounds bran, one hundred pounds beef scrap, one hundred and fifty pounds wheat shorts, four pounds fine charcoal, three pounds fine salt.

In feeding these rations we try to have the fowls consume nearly equal portions of scratch feed and mash. Of the latter we give just what the hens will eat up clean in thirty minutes each afternoon.

With corn as the principal ingredient of the scratch feed, we avoid overfatness among the fowls by feeding green stuff liberally. Fowls not only relish fresh greens, but it is the cheapest form of food. We give our fowls practically all of it they will eat—twenty-five to thirty-five per cent of their total feed—and if it is appetizing we do not find the egg yield falling off.

We do not turn our flock into a yard grown up with tough, wiry grasses and weeds and say we are feeding greens. We grow succulent feeds, such as rape, kale, Swiss chard, clover and other crisp plants, especially for the hens. We also supplement the scratch feed with a liberal portion of sprouted oats each day. This is one of the cheapest and most palatable of foods.

Last summer we got fair results from our hens, although some days we fed little or no grain, by providing an abundance of greens, roots, animal

matter in the shape of insect food found on the range, and some milled product, usually bran. Most European poultry raisers have been compelled to resort to such measures, and they have managed to get along somehow. Corn is virtually unknown to them, and wheat and oats have long since been prohibited by their governments for poultry use.

Of course, no ration will produce such a large egg yield as grain carefully balanced with animal matter and green stuffs, especially during the fall and winter months. When we have cut the grain allotment too low, we have noticed that egg-production not only falls off, but most of the eggs are laid in the natural laying season—spring and summer—when the prices are low.

We are watching closer than ever before for hens which are unprofitable producers, or young birds on range which are not growing properly. By eliminating such fowls promptly, we reduce our feed bills, save labor, and give the remaining birds a much better chance.

A good many poultrymen who have been forced to reduce the size of their flocks have been surprised to find that their gross egg production has not been materially affected; they simply eliminated a lot of dead-beats and saved themselves useless work.

In making the selection of productive hens there are four main factors which we consider—health, comb, pelvic arch and the moult.

First, we get rid of any bird which is not perfectly healthy, strong and vigorous. We also watch the condition of the comb and retain the fowls with bright, soft combs. The bird which has ceased producing has a dull, dry comb, appearing small and shrivelled.

The pelvic arch or lay bones should be rather thin and pliable and spread apart the width of two or three fingers. When a hen stops laying these bones become harder and draw together.

Lastly, we find birds which moult in July and August are rarely profitable. Those which moult late, even in October and November, have proved by far the best producers.

Health and Vigor

Health and vigor should come first in building up a profitable flock of poultry. A hen may be a good layer but if she is at all constitutionally weak she will not be able to transmit vital powers to her offspring. It is all right to select breeders for egg production and fancy points, but vigor must come first or after several years of careful selection the breeder may find a lot of weak sickly birds in his yards which are incapable of being profitable. In breeding all kinds of live stock, vigor is essential and it cannot be neglected in the poultry yards.

It is difficult to improve a flock of poultry if the eggs for hatching are selected at random from the egg basket. It pays to have one or two fenced yards where the best breeders can be isolated. All professional poultrymen have fenced breeding pens but they are seldom found on the general farm. Much improvement can be made in the flock by fencing in a space which can be used for a short time in the spring for enclosing the breeders.

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The fertility and hatchability of eggs depends upon the condition of the breeding flock. Eggs from vigorous, healthy stock give big hatches of husky, profit-paying chicks.

Pratts Poultry Regulator

will quickly and naturally put your birds in fine physical shape, able to lay lots of highly fertile eggs which will hatch.

During the critical first three weeks feed

Pratts Baby Chick Food

and raise every chick. This true "baby food for baby chicks" is slightly higher in first cost than the coarse, inferior imitations and substitutes, but it is cheaper as measured by results. We guarantee this! It contains exactly the nutrients required to build bone, muscle and feather, and starts the chicks right. The extra chicks it saves and grows pay the entire cost of the Chick Food and leave an added profit.

Use the Pratts Poultry Regulator—Pratts Baby Chick Food combination this year and make this your biggest and best season. Your money back if YOU are not satisfied.

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You Take No RISK With An **Ironclad** 30 Days Free Trial 10 Yr. Guarantee Both \$14⁷⁵ Freight Paid

Think of it! You can now get this famous Iron Covered Incubator and California Redwood Brooder on 30 days trial, with a ten-year guarantee, freight paid east of the Rockies.

150 EGG INCUBATOR CHICK BROODER

Incubator is covered with galvanized iron, triple walls, copper tanks, nursery, egg tester. Set up ready to run. Brooder is roomy and well made. Order direct from this advertisement—money back if not satisfied or send for free catalog.



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Made of Redwood cov'd with Galv. Iron

30 DAYS FREE TRIAL 10 Year Guarantee

Don't take chances. Find out what an incubator is made of before buying. Catalog and sample of material used sent free. We will send you these two machines, freight prepaid East of Rockies on 30 DAYS' free trial.



Both Machines \$14⁷⁵ Freight Paid Only

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. Send today for our new 1919 catalog, free and postpaid.

Large Size 180 EGG INCUBATOR AND BROODER, BOTH \$17.25.

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Poultry Book Latest and best yet! 144 pages, 215 beautiful pictures, describes busy Poultry Farm handling 63 pure-bred varieties and BABY CHICKS. Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 136, Clarinda, Iowa

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How Many Eggs Will Pay for One Package?

THIS is the big reason for your trying one package of *Sleekene* right now. Any increase at all in your egg production means so much more money in your pocket. So many times more than the cost of this tonic!

SLEEKENE

Mix it with the mash!

In wet mash—one tablespoon full for every twenty hens, two or three times a week. In dry mash—a half package to a whole bushel of feed.

If your dealer hasn't *Sleekene*, send his name with 50 cents in stamps and a full sized package will be sent you post-paid.

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25 Barred P. Rock Chicks, \$3.50 to \$5 each, 10 good yearling P. R. Hens \$5. **W. E. LECKY**, Holmesville, O.

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Cockerels of great size and superior breeding. Barred right, bred right, built right. Even better than last year. \$4.00 and \$5.00. **WESLEY HILE**, R. 6, Ionia, Mich.

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BARRED Rocks exclusively. Get your baby chicks and hatching eggs on time by ordering now. Prices and folder free. **H. H. PIERCE**, Jerome, Mich.

Blue CUSTOM HATCHING Hens

Fifteen dozen eggs incubated and chicks boxed and shipped \$6.50. Less than full complement \$5c per dozen. Order April chicks now. Many varieties send for circulars. **Crescent Egg Company**, Allegan, Mich.

Buff Leghorns and White Leghorns. Cockerels, hens, pens, and eggs. 500 April chicks of each breed. Place your order now. Prices reasonable. **Dr. William Smith**, Petersburg, Mich.

CHICKS 100,000 This Season. 10 varieties, best pure blood stock hatched right and guaranteed to reach you in right condition. Hatching eggs prepaid. Pekin duck eggs. Illustrated catalog free. **STANDARD POULTRY CO.**, R. 7, Nappanee, Ind.



CHICKS CHICKS CHICKS

350000 for 1919

By Parcel Post Prepaid. Delivered To Your Door. Guarantee Live Delivery.

Strong chicks from pure bred farm stock, that are hatched right.

Have chicks of Utility and Exhibition quality.
S. C. White and Brown Leghorns, \$12.00 and \$14.00 a 100; Barred Rocks, \$15.00 and \$17.00 a 100; Rose and Single Comb Reds, \$15.00 and \$18.00 a 100; White Wyandottes, \$15.00 and \$18.00 a 100; S. C. Anconas, \$14.00 and \$17.00 a 100; S. C. Buff Orpingtons, \$18.00 and \$21.00 a 100; S. C. Black Minorcas, \$18.00 a 100; Odds and Ends, \$12.00 a 100. Eggs for hatching \$7.00 to \$8.00 a 100. Combination orders on chicks, hovers and brooder stoves. Give us your order and we will make you a satisfied customer the same as hundreds of others. Order direct from this ad. But before ordering elsewhere get our free illustrated catalog. Get your order in early. Ready to ship in March.

HUBERS RELIABLE HATCHERY,
EAST HIGH ST., FOSTORIA, OHIO



BABY CHICKS

The average cost of producing a BABY CHICK under the hen is 22½ cents. We will supply you with the breeds listed below at 12½ cents to 20 cents.

Barred Rocks
White Rocks
Buff Rocks
Brown Leghorns
White Leghorns
Anconas
White Orpingtons
Buff Orpingtons
Assorted, for Broilers

Two millions for 1919, delivered anywhere by Parcel Post. Catalog free.

The Smith Standard Company
1967 W. 74th St., Cleveland Ohio

CHICKS AND EGGS

Rose and Single Comb R. I. Reds. Barred Plymouth Rocks. Pure bred stock. Farm raised and of superior quality. Write for catalog. **INTERLAKES FARM**, Box 39, Lawrence, Mich.

ARTIFICIAL HATCHING TROUBLES.

Will you please tell me why it is that so many of the incubator chicks dry up in the shells after they have picked through? I get good hatches up to this point, but lost about half of them, due to this cause. Do incubator chicks grow up to be as healthy and strong as those hatched by the hens? **Bay Co.** **B. F. W.**

If there is not enough moisture in the egg chamber, the membrane of the egg becomes tough and dry and sticks to the body of the chick and the young bird frequently dies after picking through a part of the outer shell. This can usually be avoided by supplying moisture on night of the eighteenth day. Soak a woolen cloth in boiling hot water and wring it out and spread it over the eggs, leaving it over night. Remove it the next morning and close up the machine for the completion of the hatch. The cloth will be found to be dry and the moisture will have been absorbed by the shells. This will soften the membrane enough to permit many chicks to hatch that otherwise might die in the shell. We use the woolen cloth soaked in hot water on every hatch and find that it furnishes just the right amount of moisture to bring out vigorous chicks.

Incubator chicks seem to grow up to be as healthy and strong as chicks hatched by hens, if the chicks are hatched and brooded in the correct manner. Some breeders have better success with hens than with artificial hatching but the difference is often due to mistakes in incubation and brooding. If the incubator overheats, the chicks are devitalized. If they are chilled in the brooder they do not grow up into vigorous birds. Of course the old hen does a lot of work for the poultryman without making many mistakes as she is regulated to carry on both incubating and brooding at the right temperature. In general, breeders who manage incubators carefully, like to use them. Some breeders who have unfortunate experiences with incubators are immediately prejudiced against their use. Often a good incubator is blamed for the health of the chicks that are improperly brooded, even though the chicks were strong and vigorous when they left the egg chamber. Success with chick raising depends much on the individual and we suggest that you try both artificial and natural incubation and compare the results that you are able to obtain from both systems. **R. G. K.**

LAMENESS IN FLOCK.

Some of our hens seem to have cholera and are very lame. We have been giving them sweet milk. Please advise as to what would be the best treatment for them. **Jackson Co.** **F. Y. C.**

Lameness in fowls may be caused by bumblefoot, rheumatism, scaly legs or tuberculosis. Simple cases of diarrhea are often taken for cholera. The diarrhea can be controlled by sanitary management and proper feeding methods. If the birds have cholera, treatment will not be satisfactory. Infected birds must be killed and the yards disinfected and the yards plowed. Future outbreaks can then be prevented by the proper management of the flock and the breeding of vigorous stock. Birds that have tuberculosis must be killed and burned and a start made with new stock after proper sanitary precautions have been taken.

The feeding of sweet milk may be a cause for the diarrhea as some of the milk may be sour before the birds finish eating it. If the milk is always fed sour the danger of sudden changes from sweet to sour milk is avoided. An inquiry of this kind is difficult to answer without seeing the flock, and the only safe advice is to use modern housing and feeding methods and kill off all birds that are suspected of having tuberculosis or cholera. **R. G. K.**

PRINCE ALBERT



Copyright 1919
by R. J. Reynolds
Tobacco Co.



Tippy red bags, tidy red tins, handsome pound and half pound tin humidors—and that clever, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

YOU can't help getting real and true jimmy pipe happy every time you fire up with Prince Albert—it pleases you so fair and square. You find there are not enough hours in days and nights to put to smoking purposes. That's the situation!

It's never too late to hop the fence into the Prince Albert pleasure-pasture! For, P. A. is ready to give you more tobacco fun than you ever had before. *That's because it has the quality, the flavor and the fragrance!*

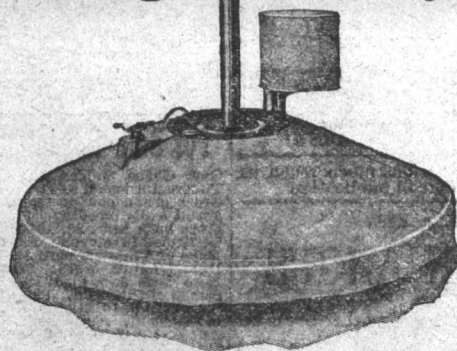
Soon as you know Prince Albert you'll say that P. A. *did not* bite your tongue or parch your throat. *And, it never will!* For, our exclusive patented process cuts out bite and parch and lets the man with the touchiest tongue simply smoke his fill all the time.

R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

Harrysbourg Colony Hover

America's
Leading Oil
Burning Hover.

Burner makes
perfect Gas
from common
Kerosene Oil.



Backed by a
Written
Guarantee.

Burns
continually
without
cleaning.

HARRYSBOURG COLONY HOVER is the oldest and best Blue Flame Oil Burning Hover on the market. Our Sales last Season were ten times greater than the year before. Absolutely Wickless, Heavy Metal Burner, which burns continually without cleaning. Consumes less Oil than any other Burner made. Our Automatic Valve, working like a carburetor, feeds Oil continually. Only Oil Burning Stove with Cast Metal Top and Cast Rim around Canopy.

Harrysbourg Poultry Farm, Inc., Dept. G, Dunkirk, N. Y.

Made in Two Sizes. 50-Inch Canopy, capacity 100 to 600 Chicks, and 33-inch Canopy, capacity 50 to 200 Chicks.

The Small Hover has Cast Metal Top and is equipped with smaller, heavy, Wickless Burner. Built for the Poultryman who raises 200 or less Chicks. It's the greatest small Hover to date, running three days on one gallon of Oil. We want you to send for our Circular matter before buying a Hover. We can interest you.

Chicks Barron Strain White Leghorns. Pay a little more and get a good start next season. Early hatched chicks are always the best. My cockerels come from hens with an egg record of over 30 eggs their pullet year. March \$16, April \$15, May \$14 per 100. **Polly Cove Farms**, R. 1, Holland, Mich.

CHIX:- S. C. W. Leghorns \$18 per 100. Full count live chix guaranteed. Pullets of same blood averaged 70½ yield through December and January. **Morris White Leghorn Farm**, Belding, Mich.

Chicks That Live \$15 per 100 S. C. W. Leghorns. Send for catalogue. **SNOWFLAKE POULTRY FARM**, R. 1, Grand Rapids, Mich.

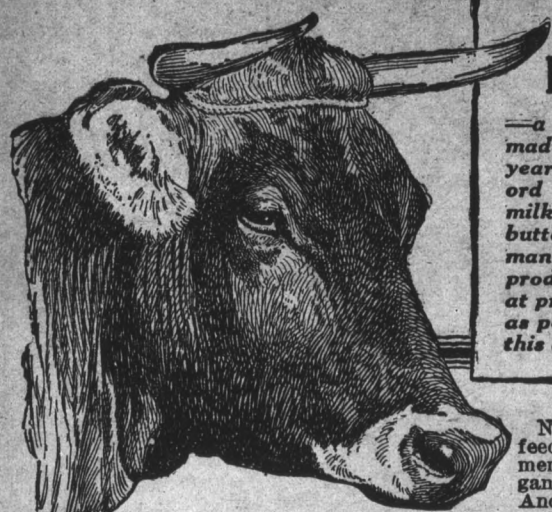
Chicks, We ship thousands, orders booked now for spring delivery, booklet. **FREEMONT HATCHERY**, Box 12, Freeport, Mich.

EGGS—R. O. Rhode Island Reds \$15.00 per 15. **ARTHUR SCHAFER**, R. 2, Box 56, Wyandotte, Mich.

Fowlers Buff Rocks Cockerels, hens and pullets. White Holland Toms. Search **R. B. FOWLER**, Hartford, Mich.

For sale "Buy the Best" eggs for hatching from 200 egg strain Barred Plymouth Rock, \$2.00 per 15, \$5.00 for 45 eggs. **H. B. PROCTOR**, Grand Haven, Mich.

Additional Poultry Ads. on Page 355



This Champion Brown Swiss

a five-year-old, has made the remarkable yearly production record of 16,804.4 lbs. of milk and 727.64 lbs. of butterfat. Every dairyman has cows that could produce far more than at present, if they were as perfect in health as this animal.

No matter how well you feed your dairy cows, remember they have vital organs that get out of order. And nowadays there's

A Premium on Health!

Never before has it paid so handsomely to get every extra pound of milk from every cow in the dairy. You can see the profit in milk, now.

The digestive and genital organs are the seat of practically all disorders in cows. Barrenness, Abortion, Scouring, Retained Afterbirth, Lost Appetite, Bunches and other cow ailments usually arise from "forcing" the cow's production without aiding nature in the rebuilding process.

KOW-KURE has met with great success in the treatment and prevention of cow diseases. It acts on just the organs that the troubles start in—toning them up and aiding the cow to produce and reproduce with regularity. Its effect on the milk flow is direct and positive.

Send today for your free copy of our book,

"The Home Cow Doctor"

It gives much general information of value to dairymen.

Buy KOW-KURE from feed dealers and druggists; 60c. and \$1.20 packages.

Dairy Association Co. Lyndonville, Vt.



Brown Swiss Dispersion

TUBERCULIN TESTED

Wednesday, March 12th, 1919

36 HEAD:

14 Milk Cows	6 two year old Heifers
4 yearling Aifers	8 Heifer Calves
2 Bull Calves	2 Herd Bulls, 2 and 3 years old

SEND FOR CATALOG

DR. WM. SCHAD

Moline, Mich.

BREEDERS' DIRECTORY

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WE HAVE A FEW

ABERDEEN ANGUS

cows with calves at foot, and rebred to

IMPORTED "EDGAR OF DALMENY" Mich. Grand Champion Angus Bull.

Also have four extra fine Angus bulls of serviceable age.

"Best of Breeding"

and at a price to sell.

WILDWOOD FARMS, Orion, Mich.
W. E. SCRIPPS, Prop. SIDNEY SMITH, Supt.

WOODCOTE ANGUS

TROJAN-ERICAS & BLACKBIRDS (BLACKCAPS) only. The most fashionable strains of the breed. Great care given to matings and pedigree. Every animal BRED IN THE PURPLE. Breeders and feeders of many INTERNATIONAL WINNERS. WOODCOTE STOCK FARM, Ionia, Mich.

Registered Aberdeen Angus. Seven bulls from eight to twelve months old. Plenty of size best of breeding. Prices reasonable. Come and see them. Inquire F. J. WILBER, Olio, Mich.

Cloverly Angus Bred cows, heifers and bull calves of good breeding. GEO. HATHAWAY & SON, Ovid, Mich.

GUERNSEYS Registered bulls two years old and under grade heifers all ages, write your requirements. WALTER PHIPPS FARM, 80 Alfred St. Detroit

\$500 WILL BUY

two Registered Guernsey Cows. \$500 one bull calf. GEO. N. CRAWFORD, Holton, Mich.

For Sale Registered Guernsey Bull

Gov. Chene Golden Noble & May Rose breeding. Tubercular tested by state. Halcyon Sequel born 1912 Great grand son of Gov. Chene sires and grand sires are all A. R. breeding. Price \$250 F.O.B. Avondales Hope born Mar. 25, 1917. Sire Halcyon Sequel Dam Gertrude of Halcyon. Farm price \$150 F.O.B. Luella's Duke of Avondales born Jan. 1, 1918 Sire Lord Sunrise Dam Luella's Maid. Price \$100 F.O.B. Avondales Hero born Jan. 10, 1918. Sire Halcyon Sequel Dam Serena of Pittsfield. Price \$200 F.O.B. Avondales Joy born Feb. 8, 1918. Sire Halcyon Sequel Dam Wrinkle of Pittsfield. Price \$125 F.O.B. Avondales Mark born Apr. 9, 1918. Sire Lord Sunrise, Dam Popular Polly. Price \$100 F.O.B. Come and look over our herd over. AVONDALES STOCK FARM, Wayne, Mich.

GET GUERNSEYS

\$90 more per head for 16 grade Guernsey cows, sired by a purebred Guernsey bull, than for each of 8 cows of unknown breeding was paid at a recent sale in Maryland. A purebred Guernsey bull can likewise increase the value as well as the production of your herd. Write for free booklet. "The Grade Guernsey".

THE AMERICAN GUERNSEY CATTLE CLUB, Box 1, Pettersboro, N. H.

Fine Reg. Guernsey

7 yr. old cow and her heifer calf 1 mo. old right in every way except—lost one quarter—\$300 buys this pair. J. M. WILLIAMS, North Adams, Mich.

GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculin tested. T. V. HICKS, Battle Creek, Mich.

GUERNSEYS—REGISTERED BULL CALVES Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S. Mich.

Reg. Guernsey Bull, "Mister Monarch of Bon Ayre." Serviceable age. May Rose breeding. Sire Dean of The May. Dam Mister Belle. R. E. Dickson, R. 2, Olivet, Mich.

Registered Holstein Bull calves from A. R. O. cows up to 23.52 lbs. butter in 7 days, grandsons of the \$50,000 bull. C. H. GIDDINGS, Gobleville, Mich.



RED-TOP AND CLOVER HAY.

I am writing you for information as to what I may add to what I have, so as to be able to feed a balanced ration to my cows. For roughage I have good corn fodder with, of course, a little corn in it, and all the red-top and clover hay, (which is very nice), they want. They have access to a very large stock of barley, oats and rye straw, but do not eat much of it, as they do not require it. I have in my granary now, very good corn, barley and oats, (which are light). I have been feeding rye screenings, buckwheat screenings, barley and oats, ground together; also some sweet corn on cob, and carrots, but I have run out. And I thought they did well. What is a good balanced ration, with what I have, and extra I might have to buy? Branch Co. F. A. W.

Red-top, when cut and cured at the right time, makes a splendid hay, although it is not as rich in protein as the clover, but it makes a splendid roughage and it is also a good thing to let the cows eat what straw they want at the straw stack. They will eat some with relish and you can save some of the hay by so doing.

Corn and barley and oats will not balance this ration of mixed hay and straw. You must use something like buckwheat middlings or cottonseed meal or oil meal to furnish the required amount of protein. If you have carrots so that you can feed a small amount even once a day, it will be a splendid thing in the ration as it furnishes succulency.

I suggest that you grind oats and corn, equal parts by weight, and that you purchase bran and mix with this food equal parts. Besides this you will need about two pounds of cottonseed meal or oil meal per day for each cow. In addition to this feed enough of the corn, oat and bran mixture to furnish a pound of grain per day for every four pounds of milk produced in a day if it tests less than four per cent, and one pound of grain per day for every three pounds of milk produced in a day, if it tests more than three per cent. C. C. L.

BUTTERMILK AND POTATOES FOR PIGS.

I am feeding nine pigs that average about seventy pounds apiece, on buttermilk at two cents per gallon, and corn meal that cost three cents per pound, and we are feeding small potatoes. Now I am thinking of buying more small potatoes. How much money can I pay per bushel, and what is the value of potatoes as pig feed, and how much can I feed at a meal? Wayne Co. L. K.

Corn meal, boiled potatoes and buttermilk make a splendid ration for the growing pigs. The buttermilk furnishes the required amount of protein, potatoes and corn meal could be cooked together and then made into a slop by adding the buttermilk. It should be fed in about the proportion of one pound of corn meal to six pounds of buttermilk. That will give you a good growing ration. If you feed in this proportion you can simply be governed by the capacity of the pigs to eat. Give them all they will eat up clean three times a day.

When we consider potatoes as a food we must remember that they are very largely water and this is not figured in the food ration. It is difficult to say how much one can afford to pay, but I should say not over \$5.00 or \$6.00 a ton for the potatoes. You have got a splendid ration for growing pigs in just corn meal and buttermilk, but a few potatoes give a variety and are an advantage in that way. C. C. L.

It is a mistake to think we can find a profit in buying mill feeds to supplement our corn crop, and neglect to provide pasture and forage crops.

Coarseness indicates low vitality, sluggishness and slow-feeding qualities.



Warranted to give satisfaction.

GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price .75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggrassin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory Berkeley, Cal., or Chicago, Ill. "The Laboratory That Knows How"

The Traverse Herd

We have what you want in BULL CALVES, the large fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL Traverse City, Mich.

\$550 Buys six high grade unregistered Holstein heifers 2 yrs. old freshen in spring. Well marked, bred to \$35 lb. bull. B. B. Reavy, Akron, Mich.

"Top-Notch" HOLSTEINS

The young bulls we have for sale are backed up by many generations of large producers. Buy one of these bulls, and give your herd a "push". Full descriptions, prices, etc. on request. McPherson Farms Co., Howell, Mich.

"Winwood Herd"

REGISTERED Holstein-Friesian Cattle Sire in Service FLINT MAPLECREST BOY

His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 1232 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bell, 50.57 lbs. of butter in 7 days and 121 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 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell at a dairy farmers price breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

JOHN H. WINN, Inc. Lock Box 249, Roscommon Mich. Reference Roscommon State Bank.

The Pontiac Herd

"Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Korndyke; Hengerveld DeKoi, Pontiac Dutchland, or Admiral Walker Fietertje.

Do you want a Pontiac in your herd? Pontiac State Hospital, Pontiac, Mich.

Additional Stock Ads. on Page 356

SPARK STRONGEST LAST LONGEST

A Battery Suitable For Every Use

RED SEAL DRY BATTERY

RELIABLE FARM POWER
Use Red Seal Dry Batteries for Tractors, Farm Engines, Autos, Telephones, Hand Lanterns, Etc.

Ask Your Dealer
Thousands of farmers will have no other. A sure sign of Great Value.

The Guarantee Protects You
FREE BOOK sent tractor and engine owners. Used in colleges and technical schools, but written in plain United States English. Sent FREE. Please mention dealer's name, and we'll also send you our big Electrical Catalog. Write today.

MANHATTAN ELECTRICAL SUPPLY COMPANY, Inc.
118 S. Wells St., Chicago
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Factories: Jersey City, St. Louis, Ravenna, O.

How to Run the Gas Engine
Simplified

\$19.95 ON TRIAL

American FULLY GUARANTEED CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$19.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. See our easy plan of **Monthly Payments**. Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan. Western orders filled from Western points.

AMERICAN SEPARATOR CO.
Box 3061 Bainbridge, N. Y.

POULTRY

LOOK BABY CHICKS \$13 A 100 UP

By Special Delivery Parcel Post, postage paid 20 different thoroughbred breeds. Utility & Exhibition grades. Live delivery guaranteed. Capacity 100,000 weekly. Catalog free. Nabob Hatcheries, Gambier, Ohio.

Baby chicks from Bred-to-Lay S. C. White Leghorns \$13 per 100. Thompson Strain Barred Plymouth Rocks \$18 per 100. Safe delivery guaranteed. Send for chick folder and order early. Custom hatching 4c per egg. Russell Poultry Ranch, Petersburg, Mich.

Baby Chicks Superlative quality. 11 cts. each and up. 24 leading breeds. Satisfaction guaranteed. Catalog free. Springfield Hatcheries & Poultry Farms, Box K, Springfield, Ohio.

Cockerels. Dark Red Single Comb R. I. Red Cockerels \$1 each. 2 for \$1.50. INTERLAKES FARM, Box 39, Lawrence, Mich.

JOHN'S Big Beautiful Barred Rocks are hen hatched quick growers, good layers, sold on approval \$1 to \$8. Circulars photos. John Northon, Clare, Mich.

Laybilt S. C. W. Leghorn

Large, great layers, pure whites, strong day-old chicks. March 1st each; April 1st each. Parcel postpaid. Lots of 25 or over, guaranteed delivery alive and lively. Hatch every week after March 17th. No circular. Please book order direct from adv. and send orders early. N. A. MORSE, Ionia, Mich.

Pine Crest White Orpington greatest egg producers—hens and young stock. Buy now for next winter. Mrs. WILLIS HOUGH, Pine Crest, Royal Oak, Mich.

ROSE COMB BROWN LEGHORNS from winners at the largest shows in America. Mrs. OLAUDIA BETTS, Hillsdale, Mich.

R. and S. C. R. I. Reds. Eggs for hatching, baby chicks, splendid stock, prices reasonable and satisfaction guaranteed. O. E. Hawley, R. 3, Ludington, Mich.

S. C. Anconas, W. Leghorns. Book orders now for Day Old Chicks and Hatching eggs. Circular free. Elmhurst Poultry Farm, Brighton, Mich.

Silver, Golden and White Wyandottes. Plenty of Sgood Golden and White cockerels \$1, \$5. Few Silver pullets \$3 each. C. W. Browning, Portland, Mich.

Snowy White Rocks Fishel Strain, dandy layers. Eggs \$1.50-1.75; \$1.50-1.75; \$1.50-1.75. All prepaid. Mrs. Earl Dehnhoff, Vanburen, Ohio.

White Wyandottes Free range flock 80 Daston's Strain hens mated to 7 Martin's Regal Strain Cockerels, 15 eggs by Parcel Post \$2.00 by ex. \$8 per 100. VERN MOORE, Hartford, Mich.

White Wyandottes choice stock: cocks, hens, cockerels, and pullets. Send for 1918 circular. David Ray, 709 Norris St., Ypsilanti, Mich.

Turkeys Will be Turkeys next fall. White Holands are the best they stay at home. Toms \$8, young hens \$6, 2 year old Hens \$8. Order early. ALDEN WHITCOMB, Byron Center, Mich.

Turkeys, Bourbon Reds For sale. Hens \$5, Toms \$6, each. JAMES MUNRO, R. 4, Deckerville, Mich.

MILK PROBLEMS.

(Continued from page 330).

very sure that it would compensate for itself in one season.

Organization.

While we have always protested against drastic and destructive methods, yet it has been our constant desire and aim to bring to our people continually the thought of the need of better organization. In our touch with the powers at Washington and the financial circles of the nation, we were impressed, months ago, that the effort would be made to reduce first the price of farm products. This purpose you have seen realized in the milk business and the value of the organization has been very apparent to us, and is today. If we take a survey of the price in the organized and unorganized territory of Michigan, where two years ago there was a local organization that made its influence felt upon the manufacturers, and where we were enabled, by working with the selling committee of the local, to get an advance that meant hundreds of dollars a day to the community, as soon as this advance had been gained the milk producers settled back, feeling that they had accomplished all that was necessary. They would not pay their dues to the state organization; they would not keep up their local organization; they simply drifted apart, and today they are paying a tremendous price for this neglect, for some of the condensaries in the unorganized districts are paying one dollar per hundred pounds less for milk than are condensaries in the organized districts of Michigan.

Some of the powdered milk plants in the unorganized districts of the state are paying from fifty-five to seventy cents per hundred pounds less than other plants are paying in organized districts. Consequently, we come back to this proposition that we have asserted to you so many times, and which today is a dominating factor in all other industries—it pays to organize.

We are reminded again of the truthfulness of the assertion of some of our best statisticians—that the organized movement has meant to the milk producers of Michigan not less than ten per cent and probably fifteen per cent more than otherwise would have been obtained.

Now, we appeal to your manhood, to your sense of fair play, and ask you to get busy and do your part to maintain the organization in your locality.

Lack of maintaining the local organization is not the only cause of the recent decline in the price of dairy products. As we have warned you so many times, a very potent factor to bring this decline is the determination of political and financial interests to reduce, first, the price of food stuffs from the farm so that the city labor, (which is organized), will not make serious demands. The farmer is not organized, he can not make effective demands. We have warned you of this repeatedly in the last months. While the high price of other commodities was reached and maintained for years of the war period, yet the high price of milk was reached and maintained for barely one month. It was the last to go up and the first to come down. The farmer ignores the most effective weapon used by other industries, viz., organization.

Another great cause of the decline in the price of dairy products is the great increase in the use of oleomargarine. The great packing interests are now conducting a great campaign all over the United States. Many of their agents are in stores in Michigan just now, and thousands of farmers are buying this stuff and using it on their own tables, ruining their own business, and cussing about the price of milk. Now, whenever you get a cut in the price of milk remember you helped to bring it on. Don't use oleomargarine. We must face and correct these evils if we save the dairy industry.

SAVE
~~\$10.00~~ To ~~\$15.00~~
\$20.00 To \$30.00
per cow per year
with a
DE LAVAL
CREAM SEPARATOR

Formerly, with butter-fat at 25 to 35 cents a pound, a De Laval Cream Separator saved \$10 to \$15 per cow per year over gravity skimming.

Now with butter-fat selling at 50 to 65 cents a pound, and even higher, the saving with a De Laval is doubled.

If you have only two cows and are selling cream or making butter, a De Laval will soon save enough to pay for itself.

With butter-fat at present prices you need a De Laval more than ever before, and if you already have an inferior or half-worn-out separator, your cream loss with such a machine is too big to be neglected.

The best cream separator you can get is the only machine you can afford to use these days, and creamerymen, dairy authorities and the 2,325,000 De Laval users all agree that

the De Laval is the world's greatest cream saver. They know from experience that the De Laval skims the closest, lasts the longest and gives the best service.



Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

The De Laval Separator Co.

165 Broadway
New York

29 E. Madison St.
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OVER 2,325,000 DE LAVALS IN DAILY USE

Feed your dairy
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High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

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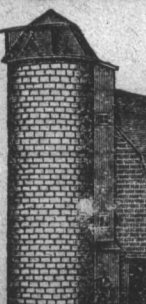
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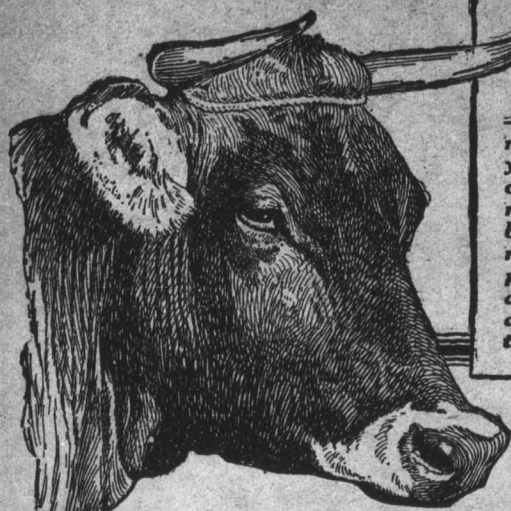
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Small Expense. Easily Applied. Sure Results. Used successfully for 30 years.

Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.

DR. DAVID ROBERTS VETERINARY CO.
640 GRAND AVE., WAUKESHA, WIS.





This Champion Brown Swiss

—a five-year-old, has made the remarkable yearly production record of 16,804.4 lbs. of milk and 727.64 lbs. of butterfat. Every dairyman has cows that could produce far more than at present, if they were as perfect in health as this animal.

No matter how well you feed your dairy cows, remember they have vital organs that get out of order. And nowadays there's

A Premium on Health!

Never before has it paid so handsomely to get every extra pound of milk from every cow in the dairy. You can see the profit in milk, now.

The digestive and genital organs are the seat of practically all disorders in cows. Barrenness, Abortion, Scouring, Retained Afterbirth, Lost Appetite, Bunches and other cow ailments usually arise from "forcing" the cow's production without aiding nature in the rebuilding process.

KOW-KURE has met with great success in the treatment and prevention of cow diseases. It acts on just the organs that the troubles start in—toning them up and aiding the cow to produce and reproduce with regularity. Its effect on the milk flow is direct and positive.

Send today for your free copy of our book,

"The Home Cow Doctor"

It gives much general information of value to dairymen.

Buy KOW-KURE from feed dealers and druggists; 60c. and \$1.20 packages.

Dairy Association Co.
Lyndonville, Vt.



Brown Swiss Dispersion

TUBERCULIN TESTED

Wednesday, March 12th, 1919

36 HEAD:

14 Milk Cows	6 two year old Heifers
4 yearling Aifiers	8 Heifer Calves
2 Bull Calves	2 Herd Bulls, 2 and 3 years old

SEND FOR CATALOG

DR. WM. SCHAD

Moline, Mich.

BREEDERS' DIRECTORY

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Ten days before date of publication

WE HAVE A FEW

ABERDEEN ANGUS

cows with calves at foot, and rebred to

IMPORTED "EDGAR OF DALMENY"
Mich. Grand Champion Angus Bull.

Also have four extra fine Angus
bulls of serviceable age.

"Best of Breeding"

and at a price to sell.

WILDWOOD FARMS, Orion, Mich.
W. E. SCRIPPS, Prop. SIDNEY SMITH, Supt.

WOODCOTE ANGUS

TROJAN-ERICAS & BLACKBIRDS (BLACKCAPS)
only. The most fashionable strains of the breed.
Great care given to matings and pedigrees. Every animal
bred in the PURPLE. Breeders and feeders
of many INTERNATIONAL WINNERS.
WOODCOTE STOCK FARM, Ionia, Mich.

Registered Aberdeen Angus. Seven bulls from eight
to twelve months old. Plenty of size
best of breeding. Prices reasonable. Come and see
them. Inquire F. J. WILBER, Olio, Mich.

Cloverly Angus Bred cows, heifers and bull
calves of good breeding.
GEO. HATHAWAY & SON, Ovid, Mich.

GUERNSEYS Registered bulls two years old and un-
dider grade heifers all ages, write your requirements.
WALTER PHIPPS FARM, 80 Alfred St. Detroit

\$500 WILL BUY

two Registered Guernsey Cows, \$500 one bull calf.
GEO. N. CRAWFORD, Holton, Mich.

For Sale Registered Guernsey Bull

Gov. Chene Golden Noble & May Rose breeding.
Tubercular tested by state Halcyon Sequel born 1912.
Great grand son of Gov. Chene sire and grand sire
are all A. R. breeding. Price \$250 F.O.B. Avondales
Hope born Mar. 25, 1917. Sire Halcyon Sequel Dam
Gertrude of Halcyon. Farm price \$150 F.O.B. Luella's
Duke of Avondale born Jan. 1, 1918 Sire Lord Sunrise
Dam Luella's Maid. Prices \$100 F.O.B. Avondales
Hero born Jan. 10, 1918. Sire Halcyon Sequel Dam
Serenia of Pittsfield. Price \$200 F.O.B. Avondales Joy
born Feb. 8, 1918. Sire Halcyon Sequel Dam Winkle
of Pittsfield. Price \$125 F.O.B. Avondales Mark born
Apr. 9, 1918. Sire Lord Sunrise, Dam Popular Polly.
Price \$100 F.O.B. Come and look our herd over.
AVONDALE STOCK FARM, Wayne, Mich.

GET GUERNSEYS

\$90 more per head for 16 grade Guernsey cows,
sired by a purebred Guernsey bull, than for each
of 8 cows of unknown breeding was paid at a re-
cent sale in Maryland. A purebred Guernsey bull
can likewise increase the value as well as the pro-
duction of your herd. Write for free booklet.
"The Grade Guernsey".

THE AMERICAN GUERNSEY CATTLE CLUB,
Box 1, Petoskey, N. H.

Fine Reg. Guernsey

7 yr. old cow and her heifer calf 1 mo. old right in
every way except—lost one quarter—\$300 buys this pair
J. M. WILLIAMS, North Adams, Mich.

GUERNSEYS must reduce herd, so offer
a few choice females of
Glenwood breeding also bulls, all stock of A. R. breed-
ing, herd tuberculin tested.
T. V. HICKS, Battle Creek, Mich.

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

Reg. Guernsey Bull, "Mister Monarch of Bon Ayre,"
R. Serviceable age. May Rose breeding. Sire Dean of
The May. Dam Mixer Belle. R. E. Dickson, R. 3, Olivet, Mich.

Registered Holstein Bull calves from A. R. O. cows up
to 20-32 lbs. butter in 7 days, grandsons of the \$50,000
bull. C. H. GIDDINGS, Gobioville, Mich.



RED-TOP AND CLOVER HAY.

I am writing you for information as to what I may add to what I have, so as to be able to feed a balanced ration to my cows. For roughage I have good corn fodder with, of course, a little corn in it, and all the red-top and clover hay, (which is very nice), they want. They have access to a very large stock of barley, oats and rye straw, but do not eat much of it, as they do not require it. I have in my granary now, very good corn, barley and oats, (which are light). I have been feeding rye screenings, buckwheat screenings, barley and oats, ground together; also some sweet corn on cob, and carrots, but I have run out. And I thought they did well. What is a good balanced ration, with what I have, and extra I might have to buy? Branch Co. F. A. W.

Red-top, when cut and cured at the right time, makes a splendid hay, although it is not as rich in protein as the clover, but it makes a splendid roughage and it is also a good thing to let the cows eat what straw they want at the straw stack. They will eat some with relish and you can save some of the hay by so doing.

Corn and barley and oats will not balance this ration of mixed hay and straw. You must use something like buckwheat middlings or cottonseed meal or oil meal to furnish the required amount of protein. If you have carrots so that you can feed a small amount even once a day, it will be a splendid thing in the ration as it furnishes succulency.

I suggest that you grind oats and corn, equal parts by weight, and that you purchase bran and mix with this food equal parts. Besides this you will need about two pounds of cottonseed meal or oil meal per day for each cow. In addition to this feed enough of the corn, oat and bran mixture to furnish a pound of grain per day for every four pounds of milk produced in a day if it tests less than four per cent, and one pound of grain per day for every three pounds of milk produced in a day, if it tests more than three per cent. C. C. L.

BUTTERMILK AND POTATOES FOR PIGS.

I am feeding nine pigs that average about seventy pounds apiece, on buttermilk at two cents per gallon, and corn meal that cost three cents per pound, and we are feeding small potatoes. Now I am thinking of buying more small potatoes. How much money can I pay per bushel, and what is the value of potatoes as pig feed, and how much can I feed at a meal? Wayne Co. L. K.

Corn meal, boiled potatoes and buttermilk make a splendid ration for the growing pigs. The buttermilk furnishes the required amount of protein, potatoes and corn meal could be cooked together and then made into a slop by adding the buttermilk. It should be fed in about the proportion of one pound of corn meal to six pounds of buttermilk. That will give you a good growing ration. If you feed in this proportion you can simply be governed by the capacity of the pigs to eat. Give them all they will eat up clean three times a day.

When we consider potatoes as a food we must remember that they are very largely water and this is not figured in the food ration. It is difficult to say how much one can afford to pay, but I should say not over \$5.00 or \$6.00 a ton for the potatoes. You have got a splendid ration for growing pigs in just corn meal and buttermilk, but a few potatoes give a variety and are an advantage in that way. C. C. L.

It is a mistake to think we can find a profit in buying mill feeds to supplement our corn crop, and neglect to provide pasture and forage crops.

Coarseness indicates low vitality, sluggishness and slow-feeding qualities.



Warranted to give satisfaction.

GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price .75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggrassin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

The Traverse Herd

We have what you want in BULL CALVES, the large fine growth type, guaranteed right in every way. They are from high producing A.R. O. ancestors, Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

\$550 Buys six high grade unregistered Holstein heifers 2 yrs. old fresh in spring. Well marked, bred to 133 lb. bull. B. B. Reavy, Akron, Mich.

"Top-Notch" HOLSTEINS

The young bulls we have for sale are backed up by many generations of large producers. Buy one of these bulls, and give your herd a "push". Full descriptions, prices, etc. on request.

McPherson Farms Co., Howell, Mich.

"Winwood Herd"

REGISTERED
Holstein-Friesian Cattle
Sire in Service
FLINT MAPLECREST BOY

His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 132 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bell, 30.57 lbs. of butter in 7 days and 121 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 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell at a dairy farmers price breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

JOHN H. WINN, Inc.
Lock Box 249, Roscommon Mich.
Reference Roscommon State Bank.

The Pontiac Herd

"Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Korndyke, Hengerveld DeKoi, Pontiac Dutchland, or Admiral Walker Pletertje.

Do you want a Pontiac in your herd?
Pontiac State Hospital, Pontiac, Mich.

Additional Stock Ads. on Page 356

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A Battery Suitable For Every Use

RED SEAL DRY BATTERY

RELIABLE FARM POWER

Use Red Seal Dry Batteries for Tractors, Farm Engines, Autos, Telephones, Hand Lanterns, Etc.

Ask Your Dealer

Thousands of farmers will have no other. A sure sign of Great Value. The Guarantee Protects You

FREE BOOK sent tractor and engine owners. Used in colleges and technical schools, but written in plain United States. Sent FREE. Please mention dealer's name, and we'll also send you our big Electrical Catalog. Write today.

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How to Run the Gas Engine



19.95 ON TRIAL

Upward

American

FULLY GUARANTEED CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$19.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from pictures, which illustrates larger capacity machines. See our easy plan of

Monthly Payments

Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

Western orders filled from Western points.

AMERICAN SEPARATOR CO.
Box 3061 Bainbridge, N. Y.



POULTRY

LOOK BABY CHICKS \$13 A 100 UP

By Special Delivery Parcel Post, postage paid 20 different thoroughbred breeds. Utility & Exhibition grades. Live delivery guaranteed. Capacity 100,000 weekly. Catalog free. Nabob Hatcheries, Gambier, Ohio.

Baby chicks from Bred-to-Lay S. C. White Leghorns \$13 per 100. Thompson Strain Barred Plymouth Rocks \$18 per 100. Safe delivery guaranteed. Send for chick folder and order early. Custom hatching to per egg. Russell Poultry Ranch, Petersburg, Mich.

Baby Chicks Superlative quality. 11 cts. each and up. 24 leading breeds. Satisfaction guaranteed. Catalog free. Springfield Hatcheries & Poultry Farms, Box K, Springfield, Ohio.

Cockerels. Dark Red Single Comb R. I. Red INTERLAKES FARM, Box 39, Lawrence, Mich.

JOHN'S Big Beautiful Barred Rocks are hen hatched quick growers, good layers, sold on approval \$4 to \$8. Circulars photos. John Northon, Clare, Mich.

Laybilt S. C. W. Leghorn

Large, great layers, pure whites, strong day-old chicks. March 1st each; April 1st each. Parcel post paid. Lots of 25 or over, guaranteed delivery alive and lively. Hatch every week after March 1st. No circular. Please book order direct from adv. and send orders early. A. A. MORSE, Ionia, Mich.

Pine Crest White Orpington greatest egg producers—hens and young stock, buy now for next winter. Mrs. WILLIS HOUGH, Pine Crest, Royal Oak, Mich.

ROSE COMB BROWN LEGHORNS from winners at the largest shows in America. Mrs. OLAUDIA BETTS, Hillsdale, Mich.

R. and S. C. R. I. Reds. Eggs for hatching, baby chicks, splendid stock, prices reasonable and satisfaction guaranteed. O. E. Hawley, R. 3, Ludington, Mich.

S. C. Anconas, W. Leghorns. Book orders now for free. Day Old Chicks and Hatching eggs. Circular Elmhurst Poultry Farm, Brighton, Mich.

Silver, Golden and White Wyandottes. Plenty of Sgood Golden and White cockerels \$1.35. Few Silver pullets \$3 each. C. W. Browning, Portland, Mich.

Snowy White Rocks Fishel Strain, dandy layers. Eggs \$1.50-1.75; \$4.50; \$7.100 All prepaid. Mrs. Earl Dehnhoff, Vanburen, Ohio.

White Wyandottes Free range flock 50 Dutton's Strain hens mated to 7 Martin's Regal Strain Cockerels, 15 eggs by Parcel Post \$2.00 by ex. \$8 per 100. VERN MOORE, Hartford, Mich.

White Wyandottes choice stock; cocks, hens, cockerels, and pullets. Send for 1918 circular. David Ray, 709 Norris St., Ypsilanti, Mich.

Turkeys Will be Turkeys next fall. White Hol lands are the best they stay at home. Toms \$8, young hens \$6, 2 year old Hens \$8. Order early. ALDEN WHITCOMB, Byron Center, Mich.

Turkeys, Bourbon Reds For sale. Hens \$5. Toms \$6 each. JAMES MUNRO, R. 4, Deckerville, Mich.

MILK PROBLEMS.

(Continued from page 330).

very sure that it would compensate for itself in one season.

Organization.

While we have always protested against drastic and destructive methods, yet it has been our constant desire and aim to bring to our people continually the thought of the need of better organization. In our touch with the powers at Washington and the financial circles of the nation, we were impressed, months ago, that the effort would be made to reduce first the price of farm products. This purpose you have seen realized in the milk business and the value of the organization has been very apparent to us, and is today. If we take a survey of the price in the organized and unorganized territory of Michigan, where two years ago there was a local organization that made its influence felt upon the manufacturers, and where we were enabled, by working with the selling committee of the local, to get an advance that meant hundreds of dollars a day to the community, as soon as this advance had been gained the milk producers settled back, feeling that they had accomplished all that was necessary. They would not pay their dues to the state organization; they would not keep up their local organization; they simply drifted apart, and today they are paying a tremendous price for this neglect, for some of the condensaries in the unorganized districts are paying one dollar per hundred pounds less for milk than are condensaries in the organized districts of Michigan.

Some of the powdered milk plants in the unorganized districts of the state are paying from fifty-five to seventy cents per hundred pounds less than other plants are paying in organized districts. Consequently, we come back to this proposition that we have asserted to you so many times, and which today is a dominating factor in all other industries—it pays to organize.

We are reminded again of the truthfulness of the assertion of some of our best statisticians—that the organized movement has meant to the milk producers of Michigan not less than ten per cent and probably fifteen per cent more than otherwise would have been obtained.

Now, we appeal to your manhood, to your sense of fair play, and ask you to get busy and do your part to maintain the organization in your locality.

Lack of maintaining the local organization is not the only cause of the recent decline in the price of dairy products. As we have warned you so many times, a very potent factor to bring this decline is the determination of political and financial interests to reduce, first, the price of food stuffs from the farm so that the city labor, (which is organized), will not make serious demands. The farmer is not organized, he can not make effective demands. We have warned you of this repeatedly in the last months. While the high price of other commodities was reached and maintained for years of the war period, yet the high price of milk was reached and maintained for barely one month. It was the last to go up and the first to come down. The farmer ignores the most effective weapon used by other industries, viz., organization.

Another great cause of the decline in the price of dairy products is the great increase in the use of oleomargarine. The great packing interests are now conducting a great campaign all over the United States. Many of their agents are in stores in Michigan just now, and thousands of farmers are buying this stuff and using it on their own tables, ruining their own business, and cussing about the price of milk. Now, whenever you get a cut in the price of milk remember you helped to bring it on. Don't use oleomargarine. We must face and correct these evils if we save the dairy industry.

SAVE

~~\$10.00~~ TO ~~\$15.00~~

~~\$20.00~~ TO ~~\$30.00~~

per cow per year

with a

DE LAVAL

CREAM SEPARATOR

Formerly, with butter-fat at 25 to 35 cents a pound, a De Laval Cream Separator saved \$10 to \$15 per cow per year over gravity skimming.

Now with butter-fat selling at 50 to 65 cents a pound, and even higher, the saving with a De Laval is doubled.

If you have only two cows and are selling cream or making butter, a De Laval will soon save enough to pay for itself.

With butter-fat at present prices you need a De Laval more than ever before, and if you already have an inferior or half-worn-out separator, your cream loss with such a machine is too big to be neglected.

The best cream separator you can get is the only machine you can afford to use these days, and creamerymen, dairy authorities and the 2,325,000 De Laval users all agree that the De Laval is the world's greatest cream saver. They know from experience that the De Laval skims the closest, lasts the longest and gives the best service.



Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

The De Laval Separator Co.

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New York

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OVER 2,325,000 DE LAVALS IN DAILY USE

Feed your dairy
and beef cattle

BUFFALO CORN

Ask your dealer
for Buffalo

GLUTEN FEED

Write C. FRANCIS, 909 Ford Building, Detroit
for sample, literature, and particulars



Tix-Ton-Mix

with salt the year around keeps flock healthy and free from stomach worms and ticks. A \$5.00 box makes \$60.00 worth of medicated salt—saves you big money—A \$2.00 size box of "TIX-TON MIX" by parcel post will medicate a barrel of salt.

Write for club offer—booklet on "Nature and Care of Sheep"

PARSONS CHEMICAL WORKS, Grand Ledge, Michigan

Write for Book
Today



FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 35 Elm Street, Quincy, Ill.

Why a "B-V-T" Silo

is the Best Investment

Because it has been on the market EIGHT YEARS, without a SINGLE FAILURE.

Made of famous Brazil Vitified Fire Clay—ONE ton costs as much as FIVE tons of shale.

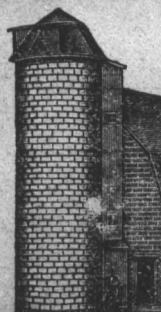
A "B-V-T" WILL LAST FOREVER

Will not freeze or crack. Keeps silage in perfect condition. You never have to rebuild a "B-V-T."

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Brazil Hollow Brick and Tile Company

BRAZIL, INDIANA



STOP LOSING CALVES

You can Stamp Abortion Out OF YOUR HERD and Keep It Out

By the use of
DR. DAVID ROBERTS' "ANTI-ABORTION"

Small Expense. Easily Applied. Sure Results. Used successfully for 30 years. Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.
DR. DAVID ROBERTS VETERINARY CO.
640 GRAND AVE., WAUKESHA, WIS.



CATTLE



Save Labor By Using Holsteins

Whatever the amount of milk or butterfat you wish to produce, it is not better policy to use large yield cows than to feed and shelter the necessarily greater number of small yield cows. Use Holsteins and you save labor, feed, stable-room, equipment and risk. They are always healthy and ready for work.

Choose cows according to their capacity for converting coarse feed into milk. That is the function of a dairy cow and that is where the big Black and White Holstein excels.

If interested in

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

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

Start a herd with dam, daughter & granddaughter.

Peaceland Calamity No. 218038; Born September 19, 1912. 11.99 lbs. butter, 3.76 lb. milk, 7 days A.R.O. at 2 years of age. Peaceland Korndyke Calamity No. 273956; Born October 5, 1914. 11.69 lb. butter, 305.2 lb. milk, A.R.O. 7 days at 2 years of age. Peaceland Belle Korndyke No. 48816; Born November 4, 1917. All fresh since October and now being bred to Meadow Holm DeKol Butter Boy No. 234564. Herd under Government Supervision for control of tuberculosis. Price \$75 for the three f. o. b. Fabius, Peaceland Stock Farm, Three Rivers, Mich. Chas. E. Peters, Herdsman, Forbreeding and prices. C. L. Brody, Port Huron, 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.

THE HOLSTEINS

At Maple Avenue Stock Farm are under Government supervision. The entire herd have just been tuberculin tested and not one reactor. A good place to buy that bull you are looking for, and I have two very fine, richly bred, and splendid individuals ready for any amount of service. I want to answer any question you may ask about the herd.

L. E. CONNELL, Fayette, Ohio.

Registered and high grade Holsteins. Eight cows from three to eight yr. old some fresh others to freshen in Feb. and Mar. from 30 lb. sire, others bred to a 30 lb. sire good dairy cows. Will sell one or the eight.

HENRY S. ROHLFS, R. 1, Akron, Mich.

\$6.86 above cost of feed for Feb. from milk fresh April 20, age 29 mo. test 4.5% gddau. of Pontiac Maid 31.21 lb. due May to 26 lb. son of Maple Crest Korn. Heng. \$300 terms. M. L. McLAULIN, Redford, Mich.

Write for description and price of 5 Holstein bulls, born Sept. and later, 32 lb. sire, M.W. WILLARD & SONS, R. 2, Grand Rapids, Mich.

For Sale Registered Holstein bull calf. Born Dec. 13, 1918, mostly white. Dam dau. of a 24.13 lb. cow, write for price. Deliverable. I have another yearling.

E. E. STURGIS, St. Johns, Mich.

For Sale at a bargain. A few young bull calves from high producing stock. Buy one of these fine calves and raise a bull for next fall.

A. F. LOOMIS, Owosso, 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.

For Sale Registered Holstein heifer bred dam gives 15 lb. milk a day. Price \$300.00 JOHN EBBELS, R. 2, Holland, Mich.

Reg. Holstein Bull Calves \$50 reg. and del. J. ROBERT HICKS, St. Johns, Mich.

JERSEYS

THE Jersey is an investment breed, not a luxury. They are noted as money-makers. They do not have to be pampered. They do equally well in Southern Texas and the Canadian Northwest. One Jersey will prove to you that you must have a herd. Write Dealers for prices and pedigrees. Send us for important facts about Jerseys.

The American Jersey Cattle Club
346 W. 23d St., New York City

Maple Lane R. of M. Jersey herd. Bulls, bull calves and heifer calves sired by a nephew of the new World's Champion, Sophie's Agnes. Also R.I.R. Cockerels, both combs. Irwin Fox, Allegan, Mich.

Hillside Farm Jerseys, offer 3 yearling bulls, backed by tested dams, and sired by a double grandson of Royal Majesty, first prize & junior champion at Mich. State Fair, good individuals, C. & O. Deake, Ypsilanti, Mich.

BUTTER BRED JERSEY BULLS FOR SALE CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

JERSEY BULLS Ready for service FOR SALE WATERMAN & WATERMAN, Ann Arbor, Mich.

LILLIE Farmstead Jerseys. Young bulls ready for service from R. of M. cows. A few bred heifers and cows. COLON C. LILLIE, Coopersville, Mich.

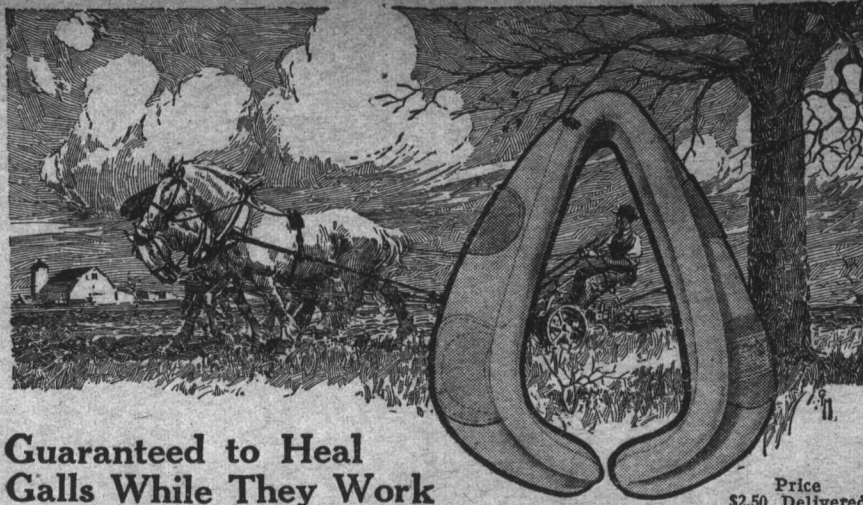
The Wildwood Jersey Farm. Bulls for sale by Majesty's Oxford, Fox 134214 and Eminent Lady's Majesty 150934, and out of R. of M. Majesty dams. ALVIN BALDEN, Capac, Mich.

For Sale Registered Jersey bulls ready for service and bull calves. SMITH & PARKER, R. 4, Howell, Mich.

Lakewood Herefords Strong in the blood of that breeds true to type and predominates the leading show and sale rings of the country. A few high class young bulls for sale. Come see, and compare. Farm adjoins town. Citz. Phone 29.

E. J. TAYLOR, Fremont, Mich.

\$50 Buys a Jersey bull calf 4 mo. old whose dam gave 34 lbs. fat at a three yr. old, and his sire a son of Majesty's Wonder, A. R. of M. son of Royal Majesty, registered, orated F. O. B. C. A. TAGGETT, Fairgrove, Tuscola Co., Mich.



Guaranteed to Heal Galls While They Work

Sweat and chafing cause galls. Make a horse collar that will absorb sweat—move with the shoulder muscles, instead of chafing against them—and you have a collar that puts an end to galls. That's just what has been accomplished in the



Absorbs Sweat

Made of closely woven army duck—stuffed with soft, springy cotton fiber. This fiber

THE POWERS MFG. CO.,
Box 134, Waterloo, Ia.

Herefords

5 Bulls 9 to 14 months old Prince Donald, Farmer and Perfection Fairfax breeding.

ALLEN BROS., Paw Paw, Mich.

Michigan Herefords

REPEATERS AND PERFECTIONS Young stock for sale at all times.

80 head in herd, all ages.

Farm 5 miles south of Ionia. Visitors welcome. JAY HARWOOD, Ionia, Mich.

CITIZENS TELEPHONE 122-4

Buy a Hereford Sire Improve your Stock

Herefords Polled and Horned blood lines embrace Fairfax. Polled Perfection and Prime Lad 9th breeding. Prices reasonable. COLE & GARDNER, Hudson, Mich.

Herefords Bob Fairfax 494027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. EARL O. McCARTY, Sec'y. H. B. Ass'n. Bad Axe, Mich.

BIDWELL SHORTHORNS

For Beef and Milk.

Registered bulls, cows and heifers—Good Scotch and Scotch-Topped for sale. In prime condition. Modern sanitary equipment. Farm 10 minutes from N. Y. C. depot, 1 hour from Toledo, Ohio. Automobile meets all trains. Write

BIDWELL STOCK FARM,
Box B, Tecumseh, Mich.

Richland Farms

Shorthorns

Home of the Mich. Champions. We have just purchased the entire herd of Scotch cattle belonging to the Estate of the late A. D. Flintom, Kansas City, Mo. About Feb. 1st, we will offer a choice lot of young bulls for sale.

C. H. PRESCOTT & SONS,

Office at Tawas City, Mich. Farms at Prescott, Mich.

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

Shorthorn Seven Scotch and Scotch Topped bulls for sale. Price reasonable. W. B. McQUILLAN, R. 7, Howell, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Maxwilton Sulton and White Hall Sulton by the Osola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Shorthorn Bulls ready for service of the choicest breeding. Write me you want. A. A. PATTULLO, R. 4, Deckerville, Mich.

Oakwood Shorthorns. Three bulls sired by Gloster Boy 469661, 9 to 12 months old. COLLAR BROS., R. 4, Conklin, Mich.

Scotch Shorthorn. A fine lot of young bulls for sale. Phone Pontiac 715F3 or Orion Exchange. John Lessiter & Sons, R. 1, Clarkston, Mich.

For Sale 2 yr. old Scotch herd bull sired by Valiant 387201, a Lespedeza Farm product. LAURENCE P. OTTO, Charlotte, Mich.

Five Shorthorn Bulls ready for service. One herd bull 4 years old. W. F. BARR, Aloha, Mich.

Stockers & Feeders For Sale 180 Shorthorn Steers ave. 1065 lbs. 170 Hereford Steers ave. 980 lbs. 2 cars of yearling Herefords ave. 750 lbs. 2 cars of Shorthorn yearlings reds and roans. These steers are dehorned and in good flesh. Wapello Co. Ia. is noted for its good cattle. Write JOHN CARROW, R. 3, Ottumwa, Ia.

Milking Shorthorns Clay bred young bulls 3 to 10 months old. DAVIDSON & HALL, Tecumseh, Mich.

Price \$2.50 Delivered

Open at the Throat

The open throat makes the Langford conform itself to the shoulders—gives pulling muscles full play—moves with the shoulders, instead of rubbing and chafing against them.

Easy to put on. Will not pack or harden. Cannot sweeney. Often last three or more seasons. Costs one-fourth as much as leather. A collar and pad combined.

Try this open-throated cotton collar. Use it on the horse with sorest shoulders. If it fails to heal, return collar and get your money back. If your dealer cannot supply you, send \$2.50, state size, and we will send you a collar, charges prepaid. (6-2c)

Trade Mark



CLARADALE Milking Shorthorns and Large type Berkshire hogs, young bulls ready for service at reasonable prices, white and roans the ideal farm cow is for butterfat, beef and milk. We have them, write F. W. JOHNSON & SONS, Custer, Mich., Drawer 26.

Rosemary Farms, Williamston, Mich. young bulls Ready for service. Shorthorns bred for milk & beef. Herd estab. by Prof. C. H. Burgess, Mich. Agri. College.

Shorthorns Central Mich. Shorthorn Breeders Ass. offer 37 bulls all ages. 17 females for sale. Write Oscar Skinner, Sec., Gowen, Mich.

Shorthorn Breeder No stock for sale at present. CHAS. WARNER, Jr., Inlay City, Mich.

Shorthorns 100 head to select from. Write me your wants, price reasonable. Wm. J. BELL, Rose City, Mich.

The Kent Co. Shorthorn Breeders have both males and females for sale. Ask about them. L. H. LEONARD Sec., Caledonia, Mich.

Cattle For Sale Stockers & feeders, from 500 to 1,000 lb. Write your wants. ISAAC SHANSTROM, Fairfield, Iowa.

For Sale Registered Angus bull ready for service. His sire came from Prescott's herd. DORUS HOVER, Akron, Mich.

HOGS

GET THIS CATALOG FREE

It lists good Berkshires ready for delivery—bred sows that have had big litters, and growing gilts bred to \$1,000 boars. It is well illustrated. Write a postal for it today.

THE PORKMAKER HERD OF BERKSHIRES
Route 4, Barrington, Ill.

Registered Berkshire Hogs present stock all sold, we are booking orders for future. RUSSELL BROS., Merrill, Mich.

Serviceable Berkshire Boars and White Leghorn Cockerles. PRIMEVILLE FARM, Osseo, Mich.

DUROC OPPORTUNITY

Michigan Breeders and Farmers prefer to buy Duroc Jerseys at private rather than public sale. For the first time in five years we are able to offer as many as 40 bred sows and gilts privately. Same blood lines and bred to some prize winning boars as our sale stock. Prices are in keeping with the individuality and breeding of the offering, send for sale list. If you need a boar we have them.

BROOKWATER FARM, Ann Arbor, Michigan

HERBERT W. MUMFORD, owner, J. BRUCE HENDERSON, Manager.

DUROC

Bred sows and last fall boars. State Fair Champions and winners. Down to date breeding and correct type. Orion's Fancy King heads herd.

NEWTON BARNHART, St. Johns, 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 developers—ready for market at six months old. Write for my plan—More Money from Hogs. G. S. BENJAMIN, R. F. D. 10, Portland, Michigan



LIGHT LAMBS PAY BEST.

IN order to buy and sell sheep successfully, it is necessary to keep a close watch of market quotations and to carefully study the trend of the market. The supply and demand are fundamental factors affecting the market at all times, and sheep producers must watch the supply and demand and calculate on a safe margin between buying prices and cost of production on the one hand, and the selling price on the other hand.

Sheep feeders make a mistake when they buy feeder lambs that are too near the finish. The American market does not demand a very heavy lamb, in fact, if the lamb weighs more than one hundred pounds on foot, he will very often sell for less per pound than he would if he weighed only eighty or ninety pounds. The modern meat market man is usually a meat cutter and not a butcher. He knows very little about the live animal and the problems of production. He orders his meat from the cooler as he needs it and tries to cater to the desires of his customers. Many homekeepers and a large proportion of the hotels and restaurants demand small lamb chops and little carcasses. In reality, the keepers of restaurants and hotels, and even the meat cutters know a carcass to be a lamb carcass on the basis of size only.

Good Finish Required.

Feeders should, therefore, sell lambs or sheep which are not too heavy. They should also purchase feeder sheep before they are too near the finish. It is also important that sheep sold for slaughter be sufficiently finished, but to carry them beyond the proper finish is expensive and may reduce the meat profit considerably.

It always pays to dock the lambs. They make a neater appearance in the market and when they are not sold until they are five or six months old it helps to retain quality that is so valuable in the animal that is for slaughter.

Uniformity is also very important. If a carload of sheep or lambs are very un-uniform they must be moved around and assorted so that the shrink is increased. A carload of uniform lambs always have the advantage of a carload that lacks uniformity because uniformity influences the buyer not only because they present a more attractive appearance, but also because the buyer can calculate the approximate dressing percentage with greater accuracy.

Farmers who produce lambs and sheep for the market should attempt to have the lamb crop come at the same time, and keep a uniform type of their breeding flocks and use sires of the same breed in order that they may insure uniformity. It is just as important that the feeder who buys his sheep buy uniform lots that he may realize the advantages of uniformity.

This winter has proved a rarely exceptional one in the stock feeding industry, it having been so extremely mild most of the time that owners have not been obliged to feed as much corn and hay as usual. A short time ago it was stated that cattle in Montana were still grazing in the fields, just as they did in September and October, and many stockmen had fed no hay, while others had fed only small amounts. Similar conditions are reported as prevailing in western North Dakota.

FLAXSEED MEAL FOR THE DAIRY COWS.

I am feeding my dairy cows clover hay and silage for roughage, and oats and barley, ground equal parts. Would cottonseed meal and bran or flaxseed be best with this ration? Also, which would be the cheaper with flaxseed at \$3.50 per bushel and cottonseed meal at \$3 per cwt. and bran at \$35 per ton? How much flaxseed can be fed?

Sanilac Co.

J. A.

If J. A. means by flaxseed meal the ground flaxseed before any of the oil has been taken out, then it is not in the same class as cottonseed meal or oil meal. Flaxseed is very rich in fat, containing about thirty per cent, and the ground flaxseed would not help to balance up a ration of clover hay and corn silage, but you take out the fat in the form of linseed meal and have the oil meal left and this gives you an entirely different kind of food. This is rich in protein.

My advice would be to mix the oats and barley equal parts with wheat bran and then feed two pounds of cottonseed meal or two pounds of oil meal per day per cow and a sufficient amount of the oat, barley and bran mixture to make a pound of grain per day for every four pounds of milk produced in a day if it tests less than four per cent, and a pound of grain per day for every three pounds of milk is richer than four per cent.

C. C. L.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Heifer Fails to Come in Heat.—We have a heifer 20 months old that has failed to come in heat. What had I better give her? O. W. G., Flat Rock, Mich.—Give her 30 grains of ground nux vomica, 60 grains of ground capsicum and 60 grains of ginger in ground grain three times a day. If she is a twin and has a brother, she will perhaps never breed.

Umbilical Hernia.—Where can I purchase a clamp to use in the treatment of an eight-months-old colt that has a navel rupture? The hole in abdomen is about one inch in diameter. R. G. Hillman, Mich.—The Detroit Veterinary Instrument & Supply Company, 33 West Congress St., Detroit, Mich., or Sharp & Smith, 65 E. Lake St., Chicago, Ill., can supply you with clamp. The writer believes that the clamp treatment will fail, the abdominal wall will not unite. The wall should first be scarified, then securely stitched, then the skin stitched or clamped.

Loss of Vision.—I have a three-year-old colt that seems to be going blind. What can I do for her? I believe she can tell the difference between day and night. H. T. M., Albion, Mich.—Failure on your part to give me the history of the case and a few leading symptoms, I am unable to know what is causing this loss of vision. However, I am inclined to believe little can now be done to help postpone loss of sight. Perhaps you had better give her good care and apply no treatment.

Stifle Ailment.—I would like to know if much can be done for a stifled horse? He gets up and down all right, walks sound, but I have been afraid to work him. W. R. K., Goblesville, Mich.—If you will apply one part turpentine, one part aqua ammonia and two parts of olive oil to stifle once a day, he will be able to do moderate work.

Rheumatism.—I am anxious to know what is causing my pigs to become lame in hind quarters. They are fed corn, beans, middlings, slop and cooked potatoes. W. C., Six Lakes, Mich.—Muscular rheumatism is frequently brought on by exposure to cold, and living in damp filthy pen. Rheumatism Articular, where the joints are affected is often the result of infection of some kind. Feed your pigs less corn, more roots and some tankage. Give each 50-pound pig three grains of sodium salicylate at a dose two or three times a day.

Suppurating Glands.—One of my cows is troubled with boils on legs. These bunches seem to spring up gradually, open, discharge fluid then heal. Shall we use her milk? F. F., Petoskey, Mich.—Paint bunches with tincture iodine daily and give her 1 dr. doses of potassium iodide in feed or drinking water two or three times a day until she gets well. When a cow suffers from suppurative ailment, pus gathering either internally or locally, I do not believe it good judgment to use her milk for domestic purposes.



Stock need a spring tonic.

Most stock ailments come from winter conditions. Dry feed and lack of exercise weaken the digestive system, stunt the appetite, and poison the blood so that stock get wormy, do poorly, and waste feed. Right now all farm stock need help—for it is freshening time, farrowing time, and plowing time.

Dr. LeGear's Stock Powders

are the most effective tonic you can use—will quickly put your stock in tip-top condition. Get more milk from your cows, more work from your horses and mules, bigger and quicker gain from your hogs, sheep and beef cattle.

My stock powders are my own personal prescription developed in my 26 years of actual experience as a graduate veterinary surgeon. They contain Iron for the blood, Nux Vomica for the nerves, tonics for the appetite and digestion, laxatives for the bowels, kidney regulators and worm expellers.

Dr. LeGear's Stock and Poultry Remedies are sold by 40,000 of the best dealers—never by peddlers.

Dr. LeGear's Poultry Powder keeps hens healthy, insures winter eggs, and means more profits to you.	Dr. LeGear's Antiseptic Healing Powder cleanses, dries and heals sores and cuts quickly.	Dr. LeGear's Lice Killer (powder) rids your flock quickly of lice, protects chicks, etc.
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Free sample—ask your dealer.

Get a liberal free sample package of Dr. LeGear's Stock Powders or Dr. LeGear's Poultry Powder, also free copy of Dr. LeGear's reference book on Stock and Poultry.

Dr. L. D. LeGear Medicine Co., 712 Howard St., St. Louis, Mo.

Dr. L. D. LeGear, V. S.
(In Surgeon's Robe.)
Graduate of Ontario Veterinary College (Toronto, Can.), 1892. Nationally famous specialist in stock and poultry. 26 years' actual veterinary practice.

My positive guarantee.
Get a package of any of my remedies, test them thoroughly. If you are not satisfied I have authorized my dealer to refund your money.
Dr. L. D. LeGear, V. S.

HOGS.

OAKWOOD FARM

A few choice Duroc fall pigs left. Also a fine yearling sow bred for Mar. litter. Write for prices.
RUSH BROS., Romeo, Mich.

Registered Duroc Gilts

Descendants of the leading strains: Cherry King, Defender, King of Cols, The Professor, all bred to Col. Defender the 26th. No. 123705, his sire, Pal's Premier Col. T. No. 81021. Dam, Royal Defender No. 231580, one of the most promising herd boars in Michigan. Prices reasonable. Write for prices and further information.
THE JENNINGS FARMS, R. 1, Bailey, Mich.

DUROC-JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

DUROC JERSEYS

Gilts bred for June farrow of the heavy boned type also fall pigs either sex pairs not akin.
F. J. DRODT, R. 1, Monroe, Mich.

Duroc bred gilts for March and April farrow with quality and size. Fall pigs both sexes not akin.
W. C. TAYLOR, Milan, Mich.

Duroc Jersey Sows,

Large type, heavy boned, 1000 lb. herd boar.
JOS. SCHUELLER, Weidman, Mich.

Duroc Jerseys. A few choice gilts bred to Brookwater King Special 111467. (A full brother to Brookwater Lass D. the grand champion sow at the 1915 International). Carey O. Edmonds, Hastings, Mich.

THE WORLD'S CHAMPION

big type O.I.C.'s. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. I. C. boar assisted by C. C. Schoolmaster, Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. O. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Oradell's prize hogs, Cass City, Michigan.

Breed The Best

THE WORLD NEEDS LARGE FAT HOGS

Why lose money breeding and feeding scrub hogs? Two of our O. I. C. Hogs Weighed 2806 Pounds. We are the most extensive breeders and shippers of pure bred hogs in the world. Write today for the true story of the real O. I. C. Hogs. All foreign shipments U. S. Government Inspected. We have bred the O. I. C. Hogs since 1863 and have never lost a hog with cholera or any other contagious disease.

WRITE TODAY—FOR FREE BOOK "The Hog from Birth to Sale"
THE L. B. SILVER CO.
196 Heights Temple Bldg.
CLEVELAND, OHIO

Shadowland Farm

O. I. C.'s

Bred Gilts

200 to 300 lbs. from prize winning stock. A few fall yearlings and 2 yr. old sows, big type, growthy boars of all ages, guaranteed as breeders. Everything shipped C. O. D. Express paid and registered in buyers name. J. CARL JEWETT, Mason, Mich.

O. I. C. and Chester White Swine

Strictly Big Type with QUALITY. I am sold out of everything but fall pigs. These pigs are as good—and I think better than any I ever bred. I am one of the oldest breeders of Big Type in the U. S.
NEWMAN'S STOCK FARM, R. 1, Marietta, Mich.

Chesters

Gilts bred for March, April and May farrow from mature stock of the large prolific kind. Satisfaction guaranteed.
F. W. ALEXANDER, Vassar, Mich.

O. I. C. BRED GILTS

all sold. Have some good last fall boars.
OTTO B. SCHULZE, Nashville, Mich.

O. I. C.'s

big type serviceable boars. Yearling sows and gilts bred for spring farrow.
G. P. ANDREWS, Danville, Mich.

O. I. C.

Boar, 14 months old. Large fall pigs of either sex.
C. J. THOMPSON, Rockford, Mich.

O. I. C. Gilts

bred for Mar. and April farrow a few good fall boar pigs about 100 lbs. I ship C. O. D., pay express, guarantee to please. F. C. Burgess, R. 3, Mason, Mich.

O. I. C. Gilts to farrow in March and April.

Also fall pigs, either sex.
CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C. Bred Gilts All Sold.

H. W. MANN, Danville, Mich.

FOR 25 YEARS

This establishment has been head quarters for Big Type Poland Chinas. We have a nice lot of boars and sows of strictly big type breeding at very low price. Let me know what you want. Bell phone.
JNO. C. BUTLER, Portland, Mich.

FRANCISCO FARMS

SHORTHORNS—POLAND CHINAS

Three choice heifers and a few young cows to offer. Also fine good gilts bred for late spring farrow. Prices are attractive.
P. P. POPE, Mt. Pleasant, Mich.

Big Type Poland Chinas

A 400 lb. Aug. 29 yearling and a few 250 lb. Apr. gilts. Quality stuff, registered, and cholera immune. Bred for Mar. and Apr. farrow.
WESLEY HILE, R. 6, Ionia, Mich.

Additional Stock Ads on Page 358

Market Reports

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, February 27.

WHEAT.

An increased volume of wheat is being transferred, although the market remains fairly quiet. The visible supply for this country decreased 4,988,000 bushels during the week. Crop prospects have changed but little. One year ago No. 2 red wheat sold on our local market at \$2.17 per bushel. Present prices here are:

No. 2 red	\$2.30
No. 2 mixed	2.28
No. 2 white	2.28

CORN.

Corn has recovered a little more of the late decline and the market holds firm on the new basis. The opinion is growing that farmers are holding less of this grain than dealers have figured on. Hogs and other stock are being fed liberally as farmers can realize more for their grain through feeding than by selling for cash. The reports state that thirty country elevators in central Illinois have no stocks of this grain. The visible supply increased 321,000 bushels during the past week. One year ago No. 2 corn sold on this market at \$1.80 per bushel. Present prices here are:

No. 3 corn	\$1.33
No. 3 yellow	1.38
No. 4 yellow	1.33
No. 5 yellow	1.30
No. 3 white	1.36

OATS.

With a decrease of over a million bushels in the visible supply of this grain the market is maintained at prices slightly advanced over those of last week in spite of comparatively slow buying. Barley is said to be competing with oats as a feed more than in past years. A year ago the local trade was paying 97c for standard oats. Present prices here are:

Standard	62½
No. 3 white	62
No. 4 white	61

BEANS.

While there has been some improvement in the bean situation at Detroit, other points complain of large accumulations and a very moderate absorption by the retail trade. At New York the choice pea beans are quoted at \$7@7.55 and fair to common at \$6@6.75, with mediums at \$7.50 per cwt. The

Chicago trade reports no new developments with stocks far in excess of demands. Prices there show further declines over those reported a week ago. Hand-picked pea beans, choice to fancy bring \$6.25@6.75 and choice to fancy red kidneys \$11@11.50. Detroit dealers report a firm market with prices advanced over last week. The government is now taking stocks of this product. Immediate and prompt shipment are quoted here at \$8 per cwt.

POTATOES.

At Michigan country points farmers are receiving from 95c@1.10 per cwt for U. S. No. 1 round whites. Many growers are holding for higher prices. At Detroit jobbers are paying \$2.40 per 150-lb. sack of the above grade. At Cleveland they are moving at \$1.75 per cwt; at Philadelphia \$2.25; at New York \$2.90@3 per 150-lb. sack; at Pittsburgh \$2.60@2.70; at Cincinnati \$1.75 per cwt; at Indianapolis \$1.70@1.75; at Chicago \$1.55@1.60; at Columbus \$2.95@3 per 150-lb. sack.

RYE.

There is practically nothing doing in this grain with the local exchange publishing a nominal quotation of \$1.40 for cash No. 2. The visible supply of the United States decreased 417,000 bushels during the week.

BUTTER.

Prices here are a fraction above the quotations of last week. The demand is good and receipts are only moderate. Fresh creamery stock is quoted at 50½@52c per pound. The Chicago market is higher with creamery quoted at 42@55c. The New York market continues firm with the price ranging from 49@56c. At Philadelphia prices are higher, with western creamery extra bringing 55c.

EGGS.

Offerings of eggs are very large for the season, but the demand is keeping apace and prices are holding steady with last week. At Detroit fresh firsts are quoted at 39c and extra firsts at 40c. The Chicago trade is higher with firsts at 39½@39¾c and ordinary firsts at 38@38¾c. Philadelphia trade is paying \$12.60 per case for western firsts.

POULTRY.

The demand for poultry is active and prices show some improvement. Quotations for live are: No. 1 springs 61@32c; small springs 30@31c; hens 30@34c; roosters 23@24c; geese 24@25c; ducks 36@37c; turkeys 35@36c.

Live Stock Market Service

Reports for Thursday, February 27th

DETROIT

Cattle.

Receipts 3,054. Good cattle steady; cow grades and butcher cattle 25@50c higher.

Best heavy steers	\$14.00@15.00
Best handy wt bu steers	12.50@13.50
Mixed steers and heifers	11.00@12.00
Handy light butchers	10.00@11.50
Light butchers	8.00@9.75
Best cows	9.50@10.50
Butcher cows	8.00@9.50
Cutters	7.00@7.50
Canners	6.00@6.75
Best heavy bulls	10.00@11.00
Bologna bulls	8.50@9.50
Stock buls	7.50@8.50
Milkers and springers	65@110

Sheep and Lambs.

Receipts 3,583. Market steady.	
Best lambs	\$18.00
Fair lambs	16.50@17.50
Light to common lambs	14.50@15.50
Yearlings	14.00@15.50
Fair to good sheep	10.00@11.00
Culls	7.00@9.00

Hogs.

Receipts 10,947. Market steady.	
Pigs	\$16.00
Mixed hogs	17.50

BUFFALO.

Cattle.

Market steady. Prime heavy steers \$17@18; best shipping steers \$13@14; medium shipping steers \$11.50@12.50; best native yearlings 900 to 1,000 lbs \$10@16; light native yearlings, good quality \$13@14; best handy steers at \$12.50@13; fair to good kinds \$10@11; handy steers and heifers mixed \$10.50@11; western heifers \$11@12; best fat cows \$9@10.25; butchering cows \$7@8; cutters \$6.50@7.25; canners \$4.50@

5.50; fancy bulls \$10@11; butchering bulls \$8@9; common bulls \$6@7; best feeding steers 900 to 1000 lbs \$10.50@11.50; medium feeders \$9@10; stockers \$7@8; light common \$6@7; milkers and springers \$75@150.

Hogs.

Market steady. Yorkers and mixed \$18.25; medium and heavy \$18.25@18.45; pigs and lights \$16.50@17.25.

Sheep and Lambs.

Market steady. Top lambs at \$19; yearlings \$16@16.50; wethers \$15. Calves \$21; grass calves \$5.50@8.

CHICAGO.

Cattle.

Receipts 8,000. Good and choice beef and butcher cattle 15@25c higher; others steady. Good to prime choice steers \$16.50@20; common to medium butchers \$10.75@16.50; heifers \$8@15.50; cows \$7.75@15; bologna bulls \$8.25@13; canners and cutters \$6.50@7.75; stockers and feeders, good \$11.25@15; do. medium \$8.25@11.25.

Hogs.

Receipts 45,000. Held over 23,972. Market slow but steady; dull on light weights. Tops \$17.70; bulk of sales at \$17.40@17.60; heavy \$17.60@17.70; mixed and light \$17.40@17.60; packers' hogs \$16.50@17.25; medium and heavy \$17.10@17.40; light bacon hogs \$16.50@17.50; pigs, good to choice \$14@16.25; roughs \$16@16.50.

Sheep and Lambs.

Receipts 16,000. Market unevenly higher. Choice shorn natives \$16.75; choice to prime lambs \$18.75@18.85; medium and good lambs \$17.25@18.75; culls \$14@15.75; medium good and choice feeders \$16@17.25; choice yearlings \$17.50@18.40; medium and good yearlings \$14@17.15; wethers medium and good \$12.50@13.85.

You can't go wrong on Apex Brand Field Seeds

Not "how cheap", but "how good" is the basis on which the successful Michigan farmer buys his field seeds. And the wisdom of that policy is expressed in terms of more bushels per acre at harvest time.

Why not take advantage of the satisfactory experience of thousands of successful Michigan farmers and buy Apex Brand Field Seeds this season. You can't buy better, for Apex Brand Field Seeds are exactly suited to Michigan soil and climate. They're all northern grown—re-cleaned—tested by experts for purity and germination—backed by Michigan's largest exclusive field seed house—sold in Michigan for over 25 years.

If your dealer can't supply you—we'll send you samples and give you the name of the dealer nearest you. Write us today.

CAUGHEY-JOSSMAN COMPANY
DETROIT, MICH.

APEX BRAND Re-Cleaned and Tested FIELD SEEDS

Auction of Registered Stock

Wednesday, Mar. 5, 1919; 10 o'clock

On the farm 1½ miles south of Plymouth, we will sell at auction, 50 head of registered and high grade Holstein and Jersey cattle all tuberculin tested. Registration papers free of charge. Three 6 year old horses, weighing 1450 to 1800 lbs. 7 head of ewes bred to reg. Hampshire ram and 4 head of Reg. Ham. Ram lambs 8 mos. old. Autos will meet all P. M. trains at Plymouth and electric cars on day of sale.

F. W. & W. H. KENNEDY, Auctioneers **Col. Harry C. Robinson,**
F. T. Boyle.

The Michigan Live Stock Insurance Company

A Michigan organization to afford protection to Michigan live stock owners. We have paid over \$17,000 in death losses since we began business July 5th, 1917.

Is there any stronger argument for this class of insurance than \$17,000 of losses on \$1,500,000 of business?

Your animals are well and sound today but tomorrow some of them are dead. Insure them before it is too late.

We indemnify owners of live stock—horses, cattle, sheep and hogs, for loss by accident and disease.

See our agent in your vicinity.

Colon C. Lillie, Pres.
319 Widdicomb Bldg., Grand Rapids, Mich.

Harmon J. Wells, Sec.-Treas.
Graebner Bldg., Saginaw, W. S., Mich

HOGS.

Big type Poland Chinas. Spring gilts of the best of breeding. With quality from 1000 lb. sire's and 800 lb. dam's. Will be bred to a great son of the noted 5600 Gertdale Jones. Also fall pigs.

W. BREWBAKER & SONS, R. 5, Elsie, Mich.
P.C. bred gilts sold. For sale herd boar prospect 17 mo. old, wt. 600 lb. with quality, sire Buster Giant, 269533, dam Nemo L. 548940 an 800 lb. sow in flesh. Sire sold for \$1500, priced reasonable. Free livery from Parma. **W. E. LIVINGSTON,** Parma, Mich.

Big Poland Chinas with quality. For sale, summer and fall gilts, and a big boned good spring boar.
G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Large Type P.C. boars all sold. Spring gilts and young tried sows, bred for March and April farrow. Free livery from Augusta. **W. J. Hagelshaw,** Augusta, Mich.

B.T.P.C. Bred gilts, the best lot ever on the farm at prices any good farmer can afford to pay.
H. O. SWARTZ, R. 37, Schoolcraft, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain.
A. A. WOOD & SON, Saline, Mich.

Big Type P. C. Choice bred sows from Iowa's greatest herds, the big bone prolific kind with size and quality.
E. J. MATTHEWSON, Burr Oak, Mich.

Big Type Poland Chinas. Spring boars all sold. Bred gilts ready for shipment. Inspection invited.
L. L. CHAMBERLAIN, Marcellus, Mich.

P.C. Bred Sows Large style best we ever owned. Satisfaction or no sale.
B. W. MILLS, Saline, Mich.

Additional Stock Ads. on Page 359

HAY.

Offerings are small and market firm at the following prices: 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 \$23.50@24.

SEEDS.

Market is active and steady, with prime red clover at \$25; March \$24.75; alsike \$17.25; timothy \$4.75.

FEEDS.

Prices are steady at the reduced quotations reported a week ago as follows: Bran \$46@48; standard middlings \$47@48; fine middlings \$48@50; coarse corn meal \$55; cracked corn \$55; chop \$48.50 per ton in 100-pound sacks.

GRAND RAPIDS

Onions moved more freely the past week. One wholesale firm shipped a dozen cars. Price to growers is \$1.65 per cwt. unsacked. Beans continue dull at \$5.50@6 per cwt in most localities in this section of Michigan, but some sales have been made at \$5 by growers. The U. S. government report shipment of only eight cars out of the state the past week. White potato market is a little firmer and the price to growers is still 90c@\$1 per cwt. Federal report shows 65 cars shipped out of the state last week. The total for Michigan this year is 5,266 cars. The crop of Michigan grown cabbage is about exhausted in this section and first import of Wisconsin was made last week.

THE NEW YORK PRODUCE MARKET.

Butter.—The butter market has been weak and fluctuating throughout the week. On Monday with light receipts the quotation on butter of high quality advanced one cent, but on the following day increased receipts and scarcity of buyers caused a marked break and the quotation on extras declined four cents. That was followed by a further drop of one cent on Wednesday. From Tuesday to Thursday very little butter moved but on Friday there was a fair amount of trading and a gain of a half cent was made. The established quotations at present are as follows: Extras (92 score) 52½@53c; higher scoring than extras (93 score or higher) 53½@54c; firsts (88 to 91 score) 46½@51½c; seconds (83 to 87 score) 43@45½c.

Cheese.—The situation as regards cheese has changed very little from last week. There has been a slight downward tendency because of reports of increased makes in the western cheese producing areas. As yet there has been no great influx of fresh make. There continues to be a scarcity of high quality held cheese. Good quality, current make, average run, is quoted at 28@29½c. Specials have a range of values of about one cent higher.

Eggs.—The egg market continues unsettled and fluctuating. Merchants are making unusual efforts to keep their stocks cleaned up. Even slight accumulations are a signal for a reduced price. The bulk of the trading during the week has been in firsts, which are quoted at 40½@42½c. Extra firsts are selling at 42@43c, while a few fresh gathered extras reach a price of 44c.

Poultry.—Receipts of live poultry have been light during the week. The market is strong and active with prices tending to advance. Fowls sell readily at 40c; smooth-legged chickens at 34c; old roosters 26c; turkeys 35@40c; ducks 40c; geese weak at 21@22c.

Let Me Fatten All Your Hogs With HOG-TONE For 60 Days

FREE



W. O. GANDY
President
AVALON
FARMS
COMPANY



Keep Your Money In Your Pocket! Don't Send Me A Cent!

I Guarantee To Put More Pounds Of Clean, Top-Price Pork On Them With The Same Amount of Feed!

THAT'S exactly my proposition. You pay nothing to try HOG-TONE. I take all the risk. And you pay nothing, if, after 60 days, you are not perfectly satisfied with results.

This is the third year I have been making this offer. Today, wherever you go, you will find readers of this paper who are strong boosters for HOG-TONE.

I will send you enough Avalon Farms HOG-TONE to treat all your hogs for 60 days just the minute the coupon below, filled out by you, reaches me. I don't want you to send any money with the coupon.

If that HOG-TONE fails to make your hogs make more money for you—if they don't gain more weight faster on the same amount of feed—I DON'T WANT YOU TO EVER PAY ME A PENNY!

There's no trick in this. If there was, this ad could never appear in this paper. Now I want you to take me up on this offer and make me prove what I claim

Just Mail Me the Coupon Below and I Will Send You Enough

AVALON FARMS HOG-TONE

—The Liquid Fattener, Conditioner and Worm Remover—
To Treat All Your Hogs For 60 Days!

Avalon Farms Hog-Tone is a highly concentrated liquid medicine for hogs only. Contains highly important medicinal liquid ingredients which cannot be combined in Medical Salts, Stock Foods or Condition Powders of any kind. Safe. Easily mixed with any slops, drinking water or dampened feed. A \$1.00 bottle treats 8 hogs for 60 days.

Given only every third day for first six weeks and after that once a week. Thoroughly proved on Avalon Farms, near Fort Wayne, Indiana, almost invariably successful in cleaning out Stomach, Bowel and Bronchial Worms that infest hogs. Protects hogs from easily contracting Cholera, Rheumatism, Scours, Thumps, caused by worms and indigestion, Enteritis, Indigestion and other diseases.

Wonderful tonic and conditioner—gives hogs voracious appetites, aids digestion, makes them thrive and put on flesh fast. Best known tonic for sows during gestation. Its use insures strong, healthy pigs. Reliable worm-exPELLER, safe to use at this time.

Write me at once for your 60 Days' Supply of HOG-TONE on Free Guarantee Trial. W. O. GANDY, President

AVALON FARMS CO.
922 RAND McNALLY BUILDING, CHICAGO

As you know, Michigan Farmer guarantees all advertisements in their pages. So you have my guarantee and Michigan Farmer guarantee behind this special offer. Absolute satisfaction or you pay me not one cent.

HOG-TONE GREAT FOR THE KUNTS

"I had a runt pig I would have sold for two dollars at the time I started giving AVALON FARMS HOG-TONE. Now I wouldn't take fifteen dollars for it. Time won't allow me to tell all this medicine has done for this pig."

W. J. WILEY
South Branch, Mich.

SAVED HIS PIGS

"I can truthfully say that AVALON FARMS HOG-TONE is just as good as you claim it to be. I had lost two pigs, but HOG-TONE saved the balance of the litter and they pulled through all O. K. and can recommend the remedy on its merits."

JOHN KELLEY
Erie Lake, Mich.

MADE SHOATS EAT

"Received your HOG-TONE and when I did I had five shoats that would not go to the trough to eat. I mixed a dose for each one at night and poured it down them and the next time they were at the trough as soon as any of them. They all began to gain after a few doses. So HOG-TONE is what you claim it to be."

MARK MCGAULEY
Fowlerville, Mich.

GOT A SICK HOG ON HIS FEET IN TEN DAYS

"Last year I had a hog that couldn't get up on his feet at all. He didn't grow any and everyone said he would die. After using HOG-TONE for only ten days he got on his feet and began to gain rapidly."

HOWARD HELMS
Morley, Mich.

Clip in the Spring

Treat your horses with consideration. You wouldn't do your spring work wearing your winter overcoat—don't make your horses work while burdened with the winter's clothing. Clip them. A Stewart machine costs only \$9.75 and lasts a lifetime. Send \$2.00 and pay balance on arrival. Or write for 1919 catalog showing complete line of clipping and shearing machines.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. A127, 12th St. and Central Ave., Chicago, Ill.

We Buy—We Sell

WHEAT OATS RYE CORN BRAN—Middlings FEEDS Carloads or less CARPENTER GRAIN CO. Battle Creek - - - Michigan

Wanted. Practical farmer wishes to lease about 100 acre Dairy and Fruit farm with stock, or will work by the year. References. CHAS. LIDELL, Box 13, Bendon, Mich.

For Sale cheap 1 second hand 4 wheel Tractor with 3 1/2 in. bottoms gang. In good condition. J. E. DENNISTON, R. 5, Kalamazoo, Mich.

Binder Twine Get our low 1919 prices. Farmer agents wanted. Sample free. THEO. BURT & SONS, Melrose, Ohio.

CULOTTA & JULL

Eastern Market, Detroit, Mich.

We need your shipments of Poultry, Veal, Dressed Hogs, Live Roasting Pigs, Eggs, Live Rabbits and Game. Highest prices possible obtained on arrival. We can handle your Potatoes, Onions, Apples, Cabbage and root crops, carlots or less. Your shipments will be appreciated and have our best care and attention, and you don't have to wait for your money. Reference Peninsular State Bank.

Mr. POULTRY FARMER:

We make a specialty of White Henner Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henner Whites—We remit same day shipments arrive. Ship Often—Ship by Express

GEO. R. ELDRIDGE CO.
494-18th Street, Detroit, Mich.

Remember! We guarantee you satisfaction with every shipment.

Holmes, Stuve Co., 445 Riopelle St.

Commission Merchants. Dressed Beef, Hogs, calves, Poultry, Live & Dressed, Provisions, etc. Correspondence Solicited. Ref. Wayne County & Home Savings Bank, Bradstreet, Detroit, Mich. Cad. 285.

Wanted: Michigan 80 to 125 pound healthy pigs in car lots. We buy them all year. Write Danville Stock Hog Co. Danville, Illinois.

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

HOGS

Mammoth Poland Chinas. Choice lot early fall pigs now ready to ship. Double Immune. Inquire Clyde Weaver, Ceresco, Mich.

Large type Poland China's breed gilts all sold. Fall pigs of either sex for sale. Sired by 800 lb. yearling. A. A. FELDKAMP, Manchester, Mich.

MICH. Champion herd of Big Type P.C. Nothing for sale but fall pigs; orders booked for spring pigs. E. R. LEONARD, St. Louis, Mich.

Gilts sold have one yearling P. C. sow bred for May farrow, bull calf 4 months old, Pure bred Short-horn. Price \$100. John D. Wiley, Schoolcraft, Mich.

Hampshire Hogs The International Grand Champion Hog of 1918, both sexes for sale. Spring deliveries booked now. ELI SPRUNGER & SON, Saginaw, W. S. Mich.

Hampshires Boars at a bargain bred gilts all sold. JOHN W. SNYDER, R. 4, St. Johns, Mich.

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"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made. We Pay the Freight.

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cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

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LOW PRICED GARAGES Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles. THE EDWARDS MFG. CO., 317-367 Pike St., Cincinnati, O.

FREE Samples & Roofing Book

THREE NEW World's Champion Records—and

Where
Sanitary
Conditions
Prevail

ARDEN FARMS, Inc.
St. Paul, Minn.

PURE
BRED
HOLSTEIN
FRIESIANS

The Quaker Oats Co., Chicago, Ill.

We have been feeding **SCHUMACHER FEED** to the two new World's Champion heifers, **JEWEL PONTIAC SEGIS** and **BEAUTY BEETS WALKER SEGIS**, for some time and are pleased with the results. We also enclose herewith a circular showing the World's Records made by **BEAUTY GIRL PONTIAC SEGIS** another of our young heifers that has broken twenty records in all. I am pleased to advise that she was also fed on **SCHUMACHER FEED**.

Yours very truly,
J. M. HACKNEY.

"THE proof of the pudding is in the eating." Results are what count and results are what you want from your dairy cows. When we tell you that **SCHUMACHER FEED** is the greatest result producing, carbohydrate or maintenance dairy ration, the assertion is backed up by facts as per the above letter from Senator Hackney—facts that are indisputable. When 32 World's Champion Cows have made their world's records while fed **SCHUMACHER FEED** as a carbohydrate part of their ration, it's pretty good evidence that it will prove the best result producing feed for YOUR cows.

Schumacher Feed AND Big "Q" Dairy Ration

fed in combination make the ideal dairy ration for long time milk production. **SCHUMACHER FEED** because of its palatability, high digestibility and sufficient bulk keeps cows "on their feed" and—supplies them with vitality and reserve energy to "stand up" under long distance production—this is proven in the fact that of the 32 World's Champion records to its credit, 25 were on long time production.

BIG "Q" DAIRY RATION is first, last and all the time a **QUALITY** protein ration—a wonderful milk producer. With **SCHUMACHER** as a maintenance part of the ration and **BIG "Q"** as the milk producing part of the ration you are assured maximum milk production over long milking periods. Give it a trial—get it from your dealer—if he can't supply you, write us.

The Quaker Oats Company

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CHICAGO, U. S. A.

Jewel Pontiac Segis

World's Champion Jr.
3-Year Old Holstein.
In 365 days produced
1171.15 lbs. Butter and
27068.5 lbs. Milk.

Beauty Beets Walker Segis

World's Champion Jr. 2-Yr. Old
Holstein. In 365 days produced
1040.64 lbs. Butter and 26343.20
lbs. Milk. This heifer broke 20
world's records in her first two
lactation periods.

Beauty Girl Pontiac Segis

of Arden Farms, Inc.
World's Champion Jr. 3-Yr. Old
Holstein-Friesian.
At age of 3 years, 2 months and
7 Days, produced 1112.91 lbs.
Butter and 24924.70 lbs. Milk.