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DETROIT, MARCH 22, 1919



CURRENT COMMENT

Vote on the Amendments

At the general election to be held on Monday, April 7, there will be submitted to the electors three proposed amendments to the constitution of the state. Amendments to the fundamental law of the state are the most important propositions the voters of the state are ever called upon to consider—more important by far than the choice of candidates for the various offices to be filled. For this reason all the proposed amendments to the constitution should receive the most careful consideration of every voter.

The first proposed amendment to be submitted for approval or rejection at the coming election is an amendment to Section 10, Article X of the constitution authorizing the state to borrow money to be used for highway purposes and to issue bonds therefor, and to read as follows:

Section 10. The state may contract debts to meet deficits in revenue, but such debts shall not in the aggregate at any time, exceed two hundred fifty thousand dollars. The state may also contract debts to repel invasion, suppress insurrection, defend the state or aid the United States in time of war. The money so raised shall be applied to the purposes for which it is raised or to the payment of the debts contracted. The state may borrow not to exceed fifty million dollars for the improvement of highways and pledge its credit, and issue bonds therefor on such terms as shall be provided by law.

The effect of this proposed amendment, if adopted, would be to enable the legislature to provide for the issue and sale of bonds for such amounts as seems advisable to use for permanent road improvement in the state. It is understood that such authorization and sale of bonds would be for current needs only. The fifty million limit simply marks the point beyond which the legislature cannot go. The proposed plan under which the money thus raised would be applied to the improvement of Michigan roads is outlined elsewhere in these columns. It is a plan which should meet with general approval. The adoption of this proposed amendment would be of undoubted benefit to the farmers of the state. The

completion of trunk line roads under this plan would bring the average farm in closer touch with consumers' markets, and thus aid materially in the solution of the marketing problem, besides the other advantages which would accrue from the completion of a trunk line road system reaching every county in the state.

The second of the proposed amendments would change Section 3, Article XVI of the constitution to read as follows:

Section 3. Neither the legislature nor any municipal authority shall grant or authorize extra compensation to any public officer, agent, employee or contractor after the service has been rendered, or the contract entered into. Salaries of public officers except Supreme Court justices, circuit court judges, probate judges and judges of courts of like jurisdiction, shall not be increased nor shall the salary of any public officer be decreased after election or appointment.

The effect of this proposed amendment, if adopted, will be to permit the increase of salaries of justices of the Supreme Court, probate, judges and judges of other courts of record during their terms of office, in like manner as the constitution now permits the increase of salaries of circuit court judges.

The third and last, but not the least important of the proposed amendments is one which would add a new section to Article XVI of the constitution, to read as follows:

Section 12. It shall be forever lawful in this state to import, transport, manufacture, use, buy, sell, keep for sale, give away, barter or furnish every kind of cider, wines, beer, ale and porter, and to possess the same in a private residence. So much of Section 11, Article XVI of this Constitution as prohibits the manufacture, sale, keeping for sale, giving away, bartering or furnishing vinous, malt, brewed or fermented liquors, is hereby repealed. The legislature by general laws shall reasonably license the manufacture of, and reasonably license and regulate the sale and keeping for sale of vinous, malt, brewed or fermented liquors. Provided, however, that the electors of each city, village or township forever shall have the right to prohibit the manufacture, sale or keeping for sale of vinous, malt, brewed or fermented liquors within such city, village or township."

This is the so-called beer and light wine amendment, and its effect, if adopted, will be to provide for the re-establishment of the saloon as an institution in this state under local option provisions. Its import is so well understood by the average voter as to make further comment superfluous.

Proposed Live Stock Committee

THE tentative plan adopted at a conference of live stock producers and packers recently held at Chicago, as noted in another column of this issue, is worthy of the careful consideration of the live stock producers of the country. It was the sense of those participating in the conference, including a score of representatives from corn belt live stock organizations, that the cooperation proposed under the plan would be beneficial to all concerned, including the consumer. Briefly the plan contemplates the formation of a committee consisting of one representative from the Bureau of Markets, two from the National Live Stock Exchange, ten producers representing the cattle, hog and sheep industries, and ten packers, with a producer as chairman. Under the plan the producers present at the conference will ask the live stock producers' organizations of the various states to send three delegates to a general meeting which will be called to select the ten producers' representatives to serve on the central committee. The central committee is to meet at least once a month under the proposed plan, to study all conditions surrounding the live stock industry, from the supply of live stock and feed to the methods and earnings of the packers, to make recommendations to both

producers and packers, and to regulate, so far as practicable the receipts of live stock during abnormal times. Under the plan sub-committees would be appointed for the various markets.

It is understood that if the proposal becomes operative it shall not be construed as limiting the activities of the parties to same from working for or against the passage of pending or future federal legislation for the regulation of the packing industry. The most promising feature of the plan is the bringing about of a better mutual understanding of the problems of producers and packers, which is essential to their best solution.

The Road Bonding Proposal

SO many inquiries have recently been received for detailed information in regard to the proposed expenditure of money which would be derived from the sale of bonds for highway improvement in case the proposed amendment to the constitution is adopted that it seems best to repeat some of the information previously given in these columns.

First, it should be understood that in the event of the adoption of the proposed amendment it would be the duty of the legislature to determine the amount of money to be raised by the sale of bonds and the manner of its expenditure. Plans which have been advanced are merely tentative, as expressing the judgment of highway officials and public spirited men who have a broad vision of what a completed system of good roads would mean to the state.

Briefly, the surveyed plan of trunk line systems laid out for Michigan contemplates the improvement of more than 5,000 miles of roads. These trunk lines embrace two main roads from the southern state line to Lake Superior, one on each side of the state, several east and west main lines, and numerous connecting roads. The system as laid out extends into all of the eighty-three counties of the state. About two thousand miles of this proposed system have already been permanently improved by counties, townships and districts under the state reward act. About three thousand miles remain to be built, and much of the road already built needs still further improvement to withstand the heavy traffic, particularly of motor trucks which was not anticipated under the original plan of improvement.

The promoters of this proposed amendment have worked out a plan to be embodied in subsequent legislation if the proposed amendment is adopted, under which the counties in which these roads would be built would contribute to the cost in proportion to their assessed valuation. Under this plan the eighty-three counties would be arranged in nine groups. The group having the lowest assessed valuation or less than \$50,000 per trunk line mile of road to be built within their limits, would pay ten per cent of the cost of building, the state paying ninety per cent. The group having the largest assessed valuation, or over \$300,000 per trunk line mile of road to be built within their limits would pay fifty per cent of the cost, and the state fifty per cent. The various intermediate groups would, under this plan, contribute in proportion to their assessed valuation as related to the miles of road to be constructed within their limits. The plan contemplates that any county may pay the total cost of their apportionment in a single year or in yearly installments covering a period of years by direct taxation at a rate not to exceed one mill on the total assessed valuation or by the issuing of short-term bonds.

This plan may, of course, be altered somewhat by the legislature in the enactment of legislation pursuant to the adoption of the amendment, if it receives the approval of the electors

on April 7, but this tentative plan will give the average voter a fairly clear understanding of the proposition involved.

News of the Week

Wednesday, March 12.

THE supreme council at Paris considers the eastern boundaries of Germany and the probabilities are that east Prussia will be formed into an independent state.—German industrial leaders suggest that Great Britain take over a certain percentage of the German industries from the earnings of which German indemnities are to be paid.—Bolshevik forces in northern Russia are repulsed by allied troops.—William Jennings Bryan declares for nationalism but thinks the proposed League of Nations should be amended to protect American interests.—The citizens of Detroit will be asked to vote upon the purchase of the electric car lines within the city limits.

Thursday, March 13.

A NIGHT attack forces allied troops in northern Russia to retreat.—Peace conference invites small nations to present their views on international relations before the conference.—The Bolshevik troops in Germany surrender unconditionally to the government and are giving up all arms and ammunition.—The former Austrian emperor is seriously ill at Geneva, Switzerland.—Within ten days 1,471 Michigan troops will be due to reach New York.—The government announces that the campaign for the Victory Liberty Loan will open Monday, April 21 and close Saturday, May 10, during which time \$7,000,000,000 of bonds are to be sold.—Ontario legislature is considering the consolidation of its rural schools.—President Hutchins of the University of Michigan resigns.

Friday, March 14.

IT is announced that the allies will raise the blockade around Germany, provide her with food and invite her to join the League of Nations after the preliminary treaty is signed.—Twelve thousand Spartans are awaiting court-martial proceedings.—The failure of congress to pass appropriation bills forces the United States employment offices to close all employment agencies in the state except two.—Mexico is asking for guns and ammunition to protect American property in that country.—A federal grand jury indicts nineteen men who are charged with bringing liquor into Michigan from Ohio.

Saturday, March 15.

ALLIED and German delegates formally agree on the provisioning of Germany and the surrendering by Germany of her mercantile fleet.—The original plan for the linking together of the League of Nations and the peace treaty is being followed by the delegates.—Both English and American aviators will attempt flights across the Atlantic within a month.—Riots in eighty-five localities in Korea are reported.—Nine sailors were drowned when an American naval transport bound from Baltimore to Copenhagen strikes a mine.—The Canadian parliament is planning to adjourn in April without giving consideration to the tariff question.

Sunday, March 16.

IT is reported that Italy will insist on annexation of Fiume.—Belgium demands the seizure of machinery and live stock taken by the Germans during the occupation of Belgian territory.—Secretary Daniels sails for Europe to get information on the probable limitation of naval armaments on which to base his report to congress.—A tornado sweeps across Mississippi killing at least seventeen persons and injuring scores.—It is estimated that the income tax returns may reach the billion dollar mark.—Buildings and other projects in progress and pending show a total investment for the country of \$1,708,738,936 and for Michigan \$121,105,394.

Monday, March 17.

THE allied board has listed thirty-one kinds of crimes which were committed by the enemy during the war.—Disturbances between American and Japanese soldiers at Tien Tsin, China, are reported.—President Wilson insists that the League of Nations scheme must be embodied in the preliminary peace treaty.—The arrangements are completed for the use of German liners to return United States troops.—A fire in the railway yards at Atlanta, Ga., does \$1,000,000 worth of damage.—Another attempt is made on the life of Lenin, the Russian Bolshevik premier.—A board has been appointed to hear the claims of persons

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DEVOTED
TO
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A Practical Journal for the Rural Family

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New Sources of Income

THE great economic weakness in the dairy industry is the fact that the sale of milk and its derivatives is entirely inadequate to meet the operating charges of the farm and dairy. After making a careful study of the income and expenditures on some of the best managed dairy farms in several dairying regions I find that the proceeds from the sale of dairy products, no matter how good the cows or how efficiently they are fed and cared for, does not pay adequate returns upon the capital invested and labor expended. It is easy for agricultural and dairy experts to tell dairy farmers how to increase their profits through feeding more efficient cows and growing a better variety of food crops, but there is a limit beyond which the skillful farmer and feeder cannot succeed in reducing the operating charges of his farm and maintaining his cows at maximum efficiency during the year.

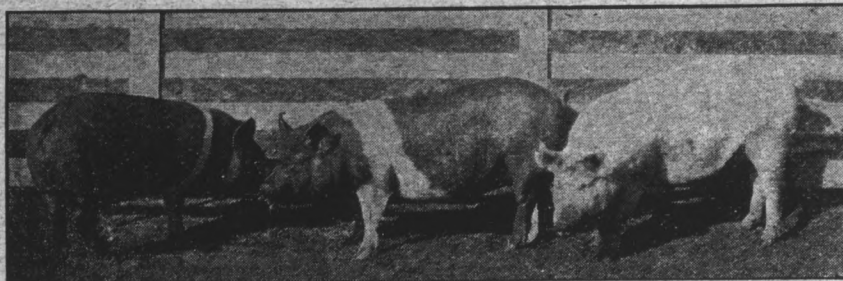
The dairy farmer is in much the same predicament as some of the great railroad corporations that have invested millions of dollars in roadbeds, terminals, eliminating grades and curves and organizing fast freight and passenger service before the volume of traffic on their lines warranted such an expenditure. In order to put such lines on a dividend-paying basis and provide steady traffic for the main line it is often necessary to buy or build, branch lines to serve as feeders and originate new business in the intervals during the year. Is it not possible for the dairy farmer who is operating his farm and dairy at a heavy cost to put his business on a better paying basis by going out and developing new lines that will bring more business from such sources as Pigston, Egg Harbor, Lamb Crossing, Horse Falls, Orchard Park, Wheatfield and Spudville?

For many years dairy farmers have been lectured to about the possibilities of reducing the cost of producing milk through growing new and wonderful nitrogenous crops. But when we get right down to "brass tacks," the most one can do is to seek to increase the yield of standard farm crops and feed them to dairy cows that have the ability to make profitable use of them when supplemented with protein concentrates. The truth is that after the dairy farmer has filled his mows and silos with clover, mixed hay, and well-matured corn, he has done about all that he can do toward reducing the cow's cost of living.

The Help Problem.

Most dairy farmers understand the principles and believe in employing more labor, but to apply them may require readjustments on many farms. To make labor permanent and dependable a good part of it must be made up of married men living on the farm. That means one must provide suitable cot-

Increasing Overhead Charges and Diminishing Profits are Causing Dairy Farmers to Develop Profitable Side Lines. By Lester J. Meredith.



Pigs Are Profitable on a Well-managed Dairy Farm.

tage homes that will induce intelligent men to work on the farm. In order to keep these men busy throughout the year, plans must be made to provide steady and profitable employment as many days during the year as possible. In many cases side lines must be developed in order to provide continuous employment. This is simplified because different crops require labor at different seasons and the dairy herd calls for greatest attention when the crops require the least. A little careful study of the time when each crop or side line makes a demand for labor will enable one to develop new sources of income.

Not long ago I visited the farm of a young man who employs several hired hands during the year. I asked him how he managed to get around the labor problem. He said: "For several years I was up against the labor problem good and hard. I found that I must add to my income or cut down my labor force. Then I decided I would try and increase my crop and milk yields rather than confess my inability to handle farm labor. In ten years I have more than doubled the crop yields on my farm. The land has been cleared of stumps and stones, a number of miles of tile drains have been laid where needed, fences straightened, and the fields so arranged that they may be worked at a minimum expense for labor and team work. I raised the necessary cash and made some careful investments in dairy stock and equipment. The farm began to increase in productivity and the cost of production of crops and milk lessened. The team that formerly traveled five hundred miles in plowing and cultivating to fill the one silo may now fill both of my silos. The extra silo has practically doubled the stock-carrying capacity of my farm."

"The extra mow of hay gained by the increased fertility of the farm furnishes more roughage for the stock to work into manures. The extra bin of

oats furnishes grain to feed the work horses and young stock kept on the farm. The improved cows make more profitable use of the crops raised on the farm. One cannot afford to employ a force of competent men to till an unproductive farm and wait on a lot of lazy cows. During this period I have found it necessary to develop several side lines to help out in the seasonal distribution of labor. I purchased a large sugar bush, grow timothy hay for market and rent fifty acres of land for buckwheat. These new sources of income have proved a big factor in enabling me to pay good wages and put my farming on a money-making basis. We have but few idle days and my men are loyal and contented. The time has passed when one can make good with a strictly dairy proposition. We must develop new sources of income or go out of business."

On many farms, especially in a climate where corn fails to mature sufficiently to produce sound ears, it is almost impossible to grow enough grain to properly feed the dairy herd. On these farms where clover, mixed hay and silage are the main crops, and purchased grain feeds are fed, it is possible to keep a large herd of cows on a small area. Under such conditions there is a vast amount of fertility brought onto the farm through buying rich concentrates. Here the owner faces the problem of getting the full benefit of this purchased soil fertility and providing profitable work for his hands throughout the year.

For example, a dairy farmer near Buffalo, New York, where I visited last summer, has one hundred and forty acres of land on which he keeps a dairy of forty-four cows. He ships his milk to the city, buys four or five carloads of mixed grain feed each year, and employs two hired hands. He finds it easy to grow more clover, mixed hay and silage than he can feed his cattle and work teams, and that during con-

siderable of the time his men and horses are idle. So he plants fifteen acres of potatoes. By buying a little additional machinery he finds that he can add from \$1,500 to \$2,000 to his labor income. He uses a few hundred pounds of phosphorus and potassium on each acre of potato ground. Pretty soon he noticed that his wheat and clover crops made good growth on the potato ground that has been quite liberally fertilized.

The growing of potatoes did not add plant food to the soil. On the contrary it removed more or less of the three essential elements of fertility, but the intense cultivation and the use of the mineral plant foods sort of balanced up the excess of nitrogen and proved just what the wheat and clover crops needed to furnish them with ideal conditions for growth and development. The potato crop is grown, harvested and marketed with the same labor and horse power that formerly stood idle. The work of grading, hauling and marketing is done during the fall and winter when the men and teams are not busy with dairy work. Now if this dairy farmer had not set about the problem of developing his branch line to Spudville he would have idle men and teams on his farm considerable of the time during the year, and a large portion of his milk money would be required to pay for the grain feeds consumed by the cows.

Pigs and Dairying.

On the average dairy farm there is a woeful waste of skim-milk. It requires some careful planning to adjust the number of animals being fed so that one can realize the most benefit from the skim-milk. Perhaps the greatest loss comes from neglecting to use supplemental feeds so that the rations are properly balanced to meet the requirements of the animals being fed. For example, a dairyman sold his milk to a creamery and had several hundred pounds of skim-milk to haul back to his farm every day. For years he fed this to his calves, giving them all they would eat, but very little other feed. He began to study the feeding problem and decided to improve his methods. The next fall he started a bunch of ten heifer calves and fed them liberal amounts of skim-milk and grain. By the first of May they were sufficiently grown and developed to make good use of the grain and hay rations. By this time he had six litters of pigs come and along in June the pigs were put in pasture and fed skim-milk and cornmeal. A little later shelled corn was fed with the skim-milk and green feed. By the first of September they were ready for fattening and were finished on a ration of cornmeal and skim-milk. When they were sold he had another bunch of calves started to take the

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Bean Jobbers and Bean Prices

THE hundreds of letters received from Michigan bean growers who still have beans to sell show an appreciation of our effort to aid them in getting a better price for their beans. This effort was due to an apparent attempt made by Michigan buyers to take over the balance of the crop at the low price of \$5.00 per cwt., which followed closely the distribution of the government order for 350 cars at \$9.25 per cwt. f. o. b. Michigan. This attempt, following so closely the relief from the congested condition of bean elevators and its attendant financial strain, promised such a sad reward for the patriotic efforts of Michigan bean growers as to make it seem vitally essential to call for a show-down in the bean game.

This apparently sudden abandonment of the attempt to stabilize the bean market on a fair merchandising basis, at a time when government relief had just been extended and further relief was hoped for, when export restrictions had just been lifted and commerce with the central empires was about to be resumed, called for immediate and drastic action to save the Michigan bean market from immediate and disastrous collapse. The action was taken in the interest of Michigan bean growers, and, we believe, with beneficial results. At least it has clarified the situation and promises the development of a remedy for those who desire to avail themselves of it.

The Bean Jobbers' Attitude.

From the growers' letters received it would appear that the attitude of some bean jobbers was just what might be expected from the action taken above, and their comments would not look well in print. But not so with the officials of the Michigan Bean Jobbers' Association.

Subsequent to the publication of the article in our issue of March 8 relating to the allocation of the recent government bean order, Mr. F. B. Drees, Secretary of the Michigan Bean Jobbers' Association, requested the opportunity of presenting the position of his organization in the matter and a conference was arranged for that purpose at which Mr. Drees submitted the records of the association in proof of a consistent organized effort on the part of that body to stabilize the bean market at a fair price to growers with only a small merchandising profit to bean buyers and jobbers. Mr. Drees reviewed the history of the relations of the association with government purchasing agencies, beginning with the so-called "gentlemen's agreement" for the stabilizing of prices in a fair manner as previously described and the difficulties subsequently encountered in securing definite orders on government account, due to alleged manipulation of officials of the bean division and their accomplices in the bean trade, which are still under investigation as a result of the evidence submitted by a committee of the Bean Jobbers' Association. Before definite evidence had been secured, the association succeeded in getting two moderate sized orders for government beans at the agreed price and while negotiations were pending looking toward the better financing of the bean elevators of the state to enable them to sustain the market, another good sized government order was placed for Michigan beans at the stipulated price, thus substantiating the agreement. Subsequently a committee of the Bean Jobbers' Association presented evidence which resulted in the release from duty of the two men charged with manipulation of government contracts and instituted a thorough government investigation into all of their official acts with the prospect they will receive

their just deserts as a result of the investigation.

Credit Where Credit is Due.

It is but simple justice to say in this connection that the efforts of the officials of the Bean Jobbers' Association toward the stabilization of the bean market operated greatly to the interest of Michigan bean growers, for which they are entitled to full credit as for the exposure of alleged crookedness of officials in the bean division of the Food Administration and Grain Corporation, of which credit other claimants have sought to rob them by an attempt to appropriate it to themselves. Nor do we believe that the officials of the Bean Jobbers' Association are in any way responsible for the action of members of the organization in making a bad situation worse by offering \$5.00 per cwt. for beans in growers' hands directly after selling nearly half of their holdings on the recent government order. Bulletins previously sent out to members of the association urge the discontinuance of purchasing, rather than purchasing at lower values, notwithstanding persistent efforts of certain jobbers alleged to

elevator having five cars got an order for two, and so on up on a forty per cent basis. This was doubtless as fair an arrangement as could be made between elevators, relieving the congestion in all parts of the state.

Because of the previous period of stagnation and consequent slump in the market it is hard to tell how many \$8.00 beans were in Michigan elevators at the time the government order was placed. During this period many elevators bought cheap beans from growers who felt the need of getting the money out of this crop. It is but fair, however, to say that there were more than enough to fill the order and had it not been for the action of many Michigan buyers in bearing the market immediately following the placing of the government order, our criticisms would not have been warranted. For this action the excuses made are not tenable. These excuses include competition of the California crop and the offering of recent importation of Kotonashi beans from Japan at lower prices.

Future Prospects.

So much for the history of the Mich-

India has disappeared and practically all of the Australian surplus will be required to relieve the famine conditions in India, while the food situation in central Europe is admittedly worse than was anticipated before conditions became generally known. Arrangements have been recently completed whereby thousands of tons of food stuffs per month will be sent to the countries of Central Europe, while all European countries must be heavy purchasers of food stuffs at least until the next harvest is available. A serious shortage of rice in Japan also promises to be a factor in the situation. While California beans are plentiful, many of them are in poor condition due to rain damage and cannot compete on even terms with the Michigan crop, which is of unusually good quality this year. The trend of the hog market since government control was abandoned and the sympathetic movement of coarse grains is another indication of the food situation which should tend to stabilize bean values.

Future Price Adjustment.

While it would indeed be a rash man who would attempt to prophesy what the next few months will bring forth yet it is a reasonably safe conclusion that beans are worth considerably more than \$5.00 per cwt. under present conditions. As a possible solution of this situation we proposed to Mr. Drees that members of his association consider a plan for a future price adjustment on beans purchased at the present quotations if sold to the trade at higher values. As the simplest means to this desirable end of reestablishing confidence between bean growers and bean buyers, it was suggested that buyers take in growers' beans, advancing them a reasonable present market value and holding them for future sale at the grower's option. This would enable growers to haul beans to market before the rush of spring work. It would insure to the growers an opportunity of participating in any recovery of market values which may occur. It would insure continuous employment of the bean pickers until the crop is cleaned up. More important still it would tend to stop the inclination among buyers to unload on the present demoralized market and depend on averaging up on their losses by replacing their present holdings with cheaper beans.

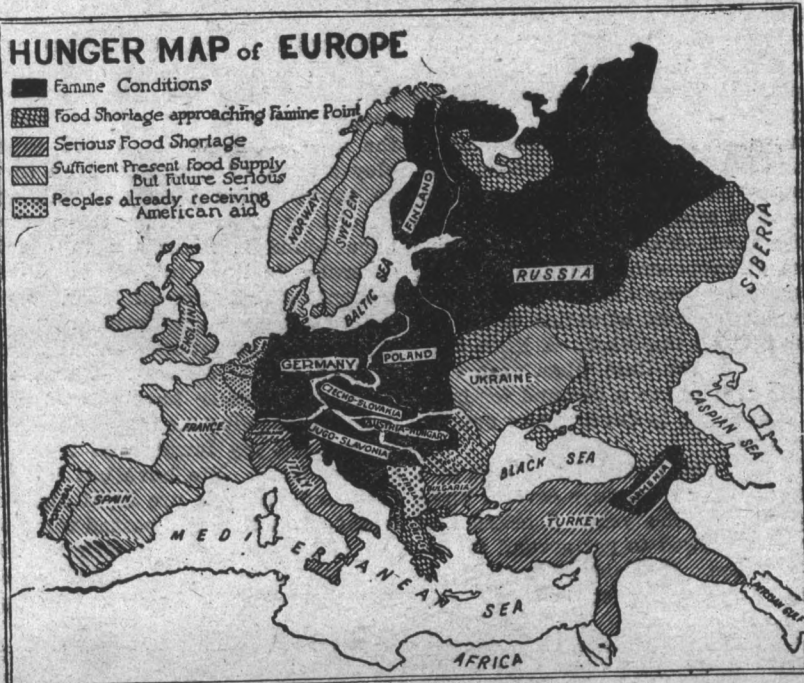
A recent letter from Mr. Drees states that he has submitted the above plan to several jobbers and that it has met with their unanimous approval. It may aid in the solution of a difficult problem for many patriotic Michigan bean growers.

Growers who desire to avail themselves of this plan should take the matter up with a responsible buyer in their community, and in case the arrangement is made a written contract or memorandum of the agreement should be signed in duplicate in order to avoid future misunderstandings. This should establish the dealer's margin and provide for a fair determination of market values.

A Square Deal for Growers.

What we are seeking is simply a square deal for Michigan bean growers. Marking the price to the growers down to \$5.00 per cwt., while loading out present holdings at \$9.25 could not be so construed. We believe that even the jobbers who took this step now recognize it to have been a mistake.

As for the vacuous vaporings of the "only paper" that echoed the Shakespearean sentiment that "Things are rotten in Denmark," while the stabilized price for beans was maintained, its declaration that "All is well" when the price to growers was marked down to \$5.00 per cwt. is its echoing answer.



MORE than three hundred million people in Europe have only a small proportion of the food necessary to last them until the next harvest. The removal of the sea blockades will permit the shipping of American food products to several countries heretofore cut off from outside relief. Nevertheless, these countries must be systematically and immediately helped. This is sure to create a heavy demand for meat, grains and canned products. The fact that beans are an important part of the diet of the people in these countries indicates that they should begin moving rapidly at higher prices. Even with small imagination it will be instantly recognized that those countries devastated, undernourished, and stripped bare of food and agricultural equipment by enemy occupation are in such a condition as to require tremendous supplies of American foodstuffs.

have been in league with discredited officials of the bean section to bear the market on Michigan beans.

Distribution of the Government Order. The method used in distributing the recent government order for beans was on the basis of holdings in all elevators having a membership in the Bean Jobbers' Association. The large jobbers who underwrote the order were allowed to put in forty per cent of their holdings and were required to purchase from smaller elevators the balance of the allotment given them in the distribution, this action being taken to simplify the technical details of settlement. Under this arrangement every member elevator having choice hand-picked beans on hand, received a share of the order. The smaller elevators having but one car were fortunate in selling their entire holdings. The elevator having two or three cars likewise got an order for one car. An

igan bean market. Growers still having beans to sell are more interested in future prospects. An accurate estimate of Michigan beans still in growers' hands is difficult to obtain. The consensus of opinion among buyers is that it does not exceed fifteen per cent of the crop. Recent statistics show the total of beans now in Michigan elevators to be less than 600 cars. The total crop as shown by threshers' returns was 3,288,314 bushels. Notwithstanding the fact that it is still more than six months before another crop of beans will be available for distribution, confidence in the future of the market seems to have been shattered to an unreasonable degree, when the general world food situation is considered. Mr. Hoover's recent statement with regard to the probable trend of the wheat market is interesting in this connection. According to his statement the fabled surplus of wheat in



Good Hatches of Vigorous Chicks

THE mortality among the chicks during the growing period is increased or decreased according to the vitality of the chick at birth, environmental conditions being similar. In other words, the well-hatched chick is half-raised. A weak, puny chick is at a disadvantage, and we must expect a higher death rate. Nor are we deceived in our expectations. A flock of poorly hatched, weak chicks are a discouraging proposition, and we would not prescribe the raising of such, by people suffering from "nerves," nor are they conducive to our sweetest dispositions.

On the other hand, there is no other branch of poultry culture that will stimulate our interest in this industry more than a flock of thrifty, vigorous chicks. These fluffy, downy little creatures are often responsible for the outbreak of the disease commonly known as "Henitis," and once inoculated with this germ, the results are fatal to both man and woman alike.

Husky chicks are not an accident, they are not the result of weak parent stock. The incubator is not always at fault when weak chicks result.

The breeding pen must consist of both males and females, showing an abundance of constitutional vigor and in a good physical condition if we look for "pep" in the offspring. The person who fails to take advantage of this simple truth, is overlooking a factor that spells success or failure.

Fertility and hatchability have separate and distinct meanings. By hatchability is meant the power of the fertilized germ to develop into a strong chick capable of complete exclusion from shell, whereas fertility is a narrower term and simply refers to the union of the male and female germ cells.

Pedigree breeding work leads us to believe that the ability of the egg to hatch is an hereditary quality, and transmitted chiefly through the female line. Such being the case, we would naturally pay special attention to the physical welfare of the females in our breeding pens.

Breeding records of single pen matings, where all the females have identical conditions, and are mated to the same male bird, produce a variety of results. Some hens will run low in fertility and hatchability, others will run high in fertility, and hatch like "popcorn." Again we find hens which produce fertile eggs, but on account of physical weakness, due to various causes, show a high percentage of dead germ eggs in the course of incubation. In some cases it is almost impossible to secure good thrifty chicks, especially when breeding from immature pullets, laying undersized eggs, or from hens that have been forced for heavy egg production. This physical drain on the hen's body is more apparent when checking over the hatchability records.

A number of factors which control both fertility and hatchability are at the command of the practical poultryman which, if properly exercised, will "deliver the goods."

Exercise.

One reason why layer hatches are secured during the spring months when the hens are at liberty to range and forage to their heart's content, is undoubtedly due to the greater amount of exercise obtained, as compared with the lower hatches during the winter

Vigorous Chicks are the Result of Well-Directed Effort from the Mating of the Breeding Pens to the Hatching of the Eggs.—E. C. Foreman.

months, when the birds are closely confined. If the hens are closely confined, and fed large quantities of corn or other whole grains, upon the bare ground, lack of exertion or exercise, especially among our general purpose and heavier breeds tends towards over-fatness, which results in a weakened system, hence weak germs. This problem of insufficient exercise during confinement may be almost entirely eradicated by providing plenty of straw or some other litter which will not pack too closely, and at the same time allowing four square feet floor space per bird.

Green Foods.

In selecting foods for our breeding stock, we must be a little cautious, because our aim is to develop a sound constitution and produce a good physical development. Generally speaking,



green foods have a very desirable tonic effect upon the hens which indirectly gives strength to the germ and vitality to the generating embryo. Some green foods give better results than others for example, cabbage, sugar beets and sprouted grains are among the best. Fresh, clean silage also makes a good succulent food. On the other hand, mangel wurzels, according to data emanating from the Ontario Agricultural College, is undesirable from the standpoint of hatchability, although as an egg producer it ranks with our best sources of succulent feeds.

Animal Foods.

Professor Graham, of the Ontario Station, has developed some very valuable data relative to the effects of different sources of animal protein on the eggs hatchability. His experiments cover a period of years, the conclusions drawn are as follows:

Most of our animal foods, and more especially beef scraps are detrimental to high hatches in Rocks, Reds, Wyandottes and most of our heavier breeds, but with Leghorns and the lighter weight breeds this evil influence is lacking.

Skim-milk or buttermilk give very satisfactory results with all breeds, and either are superior over any other source of animal protein. They tend to keep the digestive system in a sharp clean condition.

Preparatory to the actual incubation operations we are usually confronted with such questions as: "What number of females should we use with each male bird?" "How long after introducing the male will it take before we can safely set the eggs?" "How long will the eggs keep and produce good hatches?" and many other similar questions.

The age and vitality of the male bird must be considered, in rating the number of females to be bred to him. No set rules can be followed, but ordinarily we would suggest one male to fifteen females in the lighter breeds, such as Leghorns, whereas a rate of one male to twelve females would secure the highest fertility in our heavier weight breeds, such as Rocks, Reds, Wyandottes, etc. We can safely widen this ratio in large flocks on free

range, but for open matings in confinement the above proportions are nearly correct.

Fertility usually is present three days after the introduction of the male bird, although better results are obtained by waiting a week or longer before saving eggs for hatching because we do not get the highest fertility until about the tenth day. After removing the male bird from the flock the eggs remain fertile from three to twenty days. In changing male birds two weeks of grace should be allowed before saving the eggs for hatching, in order to be positive that the influence of the former male is entirely lost.

What is an average fertility? An average fertility is eighty per cent. Twelve eggs in every setting should be fertile.

In a test made at Mountain Grove, Missouri, to determine fertility by months, the following results were obtained:

January, 62 per cent; February, 75 per cent; March, 82 per cent; April, 85 per cent; May, 83 per cent; June, 75 per cent.

The same station conducted experiments comparing the length of time or age, eggs for hatching purposes may be kept without any relative decrease in fertility. The tenth day seemed to be the dividing line, up to this time complete fertility was maintained

whereas from the tenth to the thirtieth day a rapid reduction was evident, the fertility being completely lost at the end of thirty days.

In retaining eggs for hatching purposes, a little attention should be exercised, such as turning the eggs regularly, especially when holding for several days. During cold weather frequent collections are necessary to preserve a healthy germ, also the receptacle holding the eggs should be placed in a dry, sweet atmosphere, at a temperature as nearly as possible between fifty and sixty degrees F.

A little care in selecting eggs according to size, shape, color and quality of shell should be displayed. Long eggs don't necessarily hatch cockerels, nor round eggs pullets, because Biddy involuntarily lays the same shape, size and colored egg every time, so it is a false belief to think that we can determine the sex of the chick by selection of eggs according to shape.

We would naturally select eggs normal in size, shape and quality of shell because only from selection could we hope to standardize our eggs and produce uniformity, on the other hand, we would discard eggs with defective shells, soft, chalky, rough, uneven texture, or dirty and washed eggs. Eggs of these latter types usually indicate uneven evaporation and poor hatches of abnormal chicks.

Incubation is usually classified into natural and artificial. The size of the flock maintained, and season for hatching generally govern which method shall be practiced. For the average farmer and backlot poultry raiser, the good old mother hen usually performs this duty quite satisfactorily. The main disadvantage to hen hatching lies in the fact that the hatching season is spread over a longer period, resulting in an uneven flock of pullets in the fall, also unless we can induce the hens to lay during the winter we cannot expect them to develop the broody instinct early enough in the spring to get early chicks.

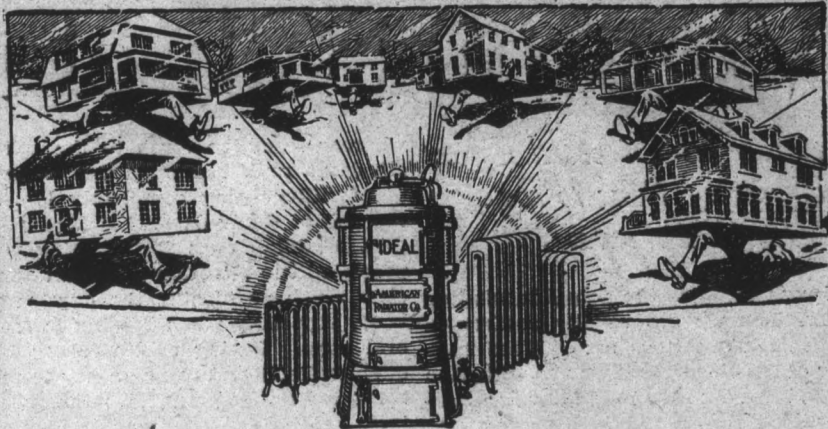
The best types of hens for incubation purposes belong to the American and English classes—R. I. Reds, Orpingtons, Wyandottes and Rocks. The Leghorns and lighter breeds are too nervous and if allowed to mother the chicks after they are hatched, are not capable to educate their brood properly. The nervous temperament of the hen is acquired by the chicks, making them wild and difficult to handle.

In building a nest to be used for incubation purposes, the primary requisites are that it be roomy (about fifteen inches square) and sanitary. By placing a sod in the bottom of the nest, making sure that the corners are filled, so the eggs won't roll out and become chilled, then adding three or four inches of straw, leaving the nest saucer-shaped. Don't cram the hen in a little box, broken eggs usually result. Treat the hen for lice before setting, with sodium fluorid or blue ointment. In using sodium fluorid dust each hen thoroughly; if blue ointment is used, a small piece about the size of a pea, rubbed into the skin below the vent, will exterminate them.

The louse problem is done away with in artificial incubation, also more uniformity can be secured because the chicks are hatched together and all get an even start in life. With a variety of ages, the smaller ones are at a disadvantage.



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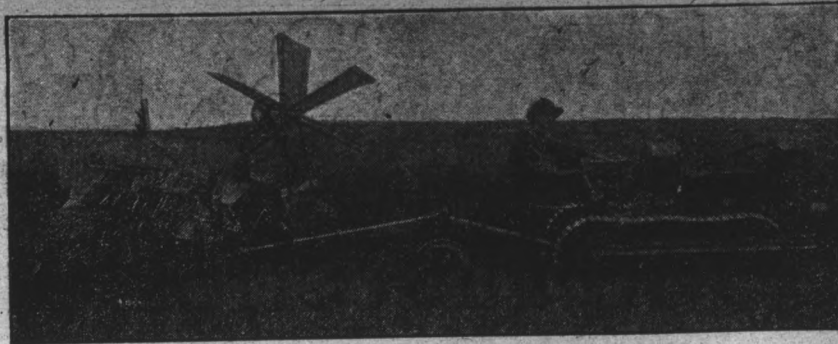


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Draining Farm Lands

By John Bloomsfield
Drainage Expert

THE most fertile and best producing lands are the low-lying areas, swamps and marshes, if properly drained. These low lands are generally wholly surrounded or traversed by ridges forming basins where water will remain continuously or until evaporated, unless artificial means are resorted to to remove the same.

For the removal of surface water open ditches are usually constructed with an outlet into some natural water-course; until recently, and in many localities this practice still prevails, these ditches were made very shallow, averaging in depth about three feet; no calculation was made beyond surface drainage, and in many places the water would have to run up hill to enter them. They were intended for an emergency relief to save the stock, both from drowning and starvation, since the greater part of these lands were only fit for pasture, even after the ditches were made.

Before we leave the surface drainage let me suggest that open ditches be constructed wherever possible, of sufficient depth to provide an outlet for underdrains at least four feet deep and also for an extra depth below the outlet of the tile to allow for some filling in without choking the outfall of the tile; it is very often necessary and invariably the cheapest in the long run to construct large sewers or conduits for main line drains, thus obliterating the loss of ground surface, maintenance of bridges, continuous cleaning, out, etc.

Underdrainage.

There are lands that need no drainage, such as ranges of gravel, sand and light loam, where the water is allowed to percolate freely down to a depth below evaporation, provided the sub-strata is porous enough to allow the water to escape, but it is well to remember and investigate if such sub-soil is free from water held to a damaging level by intermediate clay ridges or other obstructions. Underdrainage of land that does not need it, or land that will not give returns on the investment should not be considered, but such cases are indeed very few.

How are we to determine the necessity for drainage of farm lands? Let us observe some of the most prominent indications:

1. If low ground, swamp or marsh is covered with water, all or part of the time, an explanation as to the need of drainage should not be necessary.

2. If a plowed field in part or in whole appear of different shade, with dark streaks indicating dampness and invariably a cold, sour underlying sub-soil permeated with water, which is forced to the surface by elementary action, and does not bleach in a short time to the exposure of the sun, that land needs drainage.

3. If water remains standing in the dead furrows in the spring after the frost is out of the ground, or collect in the furrows while the land is being plowed it indicates need of drainage.

4. If an excavation, say three feet deep, collects water shortly after a rain, it is evidence that the ground is

water-soaked up to that level, and so needs drainage.

5. Clay soil improperly drained will in continuous drought crack open, because clay-soaked in water and dried will shrink to the amount of space occupied by the water. The surface water did not have free access for any escape in the sub-soil, but remained on the surface, forming a paste which caused the cracks to open when dry. The need of drainage is evident.

6. The wilting or curling of leaves of corn, beets and potatoes, the severe effect of drought, except on poor sand or gravel land, may be due to improper drainage; mouldy appearance of the surface, a certain toughness of grass, a liberal number of crabholes, all indicate that water is too close to the surface and that the roots of the plants are suffering from the effect of cold feet.

I am confining myself in this article to the treatment by drainage of lands most suitable for farming, viz:

Black loam or mucky top with clay subsoil or land consisting entirely of clay.

Water should disappear on the surface of well-drained land with the clearing up after a spring rain and the frost leaves the ground and be in shape to retain and absorb the fertilizing chemicals contained in the warm rains successively thereafter.

Water can not remain in the upper strata of the ground until it becomes stagnant, without injury to plant life, and why?

1. It excludes pure atmospheric air.
2. It reduces heat.
3. It produces a chemically semi-poison.

It is well understood and accepted, that the germination of the seed, or the transformation from a seed to a plant takes place under a certain chemical process, the main factors being air, heat and moisture; the composite parts or fertility of the soil becomes a factor only after the plants develop roots as feeders for further growth and progress.

If it is conceded that atmospheric air is requisite to the germination of seed and the growth of plants, we should have some knowledge as to how the air can best find its way into the soil and subsequently to plant roots.

The mechanical structure of the soil consists of individual particles or bodies of every kind of shapes and size, from boulders, pebbles, down to the finest powder, and thus represent in its mass a certain amount of voids, which in wet, undrained soil remains filled with water to the exclusion of the air and if this condition remain for a long period of time it will cause death to the plants. If the soil is properly drained the water will be removed from the larger voids, forming into arteries of all dimensions, the finer particles forming the finest arteries and retaining the moisture necessary for the plants, and this action will begin to develop in an underdrained field as soon as the tile are properly placed, and continue to improve and broaden for an indefinite time, the air refilling

(Continued to page 462).



Estimating 1919 Potato Crop

SPECIAL reports relative to the commercial portion of the potato crop, whereby growers and local shippers will be furnished detailed information during the growing season on a scale never before attempted, are being contemplated by the Bureau of Crop Estimates of the United States Department of Agriculture. Data relative to the total or agricultural crop will be collected and published as heretofore, but it is recognized that it is the commercial crop that establishes the market price, and it is that portion of the crop that will receive attention in the additional reports to be inaugurated during the coming season.

A conference was held recently in Washington between officials of the Bureau and field agents from the principal producing states of the north and east, at which there were also present Professor William Stuart, potato specialist of the Bureau of Plant Industry, R. H. Ellsworth, of the Bureau of Markets, and W. H. Taylor, of the Eastern Shore of Virginia Produce Exchange. It was agreed that the Bureau of Crop Estimates should undertake to collect and publish this special information relative to the commercial crop in addition to its regular estimates of the acreage, condition, yield and production of the agricultural crop.

Stress was laid upon the need of growers for more complete information not only regarding the crop in their own state but in competing states, and that this information would be extremely valuable just prior to and during the harvesting season. The field agents explained the existing conditions in their respective states and pointed out the particular needs for their territory, from which a definite program was worked out.

The field agent is to make a survey of the areas that produce potatoes on a commercial scale, utilizing data that can be furnished by the Bureau of Markets, the county agents, and all other available sources. Lists of the growers within these areas will be compiled. These growers will cooperate by furnishing local information, in return for which they will receive the published reports containing the results of the inquiries, not only for their own state but for the competing regions in other states.

On September 1 and October 1 an estimate will be made of the portion of the crop that will be shipped out of the county where grown. Because there is often a rapid change in the outlook for a crop during September and October, due to moisture and frost conditions, additional reports are to be made on the fifteenth of each of those months, outlining the conditions and prospects in each of the principal potato states. These reports will be mailed to newspapers, to the Bureau's reporters and to county agents. On November 1, an effort will be made to estimate the portion of the crop in the commercial counties that will come under each of the standard grades in use.

The December report will contain a revised estimate of commercial production and an estimate of the stocks then in the hands of growers and dealers. The latter information will be collected monthly throughout the marketing season, and will thus provide a better index of the movement of the crop to market than has ever been obtained

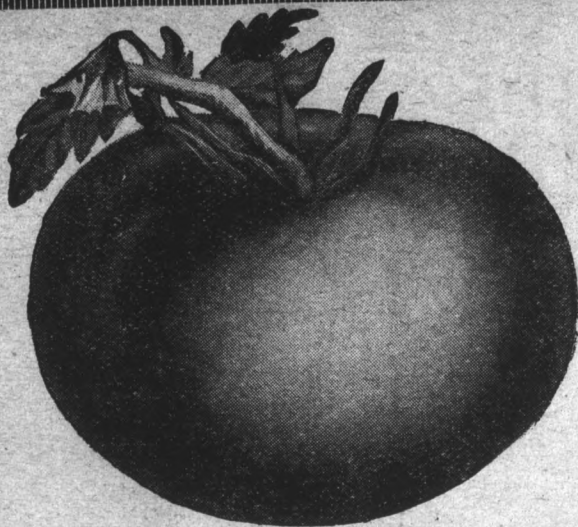
before. The matter of natural shrinkage in storage and the losses due to rot and freezing will also be investigated.

An annual potato report in bulletin form will summarize all of the data and information collected by the Bureau during the entire year. This will furnish to the individual all of the available data, and enable him to study and analyze the situation for himself, rather than to be dependent wholly upon market quotations and speculator's reports for the information that is to govern his actions. Because of the removal of tariff restrictions between the United States and Canada, which permits the Canadian crop to become somewhat of a competing factor, estimates of Canadian production, stocks in storage, and imports will be published as data becomes available.

Too often the farmer, in marketing his crop, forms his opinion, or at least permits it to be biased by local conditions. If the crop is large in his part of the state he assumes that the same condition holds elsewhere, and he tries to be the first one to deliver at his local station. If the crop is light in his district he is more apt to store hoping for a higher price. As an abnormally large or small yield is likely to be at considerable variance with the general conditions for the potato area as a whole, he may have drawn a wrong conclusion in both cases. Many potato growers, as well as other crop specialists, owe their success to advantageous marketing through a thorough study and analysis of crop production data and attendant marketing factors. One expert potato grower emphasizes this fact by stating that he has followed the crop reports and gauged his sales thereby for more than a dozen years, and has never failed during that time to sell his crop at the most advantageous season. The development of farmers' cooperative shipping associations in the potato districts is bringing home to the membership of these associations the value of data relative to production, movement to market, and areas of surplus and deficient production. They naturally wish to avail themselves of the nearest consuming markets, avoid market congestions and consequent slumps in price. It is recognized that a stable market with little variation in price throughout the season is the most advantageous to both the producer and consumer.

The Bureau of Crop Estimates, in view of the urgent need and demand for this additional information regarding the potato crop, will undertake the task as it has the necessary organization and machinery. As potato-growing is one of Michigan's leading farm industries, we will follow with interest and probably profit extensively by the efforts that the statistical branch of the Department of Agriculture is putting forth in our behalf.

Mr. Hoover has received from British officials definite information regarding the crop failure in India. All the wheat that Australia can spare will be shipped to India to alleviate the famine. Orientals are learning to use wheat in place of rice, and a slight addition to the amount consumed by each Hindu and Chinese will add a billion bushels to the world's requirements.



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The Campbell Soup Company of Camden, New Jersey, put up an excellent product, and make every effort to obtain only the highest class vegetables. Here is the report of one farmer who grows tomatoes for them:

"I used Pyrox on potatoes last season with a great deal of satisfaction and profit. Pyrox saves cost and time of straining for there is no clogging of nozzles, as with Bordeaux. I am growing tomatoes for the Campbell Soup Company, Camden, N. J., and Hall of Boston, who is superintendent of farms for them, speaks very favorably of Pyrox."—CHARLES H. TELL, Laurel Springs, N. J.

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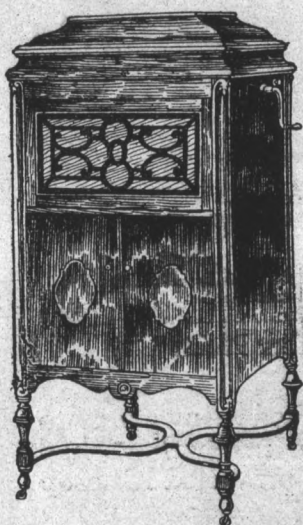
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Latest Agricultural News

THE EARLY POTATO CROP.

ACCORDING to replies to inquiries sent out recently by the Bureau of Crop Estimates, the early potato acreage this season will be greatly reduced from last year, the estimated acreage in 1919 being 132,044 acres, compared with 223,845 acres last spring. The states represented in the report include Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Texas, Missouri, Kansas, Oklahoma and Arkansas. These states grow early potatoes principally, the harvest of the most northern states mentioned beginning early in July.

In detail the reports received show the following condition:

States.	1918 Acreage.	Indicated decrease %	Indicated acreage 1919
Md.	7,200	20	5,760
Va.	69,150	48	35,958
N. C.	20,500	40	12,300
S. C.	10,950	50	5,475
Ga.	3,500	40	2,100
Fla.	32,750	20	26,200
Ala.	9,250	48	4,810
La.	39,000	50	19,500
Texas ...	13,700	50	6,850
Mo.	1,290	20	1,032
Kan.	5,720	25	4,290
Okla.	7,130	30	4,991
Ark.	3,705	25	2,778
	223,845		132,044

"Among the more prominent reasons given to account for the shortage in acreage this year as compared with last year are, high cost of fertilizer, high cost and scarcity of labor, high cost of seed, high cost of packages, high freight rates and fear of a car shortage, low price of product and the consequent losses in 1918, excessive rainfall, preventing the preparation of land for planting," said the report giving the above figures.

MILK PRODUCERS MEET.

THE Richmond-Memphis Milk Producers' Association held a meeting Wednesday afternoon, March 12, at the farm of Frank Markel near Richmond. An inspection of the barns and dairy herd constituted the first portion of the program and Mr. Markel received many compliments regarding his well kept stables and splendid dairy herd. The two Registered Holstein cows recently purchased in Saginaw county proved to be of special interest and were pronounced very good individuals by the many competent judges present.

The question of federating the various locals in Macomb and St. Clair counties shipping milk to Detroit was discussed at considerable length and a motion to form such an organization was unanimously carried. A meeting for this purpose will be called later in the month at Mt. Clemens with a view to sending authorized and instructed representatives before the Detroit Milk Commission when the price is determined for April. The members, too, expressed themselves as favoring the organization of a creamery or cheese factory in cooperation with the other locals of the Detroit area to take care of their surplus milk during flush periods. Under the present arrangement it is very difficult for the farmer to know whether or not a surplus really exists, and it was believed that the disposition of the surplus milk through other channels would prevent any unfair advantage being taken by the large distributors with whom the association deals. It was the opinion of many that if this were done there would be little or no surplus milk.

C. L. Brody, Agricultural Agent for St. Clair county, discussed "Feeds and Methods of Caring for the Dairy Cow," and emphasized the importance of better business methods and more economical and efficient production on the dairy farms of the locality. H. J. Vogt,

Chester Shirkey, Charles Henderson and others expressed themselves as favoring the taking of some definite action in regard to buying feed and other supplies to better advantage, and as a result of the discussion twenty-two of the leading farmers and milk producers of Riley, Columbus, Wales and Richmond townships called a meeting at the village hall in Memphis, March 17, for the purpose of organizing a farmers' buying and selling association. Those present from Casco township and the southern part of Columbus also arranged for a meeting for the same purpose at Adair, March 18.

PACKERS AND STOCKMEN PLAN COOPERATION.

CLOSER cooperation between the live stock and packing industries is promised as a result of a conference held in Chicago March 10-11, by representatives of live stock associations of several states and the heads of about fifteen of the leading packing establishments in the country.

Besides providing for closer cooperation the conference discussed ways and means for the settlement of differences in order that the finished product can be furnished the consumer at a minimum price compatible with cost of production. The conference adopted a plan which calls for a conference committee of the live stock industry, composed of twenty-three representatives of the producers, the packers and the commission men, with headquarters in Chicago. There also are to be located committees at the various live stock markets.

The plan as developed is a tentative one, but the live stock men present pledged the support of their associations and agreed to put the plan before the other live stock associations and urge them to join in order that the plan may be put into effect as soon as possible.

What to do with the restrictions governing daily fluctuations in provision futures was discussed by the Board of Trade directors. Most of the trade want them removed. A special meeting of the directors was held Monday and the situation left in the hands of market report and provision committee, who reported back to the directors and they, desiring to clean up a few important points referred it to a committee to settle. A decision is expected within a few days.

F. S. Snyder, of the meat division of the Food Administration, has been in communication with the Chicago Board of Trade officials regarding the restrictions, and it is said that he favors removing them and has inquired as to the advisability should the directors consider the situation right.

More than thirty independent packers have organized an export association here, and will establish headquarters in New York. A representative will be sent to Europe at once to sell the products of these concerns. The organization's name has not been made public.

CHEAPER FARM MACHINERY.

THROUGH friendly cooperation with the government, price readjustments are under way and are expected to be effected within the next month on two or more basic materials that it is hoped will stabilize industry and get the expected prosperity under way quicker than had been anticipated.

The action of the steel interests of the country in indorsing the movement to get the "big fellows" in industry in and stabilize, through the reconstruction period, prices of certain raw and basic materials, has given tremendous impetus to the proceedings of the industrial board of the Department of

Commerce. It is disclosed that some of the leading industries of the country have agreed to the plan and that more are coming in.

With the United States Steel Corporation, still to a large extent the barometer of general business conditions, agreeing to take an active hand in the price stabilization arrangement, the members of the industrial board expressed themselves as confident that the period of uncertainty and business timidity incident to the chance from war to peace conditions will be cut in half. When, through the activities of Secretary Redfield, price readjustment was first suggested, and that the board handle the difficult matter of bringing about trade agreements, it was not believed that beneficial results could be obtained before the middle of the summer or early fall. Now it is regarded as altogether likely there will be country-wide business stimulation on a peace basis before the end of spring.

The so-called harvester trust has informed the government readjustment agency it is ready to cut its prices in some instances as much as twenty-five per cent. The harvester officials frankly state, however, that in cutting the price of their product twenty-five per cent there is danger that some of the smaller independent producers may find themselves in trouble and possibly have to go out of business. Before slashing the price the officials of the harvester combine want some sort of assurance that, because of the price cut, it will not be made the object of an investigation by the federal trade commission. It is understood this assurance will be given with the understanding that it is not to be taken as fixing a permanent policy.

WILL SELL SURPLUS WHEAT HOLDINGS.

THE United States Food Administration Grain Corporation makes the announcement that since March 15 it began selling from its surplus wheat holdings in an effort to prevent an increase in flour prices.

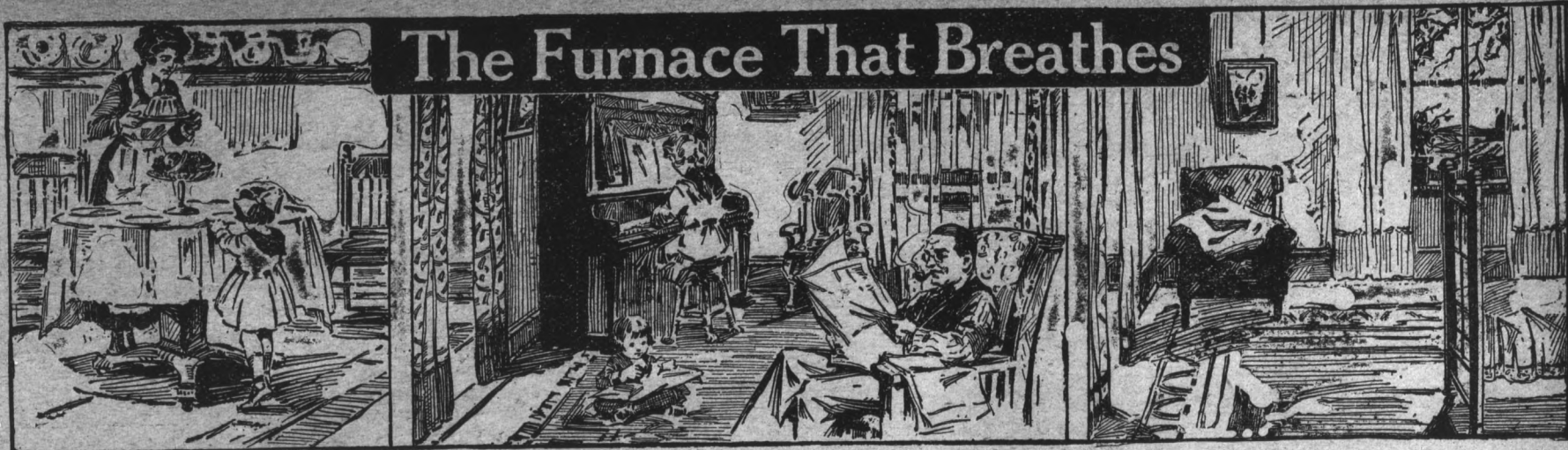
Julius H. Barnes, president of the corporation, said the Department of Agriculture report, issued today, indicated that "contrary to public opinion, the crop of 1918 will provide no more than sufficient to meet our home needs and the foreign requirements falling upon us," and added that already mills were experiencing such difficulty in obtaining wheat for milling that they were offering as high as ten to fifteen cents a bushel above the government's guaranteed price to the farmers.

"The grain corporation," he said, "by using part of its accumulated stock for resale in the United States, hopes to relieve the public from any material advance in the price of flour."

During 1917-1918, Mr. Barnes said the price of flour was stabilized by agreement of millers with the food administration, but this agreement no longer is in force, and only government sale of an adequate supply of wheat to the millers would prevent an increase in flour prices, he said. This, he added, was in direct contradiction of "the general belief that only the purchase by the government of wheat at the guaranteed price maintained the price level for farmers."

The government wheat, Mr. Barnes said, will be offered for sale on and after March 15 at such milling centers as Duluth, Kansas City, Chicago and St. Louis on the basis of cost plus accumulated charges.

Farm holdings on March 1, announced recently by the Department of Agriculture, shows: Corn, 884,476,000 bushels; wheat, 129,258,000 bushels; oats, 588,421,000 bushels, and barley, 81,899,000 bushels.



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IN a badly heated house half of your human energy is spent fighting cold. When you work hard all day you want to come into the house to relax, to rest, to get strength to work again.

The wife and the children will be healthier, better natured, happier in the house that is full of warm, ever-changing, always pure and clean air.

Have you actually investigated the cost of putting in a perfect heating system? Do you know that by our new system a big house can be heated upstairs and down at less than the cost of heating two or three rooms by stoves?

This is not an extravagant claim. *We stand back of what we say with an iron-bound guarantee.* We will show you letters from people to whom we have made good—all you want to see of them.

Estate

Single-Register Warm-Air Heating System

"The Furnace That Breathes"

Here is the real answer to your heating difficulties and the cost is surprisingly low. The whole house is perfectly heated, but there is no cutting through walls, no muss. After the job is done you begin at once to save coal and work, and you are through for good with dust and dirt.

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Bear in mind, its cost is no more than just the ordinary pipeless furnace and it will give your home comfort you never dreamed of at almost and unbelievable low cost.

Let's get together over that heating problem of yours. Why not write us a letter and send a sketch showing the arrangement of your

house? That won't cost you anything and it won't commit you to anything. **We are glad to send you free blue print suggesting proper installation of our system.** That's our way of getting our full story to you. That's what we want to do. That's why we advertise in this paper.

Send us your name and address with enough sketch as suggested here, or fill out and mail the coupon at the corner of this page. Address:

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Established 1845
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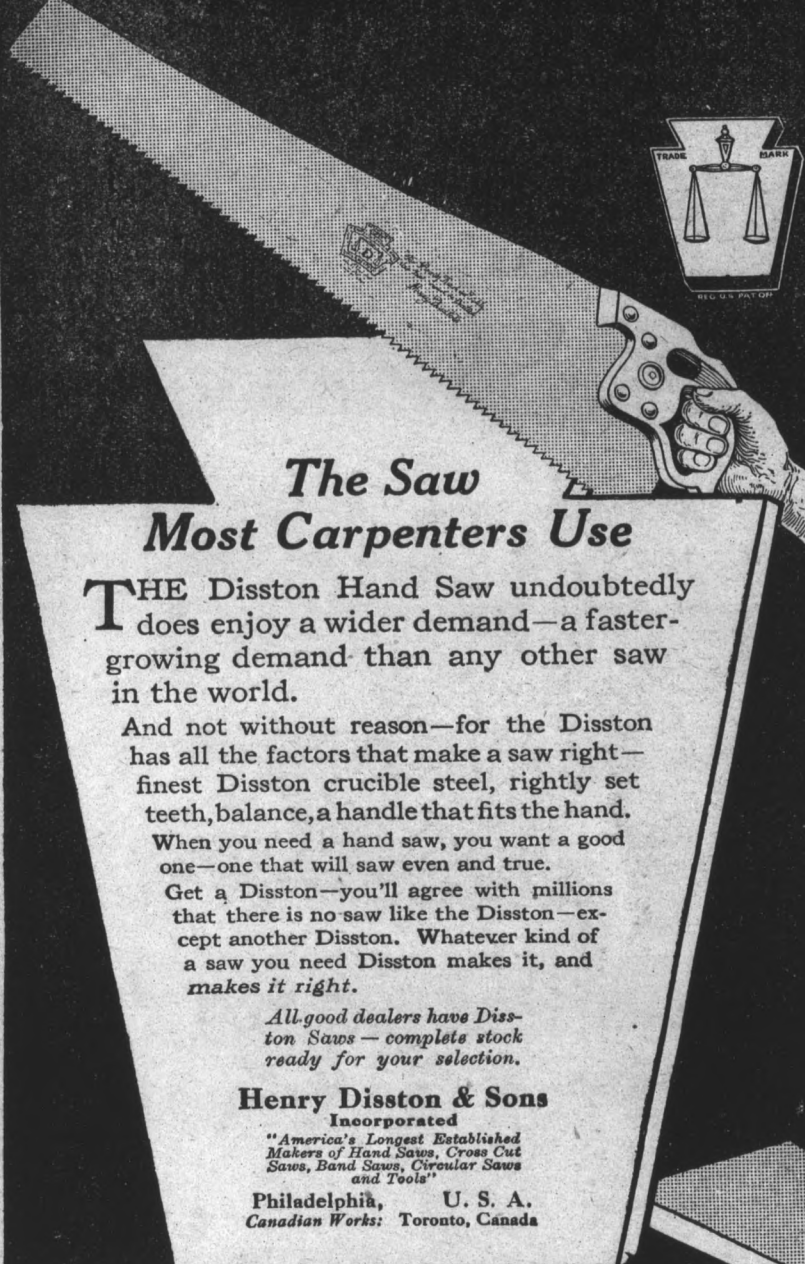
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THE Disston Hand Saw undoubtedly does enjoy a wider demand—a faster-growing demand than any other saw in the world.

And not without reason—for the Disston has all the factors that make a saw right—finest Disston crucible steel, rightly set teeth, balance, a handle that fits the hand.

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All good dealers have Disston Saws—complete stock ready for your selection.

Henry Disston & Sons
Incorporated
"America's Longest Established
Makers of Hand Saws, Cross Cut
Saws, Band Saws, Circular Saws
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Below is only a partial list of Factory Rebuilt Engines.

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WE ARE BUILDING A PORT HURON SEPARATOR SUITABLE FOR USE WITH ANY OF THE ABOVE SIZE ENGINES

An ideal threshing outfit at a reasonable price.

Write us for information about small separators, and complete list of these Special Priced Engines.

PORT HURON ENGINE & THRESHER CO.
Port Huron, Michigan

SHEEP

To The Kids of Mich. I have 75 beautiful registered Hampshire and Shropshire ewes that will have lambs this spring. I wish to sell them to you and buy back the ram lambs next fall at a mighty good price. Start now in a small way. Liberty Bonds taken. Write at once for particulars.
KOPF KON FARM, S. L. Wing, Owner.
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SHROPSHIRE SHEEP

We have about 50 ewes in lamb for sale, of best breeding. Registered.
HARRY E. SAIER, Seedsman.
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80 Breeding Ewes 2 years old in good condition will lamb in April must be sold this month.
ALMOND B. CHAPMAN, So. Rockwood, Mich.

For Sale Bred Reg. Shrop. Ewes at a reasonable price also ewe lambs.
H. F. MOUSER, R. 6, Ithaca, Mich.

Shropshire Sheep Nothing to offer before June 1-1919.
ARMSTRONG BROS. R 3 Fowlerville, Mich.

WHO AM I?



**I am the fellow that Milks With
"MEHRING'S MILKER"**

It makes me smile when I see poor guys pulling away by hand. Buy a Mehring milker and you can smile too. It was the first practical milker and still has the lead in speed, efficiency and cheapness of operation and repair. Send for a catalogue and be convinced. It will milk one or two cows at once. Price \$80 cash or \$85 on trial. Also engine power-milkers. W. M. MEHRING, Keymar, Maryland.

Our Service Department

LEGAL QUERIES ANSWERED.

BY JOHN R. ROOD.

Renting Farms on Shares.

Can you give the laws in regard to renting farms on shares, in feeding the teams on one's own half of the hay or out of the undivided hay, and about the poultry and eggs? Give the law in all things, raising colts, etc. Also, can I have who I wish to keep house for me? The parties want my mother to move out. She has kept house for me. Then I would have to hire someone else. Can they draw up papers to make her move out if I stay? I have worked the place one year.

F. H. P.

Whether the tenant can feed teams and chickens out of the undivided crops depends on the words of the contract, which are not given. Chickens also furnish another lesson. They are a constant cause of irritation in share farming, and the fewer the better, if the parties would get along smoothly.

As to the mother moving out, it would depend on whether it is a lease or a contract of hiring to be paid in a share of the crops. Surely a lessee can entertain such guests and hire such help as are not forbidden by the lease; provided that one leasing a farm to be worked on shares cannot have someone else to do the work he agreed to do himself. The owner might be very willing to have him do the work on shares and not be willing to take someone he might name to do the same thing. But if the contract is one of hiring to be paid for in crops, then the employer can, as in any other contract of employment, discharge the employe at any time, for cause or without cause, provided that he will be liable to a suit for damages if the discharge during the employment for a set time was without justifiable cause. If the time of the lease has expired, of course no papers are needed to end the rights of the tenant. If he insists on holding after his lease is up he can be ousted by summary proceedings.

Protection Against Waste.

I am asking your best advice, whether a man buying a farm and giving a mortgage of \$7,000 back has a right after payment of \$2,000 to sell any of the buildings off the farm? Y. H. K.
No mortgagor has any right to security of the mortgage, whether it be the destruction of buildings, the cutting of timber, the mining of ore, or other injury. If anything of the sort is threatened, the only effectual protection is to get a lawyer to procure an injunction against threatened wrong.

Forms of Joint Deeds.

J. S. bought a farm, the deed being made out to J. S. and M. S., his wife. Does that constitute a joint deed, and would the wife inherit the land at his death? M. S.

There are four kinds of co-owner ship in property—co-partner, tenants in common, joint tenants, and tenants by entirety. "Joint deed" means nothing in law. A conveyance to John and Mary creates an estate by entirety if they be husband and wife, in the absence of anything in the deed indicating a different intention, although there be nothing in the deed to show that they were in fact, husband and wife. But of course, no competent lawyer would draw a deed to John and Mary without saying explicitly that they are husband and wife, and that the intention of the instrument is to create tenancy by entirety. The statement in the deed that they are husband and wife would not make it a tenancy by entirety unless they were in fact validly married; but in the absence of any such statement in the deed, there would be nothing of record to show the character of the title after parties are dead who know of that relation, and so the title would soon become very doubtful. In order to bolster up such

precarious titles, the rather unsatisfactory practice has arisen of procuring some old resident to make an affidavit that the persons named were in fact husband and wife to his knowledge, and have the affidavit recorded. If the deed creates a tenancy by entirety, the survivor does not inherit from the other. Both owned the "entirety" the moment the deed was made, and when the other died the husband and wife who were "one person in law" is now the survivor only.

HARVESTING SOY BEANS.

Please let me know when to sow and how to harvest soy beans when sown separately, also the usual way when sown in corn for silage. Are they a good feed for horses as well as cows? Also have ten acres seeded to June clover that did not look promising in the fall as the soil is a gravelly loam. Is there any of the seeds I could drill in with this clover in the spring and harvest at same time to advantage? Isabella Co. A. C. R.

Soy beans should not be sown or planted until corn planting time, so you can plant them after you get the corn crop planted. They don't want to be put in early. If you plant the soy beans in drills or if you sow them broadcast you can harvest them with a mowing machine if you want to make them into hay. They must be cut when the pods are nicely formed, then you can save the major portion of the leaves and they make a splendid hay for all kinds of stock.

Probably the most advantageous way to grow this crop is to put it into drills twenty-eight inches apart and give it good cultivation. The crop can be allowed to ripen so that you can save the seeds and then the stalks, although they are nearly bare of leaves, will be readily eaten by all kinds of live stock.

When the beans are planted with the ensilage corn there is no trouble about harvesting them with a corn harvester at the same time you do the corn, then they are thoroughly mixed with the silage.

It is usually very unsatisfactory to try and patch up a poor seeding of clover. It is so late that it doesn't ripen with the other clover, and unless the weather conditions are very favorable it is a question if it will be profitable taking time and everything into consideration, to attempt to patch up the crop. If the field wasn't worth harvesting for hay I would prefer to plow it as early in the spring as possible and sow it to peas and oats and make this crop into hay. If these peas and oats are planted early and harvested when the oats are in the milk there is still time if the ground is disced up at once, to sow to Hungarian grass and you stand a chance of getting a fairly good crop of Hungarian grass, which makes good hay. C. C. L.

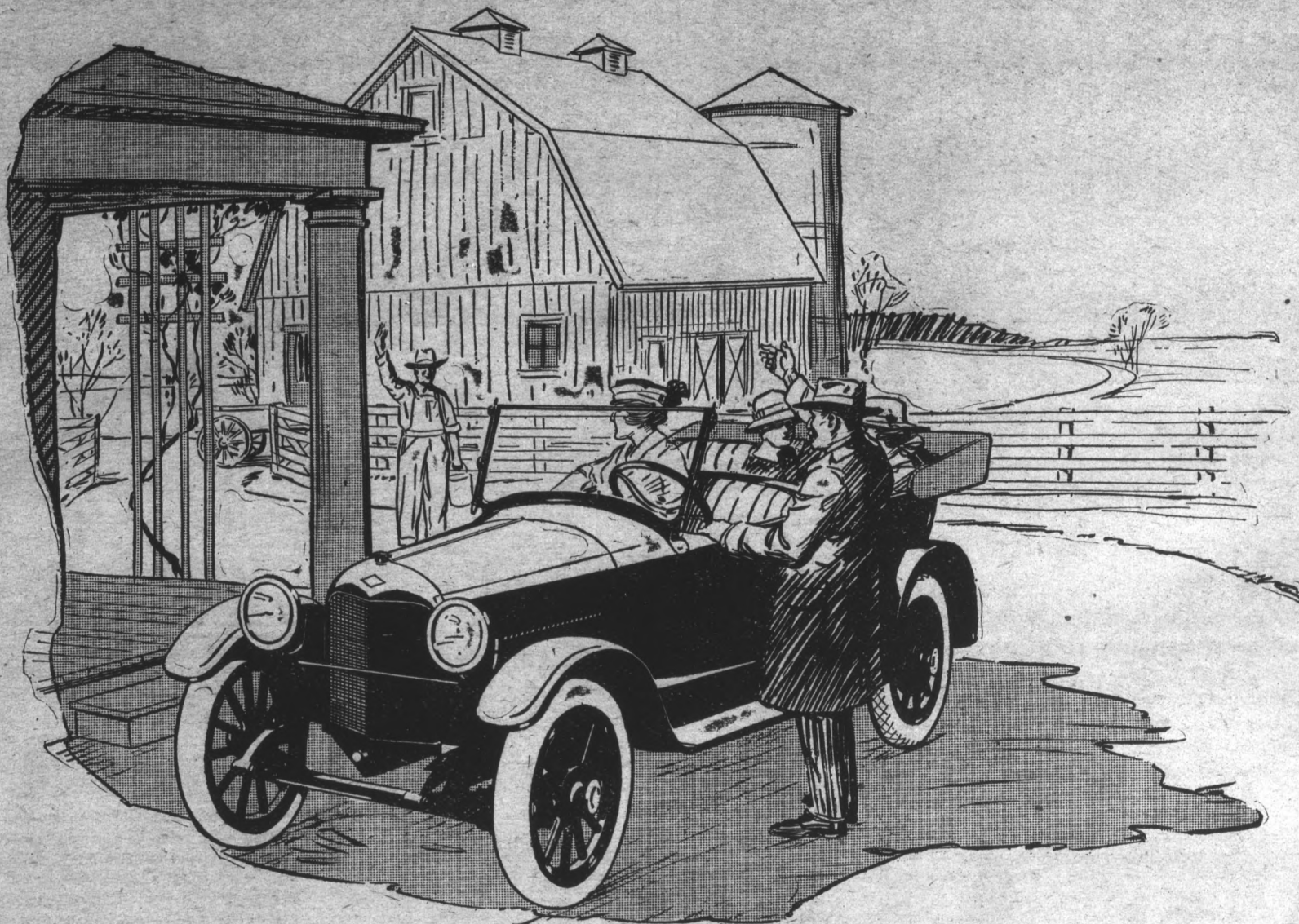
ARE YOU COOPERATING?

Cooperative threshing, silo filling, husking and shredding is becoming popular in many communities. How is your neighborhood meeting these problems? Many of our readers have asked for information along these lines. Your experience will help them. Write and tell us the type of threshers and kind of power you have found the cheapest and most efficient.—Editors.

It is mighty hard work to correct your lack of ability as a feeder by buying a coarse-boned breeding boar.

No wonder city people try and sell farmers gold bricks when they see the lack of judgment they display in wasting good feed on inferior stock.

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The "Preferred Investment"

The wise man selects his motor car investment in much the same way that he selects a first mortgage bond or any other high grade security.

He looks for permanent, enduring *quality*—not mere surface veneer. He looks to the integrity of the manufacturer, the critical expressions of the average owner and the history of the product over a period of years.

It is on this basis that we would have you consider the Paige.

From the standpoint of initial cost, our's is not a cheap motor car. There are many cars on the market that sell for less money than the Paige and we could readily build them ourselves if we considered that the best policy. But we don't.

We firmly believe that self-respect, comfort, and enduring satisfaction have an actual market value. So we build those things into our product.

We take just a little more time—just a little more care in the selection of materials—just a little more

pride in our work. And the result is a real motor car—not a makeshift or a compromise.

In brief, while we agree that first cost is an important consideration, we are convinced that *Ultimate* cost is vastly *more* important.

We believe that the only true test of economy is years of hard, gruelling service on the road.

We believe that freedom from repair bills and excessive depreciation is infinitely more desirable than a mere catch-penny list price.

These are our convictions. We have held to them staunchly during many fitful periods in the motor car industry. So long as the Paige Company is a factor in the making and distributing of motor cars, we shall continue to adhere to them.

And it is because of these convictions, and their practical application to manufacturing, that the Paige car is regarded as a "Preferred Investment" in every automobile mart of the world.

The Linwood "Six-39" 5-Passenger—\$1550 f. o. b. Detroit

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PAIGE-DETROIT MOTOR CAR CO., DETROIT, U. S. A.



Limestone Benefits These Crops

RESPONSE of cultivated plants to lime is variable, depending upon the soil. Records show that some crops will thrive on a given soil without lime applications, and others will not. Some soils are so low in lime that they are practically barren of plant growth.

Some of the crops that are known to respond to lime are:

Legumes	CROPS	Non-Legumes
Alfalfa	Corn	Potatoes
Sweet-Clover	Oats	Carrots
Crimson Clover	Wheat	Turnips
Mammoth Clover	Barley	Cucumbers
June Clover	Rye	Cantaloupes
Alsike Clover	Timothy	Pumpkin
Soy Beans	Buckwheat	Tobacco
Cow Peas	Sorghum	Cabbage
Beans	Beets	
Vetch		

VEGETABLES

Pepper, Parsnips, Salsify, Squash, Spinach, Red Beet, Celery, Cauliflower, Lettuce and Onion.



—is high in lime carbonates—so finely pulverized that 95% of it will pass through a 50 mesh screen—and furnace dried. It will produce healthy, bigger crops for you.

Don't Waste Profitable Wheat

Unless you get full yield from your wheat you are wasting it—75 to 100 pounds per acre top dressing of our Arcadian Ammonium Sulphate (20.75% Nitrogen) will produce full growth.

THE SOLVAY PROCESS COMPANY
2091 Jefferson Avenue Detroit, Michigan

Van Buren County Peaches

FOR years, western Michigan peaches have enjoyed a national reputation and have brought the growers some money. To be sure, peaches are a highly perishable crop and there have been years, and usually times every year, when the market was too low to pay expenses of handling and peaches could be had almost for the asking, but growers on the whole made some money and continued to plant orchards. Occasionally a scourge of the "Yellows" caused immense loss but there were always orchards on their way to take the place of those thus destroyed and "peaches and cream" were sure to be on almost every table in the county for a period of two months, providing of course that the cream could be secured.

The beginning of the seeming end in the peach industry dates back to a February night some twenty years ago when the thermometer registered thirty-nine degrees below zero. Orchards were so severely winter-killed at that time that peaches were a short crop for a number of years. Growers, however, reset and peaches were just coming into their old-time abundance when an October snow storm in the fall of 1907 with a temperature close to zero caught the trees in full leaf and sap and again there were seasons without peaches. The fruit belt really never recovered from this freeze which indirectly was a good thing as it turned the course of agriculture in Van Buren county into different channels. Many farmers never reset their orchards but went into general farming and stock raising, which is safer, for peach growing always was a "gamble." However, following the October freeze a considerable acreage of young orchards again was set, so much in fact that three years ago peaches were again low in price, the mid-season varieties going for almost nothing, although earlier and later varieties brought some money.

The finishing touch on the peach industry seems, however, to have been inflicted by the severe winter of a year ago and last season's crop went at from \$3 to \$5 per bushel, with very few growers making any money. It was the hope, however, that the orchards had escaped and that this year would bring a crop but the indications now are that few trees have enough life to make a crop and large orchards are being pulled. Some growers who stuck to the game and planted last spring are disappointed in the stock which they set, for much nursery stock was chilled and did not make a healthy growth. It is evident that peaches will bring a good price for some time at least, and this will induce some to set orchards, but it is altogether likely that Van Buren county never again will rise to its past record as a peach producing section.

Other factors besides the weather are also having an influence in limiting the acreage set to this fruit. In the best locations where peaches have been grown for years it is almost impossible to get young stock to make a healthy growth and the peach borer inflicts immense damage and is hard to fight. "Yellows" and "Littles" are two diseases always present and so far these diseases have baffled all investigation as to nature and remedy. Another factor in reducing peach area is the prominence apple growing has assumed in this section in the past few years. It is easier to grow apple trees and the mature orchard requires less care, and for the average grower turns a greater profit. Progress, too, has been made in developing early bearing.

A few years ago it was a common impression that twenty years was required to bring an apple orchard into bearing but growers are now making orchards pay expenses at six or seven

years of age. An orchard in this county set nine years ago had as high as fourteen bushels of apples to the tree last fall and an eleven-year-old orchard paid a net profit of \$254 to the acre. These things are influencing fruit men to plant apples and where peaches are set they usually are fillers in an apple orchard the apples being set forty feet with peaches between. Of course, the prices in the next few years will have their influence and Van Buren county will always grow some peaches but fruit growers generally are "afraid of them" and few orchards will be set this spring.

Van Buren Co.

E. V. Root.

PROHIBITION DISTURBS THE NEW YORK GRAPE GROWERS.

ECHOES from the grape districts have it that there is considerable depression over the possible effect of Federal prohibition on the industry. For several years past, a good part of the grape crop grown in the Lake Keuka region has been sold to the wineries. What outlet can be found for the products of the vineyards is now a problem, growers say, and especially is this the case with grapes affected by early frost and which cannot be marketed as first-class fruit.

The grape juice factories have furnished an outlet, but should the government impose the proposed tax of \$56 per ton on grapes used at the juice factories, it is a question whether the industry can survive. However, Paul Garrett, of Penn Yan, who owns a vineyard on the West side of Lake Keuka and has wine cellars both in Penn Yan and in Canandaigua, proposes to launch into the grape preserves business this fall. He has already bought a plot and is fitting up a plant for his new venture, in Penn Yan.

In a recent communication, Mr. Garrett said that it was his intention to buy grapes this fall. He is devoting the most of his time to the reorganization of the work and obtaining the machinery necessary to handle the new preserving business. It is his expectation to use not less than 2,000 tons from the Keuka district and as many more from the Canandaigua vineyards this season.

In conclusion, the letter, which was directed to his manager, R. I. Shoemaker, says: "If our efforts to create market equals our expectations we expect to prepare to handle 5,000 tons of grapes from Lake Keuka, provided we can get them at a reasonable profit, giving the grower a fair profit and leaving us a fair profit on our product. We are going to do everything in our power to keep grape growing profitable in those sections of New York state, and elsewhere where we have plants. And while our business will have to be reorganized to meet the changed conditions brought by prohibition, we expect to continue to use grapes in one way or another."

It may be that an attempt will be made to revise the market for basket grapes. At one time the Lake Keuka district had developed a big market for its basket grapes. But this market to some extent has been lost through neglect in maintaining grades and proper packing, the bulk of the crop, as told, going to the wineries and juice factories.

There is also some prospect that vineyardists may affiliate into the Grape Growers' Cooperative Association. Lloyd Tenney, of Hilton, is heading the plan. Mr. Tenney for some time was attached to the federal Department of Agriculture, and subsequently has been with the Eastern Fruit and Produce Exchange. Last fall there was a good demand for fancy table grapes. It is proposed to hold meetings, at which organization will be discussed, at Keuka, Urbana, Pultney, Hammondsport, Penn Yan and Branchport.

The Same Delicious Satisfying Drink

Used for years instead of coffee by families who value health.

The Original POSTUM CEREAL

Boiled just like coffee

—15 minutes after boiling begins.

Rich in aroma. Pleasing in flavor. Economical. No table drink has ever taken the place of Postum.

"There's a Reason"

Get it at grocers. Two sizes 15c & 25c.

Mention The Michigan Farmer When Writing to Advertisers



CLOVER SEED SITUATION.

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 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 for 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.

Time to Seed Clover.

The time for seeding clover is now at hand or rapidly approaching. During the past year, due, perhaps, in part to the desire to produce larger quantities of grain and in part to the increased price of seed, a smaller acreage than usual was seeded down to grass. Clover seed is higher in price now than it was last year, and there is no reason to expect a reduction this season. Necessary quantities should, therefore, be purchased at once if they have not already been secured. In buying, special attention should be paid to quality. A high-priced lot may be cheaper than a low-priced one. For example, if one lot costs \$45 a hundred pounds and contains ninety-nine per cent of pure seed, of which ninety-five per cent will grow, there will be ninety-four pounds of pure viable seed in every hundred. This ninety-four pounds will therefore, cost forty-seven and eight-tenths cents per pound. Another lot selling for \$35 a hundred may contain ninety per cent of pure seed, of which eighty per cent will grow. This lot then has seventy-two pounds of pure, viable seed in a hundred pounds, and this seventy-two pounds will cost the buyer forty-eight and six-tenths cents a pound. On the other hand, a lot costing \$40 and containing ninety-five per cent of pure seed, of which ninety per cent will grow, will contain eighty-five and one-half pounds of good seed to the hundred, and will cost the consumer forty-six and seven-tenths cents for every pound of good seed. Have the seed tested and be ready to act early and intelligently.

In general, it is well to sow alsike clover mixed with the red clover, a practice which has become very common in recent years. It is much easier to secure a stand of alsike than of red clover, so the admixture of alsike usually insures a partial stand at least. Alsike will make a growth on poor soils where red clover will fail, but it nevertheless appreciates lime and a good soil.

Save on Rate of Seeding.

On account of the high price of seed it is desirable to economize as far as practicable in the rate of seeding. One pound of red clover contains a quarter of a million seeds—enough to place six seeds on each square foot of an acre, while alsike contains about seven hundred thousand seeds to the pound. Nevertheless, the ordinary rate of seed—

(Continued on page 461).

As Distinctive as the White Triangle

Note the Way in Which Hudson Super-Six Owners Accelerate Their Cars

Is there any feeling quite as exhilarating to the motorist as that which comes to the driver of a car that is master of acceleration?

Note the way in which nearly all Hudson Super-Six drivers start their cars. They are off and down the road faster than any other driver. That is such a common performance that owners of other cars do not often dispute Super-Six right of way.

**\$2,200 f. o. b.
Detroit for the
7-Passenger
Phaeton**

Such satisfaction is distinctive to Hudson.

But Hudson owners do not limit their praise to its superior acceleration. They tell how it grows in their affections because of its dependability. They enjoy its freedom and power.

Such confidence adds much to one's automobile satisfaction.

A Quality Not Revealed By the Specifications

More worth-while records than any other car has ever shown, give proof of Super-Six speed, acceleration and endurance. Official records mention the Super-Six again and again as holding the best time for this or that notable stock car event.

But words can not convey the feeling that one experiences when he is master of such a car.

Drive your Super-Six in a way that will give you its greatest motoring enjoyment. You can lead any procession of cars. You can dominate any road.

Production Limited Until June

Super-Six production will not be normal before June.

If you want a Super-Six phaeton—either four or seven passenger type—you may be able to find one at your dealer's. Some have a few in stock. When they are gone, all must wait until open car production is resumed.



(1036)

Hudson Motor Car Company

Detroit, Michigan

Muskrat!



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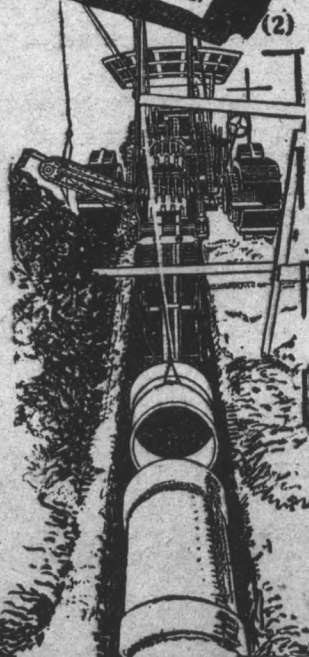
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Draining Farm Lands

(Continued from page 456).

the voids and arteries vacated by the water.

Regarding heat it is found, that in wet lands where evaporation is the only source for drainage, the cold water is constantly drawn to the surface, replacing the evaporated quantity and this will keep the temperature too low for progressive and healthy growth of the plants.

We have all seen the discoloration of the dead or stagnant water in marshes, swamps and ponds; this is only an extract of vegetable decay which does not give nourishment to a healthy growth, but acts as a deterrent, a semi-poison.

In the few suggestions that will be made at this time in regard to underdrainage, the golden rule will be adhered to: "What is worth doing is worth doing well." I am not an advocate of abrogating the law of gravity and run water up hill, nor do I recommend the underdrainage of land by the use of covered brush, boards or stone, or soft burned tile, but only the hard-burned, preferably vitrified tile, remembering that a chain is no stronger than its weakest link, and that one broken or collapsed tile will interfere with the drainage, if not entirely destroy the efficiency of the entire line. Cutting a hole in the larger tile and inserting a smaller is a mighty poor and cheap excuse for using a Y or T and making a perfect mechanical job.

I do not claim however, that any kind of drainage to a certain extent is not an improvement any more than I would claim that to cover a mud road with material one-quarter gravel to two-thirds mud, or with soapstone, was not an improvement, for in both cases it is only a temporary relief, a makeshift, which though cheap, is still the most expensive kind.

How Shall the Farm Be Drained?

The first requirement is an outlet for the water, and this may be divided into two classes: Natural or artificial.

If the land to be drained is elevated above the danger of flood the outlet may be an open drain, conduit, creek or river.

If the elevation is below flood stage dykes and pumps will be required.

We assume that a suitable outlet has been established, that the elevation of the land at different points have been determined by accurate surveys, transferred to a map of the territory to be drained, that the main lines and laterals have been properly located and the size and length of mains and laterals fixed and determined, the tile ordered and everything ready to be staked out and the depth of excavation fixed, and right at this point the farmer engineer and contractor clash.

The farmers have been told, and it looks plausible, too, that water will not penetrate into stiff clay and it will be of no benefit to lay the tile any deeper than two feet; in this theory he is ably supported by the gentleman who is to lay the tile.

If I cannot convince my farmer friend after a long experience and observation that they are wrong, I "shake the dust off my feet" and leave. The man with the tile machine says to the farmer: "What does he know about tiling? Let him go; I have a level in my tool box and I will fix the level for your tile all right."

A word about leveling. The land needing drainage is generally level, often with very few inches fall in a mile, and it takes a well adjusted instrument and an experienced man at the eye piece to correctly determine this; it can hardly be expected to be done with an instrument "in my tool box," mixed up among oil cans, crowbars, picks and shovels and an inexperienced operator. But the proper depth of the tile.

Many years ago I was called to devise a system of drainage for a piece of

the land containing twenty acres, the north half of which was covered with cattails and sweetflag. I mention this particular case because it represents the trip-lex condition referred to above, only that the owner had previously left this work entirely to my care.

After providing for an outlet the distribution of the laterals was laid out seventy-five feet apart, and we proceeded to construct every other line. The tile were laid in the stiffest, hardest clay four to five feet deep, every inch below eighteen inches had to be picked.

Some of the wise twenty-four-inch men laughingly said to the owner: "You must have money to burn; what benefit do you expect to derive from such work as that? I offer to bet that not one drop of water will get into that tile at that depth," etc., etc. The owner replied, somewhat in doubt: "I have left this work to the engineer and he ought to know." What was the result? Mrs. Bell told me that in the first year the crop of oats very nearly paid for the whole expense of tiling.

Here is another evidence of the eighteen to twenty-four-inch man: A lumberman and city farmer for whom I did all the work, both in the field and woods, told me to go out to his farm and give levels for some tile his foreman was to put in. I suggested that the outlet be deepened and the tile be laid about four feet deep, and gave the grade accordingly, and this little suggestion of mine pretty nearly lost me the job. The foreman knew more about it than I did, and laid the tile only about eighteen inches deep. From the trampling of heavy horses and loaded trucks in the fall and early spring, several of these tile were found standing on end, and in taking them up and relaying deeper, more than one-half were found broken by frost.

Regarding the depth of tiling, I quote the words of Mr. Gisborne, an acknowledged authority on farm drainage:

What, Then, Shall be the Depth of the Tile?

Take a flowerpot and fill it with dry soil a foot deep. Place it in a saucer containing three inches of water. The first effect will be that the water will rise through the hole in the bottom of the pot until the water fills the voids in the soil to the level of the water in the saucer; this effect is gravity and the upper surface of the water is our water table. From it water will ascend by capillary attraction through the whole body of the soil until moisture is apparent on the surface.

Put in your soil at a temperature of sixty degrees, a reasonable summer heat, for nine inches in depth, your water at forty-seven degrees.

The attracted water will ascend at forty-seven and will diligently occupy itself in the attempt to reduce the sixty degree soil to its own temperature. Moreover, no sooner will the soil hold water of attraction than the evaporation will begin to carry it off and produce the cold consequent thereon. This evaporated water will be replaced by water at forty-seven degrees and this double cooling process will go on until the water in the saucer is exhausted. Supply water to the saucer as fast as it disappears and this cooling process will be perpetual.

This saucer drainage is nothing more or less than a sample of the continual cooling of the ground, which is found by experience to chill vegetation. The water table may be within nine inches of the surface but in many instances even with shallow drains far apart it is within twelve to eighteen inches and in undrained lands the water will remain at a level determined by the source of outlet into some lower channels or by evaporation.

Here we have two obnoxious forces

(Continued on page 477).



How Geo. Banto Keeps His Seed Corn.

OATS NOT BEST LAMB FEED.

ONLY when oats are cheap and of a good quality should they be used to fatten lambs. Oats are high in fiber content and when compared to corn they are 10 to 14 per cent less efficient as a fattening feed for lambs. Oats tend to produce growth rather than finish and consequently sell for less a pound on the market.

Last year the Iowa agricultural experiment station, in co-operation with the South Dakota and Nebraska experiment stations, carried out a 90-day feeding test, comparing oats with corn when fed in conjunction with alfalfa hay and rock salt to fattening lambs. In this test the lambs received oats as the sole grain ration, made an average daily gain of .351 pounds at a feed requirement of 424 pounds of oats, 629.1 pounds of alfalfa hay and 1.50 pounds of salt per hundred pounds of gain.

The lambs that received corn as the grain ration made an average daily gain of .349 pounds at a feed requirement of 364 pounds of shelled corn, 629 pounds of alfalfa hay and 1.98 pounds of rock salt. Besides this, the lambs that received the corn sold for \$16.25 a hundred, while the lambs that received the oats sold for \$15.95 a hundred, indicating that the corn-fed lambs carried a higher finish.

Taking the above figures as a basis, the cost of gains in the two lots would be practically the same with corn at the present price of \$1.32 a bushel and oats at sixty-two cents a bushel. However, the fact that the corn-fed lambs sold the highest would show that corn at \$1.32 a bushel is cheaper than oats at sixty-two cents, even though the oats were plump and of good quality.

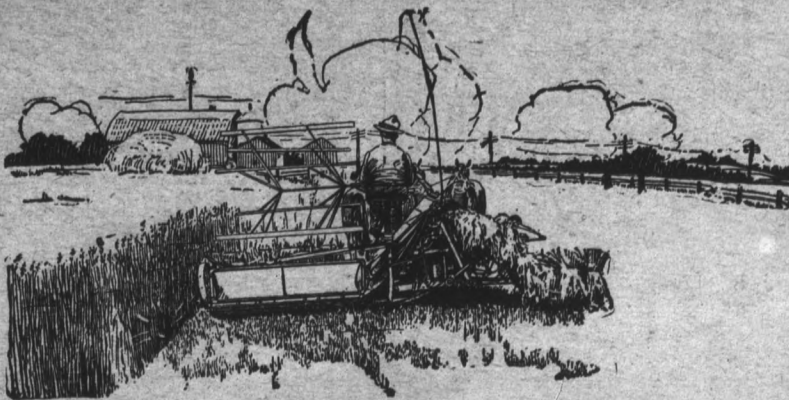
CLOVER SEED SITUATION.

(Continued from page 459).

ing for red clover is eight to ten pounds an acre and for alsike about six pounds. It is evident that the amount of seed necessary to get a stand can be greatly reduced if methods can be used that will insure the survival of a larger percentage of the seedlings. Several methods assist materially in obtaining a stand, particularly in wheat, and the following are recommended:

Sow at the most favorable time as regards soil condition, and cover the seed by sowing and then harrowing, or by harrowing both before and after sowing, or the clover may be sown with a disk drill. By any one of the methods any injury to the wheat or timothy sown in wheat is negligible.

If barnyard manure is available it will greatly assist in securing a stand, even when the clover seed has been sown on the snow covering or on the wheat without harrowing. Straw is likewise very useful, but less efficient than manure. Either the manure or the straw assists largely by reducing the alternate puddling and baking of the soil surface and thus protecting the seedlings from destruction.



How About Your Binder?

EVERY sign points to a prosperous year for the farmer. Prices for farm products, due to a steady domestic and unusual overseas demand, are at high levels and it is reasonable to expect that they will remain so for some time to come.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be the part of real economy to buy a new machine and be assured of uninterrupted and maximum service at a time when a break-down would mean serious embarrassment and loss.

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will harvest all your grain crops without waste. These are unusual binders adapted to take care of usual or unusual crop conditions. Generations of farmers have tested and approved until these machines are spoken of in much the same fashion as an old and trusted servant.

See your local dealer early in the season and arrange with him to have your binder delivered in plenty of time to assure the complete harvesting of your crop. Our organization being an essential industry has been speeded to top-notch efficiency. By anticipating your needs and ordering early, you make it easier for us to take back our soldier boys without disturbing our present organization. It will be wise also to make your purchase of Deering, International, McCormick or Milwaukee twine as early as possible.

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Because of this center-shear cut and absence of vibration, the Kalamazoo will do more work, better work and outlast any other cutter in the world.



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Never have the farmers of America so quickly recognized superior cutter merit as in the Kalamazoo. They are built to give satisfaction—and they do—absolutely. Every farmer and dairyman who sees the Kalamazoo Ensilage Cutter at work, wants one. Now being used on over 60,000 farms.

The forward-looking farmer should begin now to investigate the many advantages of owning his own Kalamazoo Cutter.

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If you want to do your best to keep your cattle—horses, hogs, sheep, hens—in the best shape possible all winter long, you want to give them something beside ordinary feed. Something that helps to make up for the lack of greens, fresh air and exercise.

Make your own stock food, just as you want it, and then add a little

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Write for Catalog

Ensilage for Work Horses

THERE seems to be a prejudice in the minds of most farmers against using ensilage as a ration for horses. I say prejudice because I believe that in most cases they have never given it a trial. I notice in the quarterly bulletin issued by the Michigan Agricultural College in November, that ensilage had been fed to some young horses at the experiment station for a number of years with excellent results. This seems to me to be a matter which should be seriously considered. Most farmers have but very little for their horses to do during the winter, and the cost of the feed used to winter them through is quite a factor. This cost I am sure can be reduced, at least by one-third by using a ration consisting principally of ensilage.

The firm with which I am connected has been engaged in the manufacture of cooperage and lumber for about sixteen years, during which time we have done considerable farming. We have usually kept from fifteen to twenty horses and mules, which have been used principally to haul logs and bolts to supply raw material for our factory. The nature of the business is such that the horses have the hardest kind of work to do practically every day, and it takes the very best of feed to keep them in good condition.

For a number of years our horses were troubled with indigestion, and we were unable to find a ration that would keep them in good condition, and still be free from digestive troubles.

About six years ago we decided to experiment with ensilage. We consulted our veterinary who advised against it, saying that the stuff was not fit to feed a horse. We, however, spent the greater part of that winter experimenting with different rations with ensilage as the base. We tried at first feeding it once a day, at noon, and found that the horses not only ate it with a relish, but seemed to do well on it. We then began feeding the ration in the morning, and at noon, and were really surprised at the results.

With the ensilage we fed we cut wheat or oat straw, and used for the grain ration a mixture of ground corn, oats, and wheat bran, mixed in equal parts. Our method of preparing and feeding this ration was as follows:

In the first place we did not fill our silo until the corn was pretty well ripened, in order that the ensilage would be quite free from acid. We put an abundance of water in with the corn, which helped in packing, and made the ensilage quite moist when it was ready to fill.

After filling the silo we turned the discharge pipe over into that part of the hay mow directly over the feed room. We then put our straw through the ensilage cutter, leaving the knives set the same as for cutting the corn. It is surprising the amount of cut feed that can be stored in a small space.

We placed a round iron tank at the bottom of the silo; at a point where the cut straw could be put into it with very little labor. We put the ensilage and cut straw into the tank in the proportion of two baskets of ensilage to one of straw, and sprinkled the corn, oat and bran mixture over the top of the mass, and mixed it thoroughly with a fork or scoop. It was now ready to feed.

We fed each horse what he would eat up clean, which we found to be from a bushel to a bushel and a half, depending on the size of the horse. We fed this ration in the morning, and at noon, then at night we fed a liberal

amount of good clover or mixed hay, and ear corn.

We have been feeding this ration for five winters, and we could not ask for better results. The cost of feeding has been reduced at least one-third, and our horses have kept in a more healthy condition than before.

For ensilage corn we have had the best results with the large flint varieties, usually the improved King Philip, which we find does well in this locality. We drill the corn fairly close in the row, and we find that we get about as many tons of ensilage per acre as from some of the larger varieties of corn, and we think much better ensilage, on account of the abundance of leaves which cover the stalks to the ground.

We have never had an opportunity to feed alfalfa along with the ensilage; but it would seem as though alfalfa could be substituted with a material reduction in the grain ration.

Cass Co.

T. L. HAMPTON.

CORN MARKET VALUES IN TERMS OF HOGS.

WITH the passing of the hog stabilizing price and the removal of pork and pork products from the conservation list and lifting of export restrictions, pork returns to the old order of marketing on a demand and supply basis. As hogs are among the principal consumers of corn, that cereal must be affected by the market for pork. The price of one is to be reckoned in terms of the other, usually about ten or eleven bushels of corn to one hundred pounds of live hogs.

The following table made from a compilation by the Department of Agriculture shows the average value of one hundred pounds of hogs in bushels of corn on the fifteenth of each month of 1918 and the average for the past ten years:

	1918.	10-yr. Av.
January	11.2	12.0
February	10.3	11.9
March	10.1	12.1
April	10.2	12.0
May	10.3	10.9
June	10.0	10.5
July	9.9	10.4
August	10.4	10.4
September	10.8	10.6
October	11.0	11.0
November	11.5	11.4
December	11.3	11.5

The average will vary in different states, those in the corn belt, for instance, giving about ten per cent more of corn for one hundred pounds of hogs. But for the whole country the above figures are a fair average of the parity of prices between the two commodities.

MOVING THE WHEAT CROP.

With no wheat from Australia and a short crop in Argentina, Europe will have to depend almost wholly on North America. Russia, the Balkan States, Austria, Hungary and Germany are in such a disturbed state that their crops will be far below normal. Western Europe and Northern Africa will not be able to supply their own breadstuffs. Mr. Hoover says that in an unrestricted market wheat would sell for \$3.50 a bushel, the high price of the spring of 1917. There is no reason to think that he exaggerates the shortage. On the basis he sets forth the United States government should be able to sell the wheat now in sight and the coming crop of a billion bushels or more without losing anything on its guarantee of \$2.26 a bushel for the 1919 crop, and prices for hogs and cattle should remain firm.

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Dept. 6127, 13th St. and Central Ave., Chicago, Ill



Green Manure Crops

I have a few acres of land which I sowed with rye last fall and it shows a nice stand. In late spring I want this field to plow and sow to soy beans broadcast, and plow that in. Please let me know in what stage rye and soy beans should be plowed and how much soy beans should be sown per acre and which of the crops, wheat, corn or potatoes, would be the best on this field. If soy beans will do well drilled in with corn and how to mix it. I have a field which I had in buckwheat last season. I have a very nice crop for such a dry season, and I want to make pasture on that field. How will I do it and what kind of pasture mixture shall I use, as I want to make it a steady pasture and I cannot afford to use stable manure on that field, only green manure.

Wayne Co.

A. T.

Rye is less valuable as a green manure crop than soy beans because you add nothing to the soil in plowing down rye that the rye did not take from the soil in the first place except a little organic matter in the form of carbon which the plant takes from the air. With soy beans the case is different because this plant is supposed to take nitrogen from the atmosphere and when you plow this crop down you are adding nitrogen to the soil as well as organic matter. Your plan, of course, will tend to improve your soil quite fast, but it is expensive to plow down crops and get nothing except their manure value. Land sometimes gets in such poor condition that this may be the cheapest way, but ordinary land given good tillage, especially with the help of stable manure, can be made to produce fair crops and at the same time improve its fertility and not plow down the entire crop.

This rye can be harvested and the grain sold. If the ground is at once plowed or disced it can be planted to soy beans and still have time in that season to get a sufficient growth to make a good crop of green manure, then you would get something for your work this season—a crop of rye. By using fertilizer, you can not only save the rye crop but you can cut the soy beans for hay and have the roots and stubble to turn down, which will improve the soil. By using fertilizer you will get a larger growth of these crops and there will be more crop residue in the form of roots and stubble to turn down, which improves the physical condition of the soil. Many times it is better to plow down the crop residues and gradually incorporate organic matter with the soil than it is to plow down the crop residues and gradually incorporate organic matter with the soil than it is to plow down a full growth. By adding too much vegetable matter to the soil at once, sometimes we create an acidity in the soil which does more harm for a crop or two than it does good.

Soy Beans for Silage.

It is getting to be quite a common practice to plant soy beans with ensilage corn to increase the protein content of the silage. Many people have grown fairly good crops of soy beans and corn. The theory is that the growth of soy beans will interfere little if any with the growth of corn because the nature of the plant is different from the corn plant. It is on the same principle as mixing timothy seed with clover seed in growing a hay crop. You can combine the two and get a thicker stand and a larger crop than you can to grow either one separately because the two plants are of a different nature. Clover having a root system that goes deeper into the soil and also having the power of taking nitrogen from the atmosphere it is claimed

Mohawks and Rocky Roads

Less than 222,311 miles of our total of 2,223,117 miles of highways are improved.

We could improve this percentage immensely by spending money on good roads, rather than on new tires that bad roads wear out.

Think it over. Boost good roads.

There's a rocky road, a bumpy road, or a bad strip of roadway of some sort, between you and your market. It's punishing your tires—putting a terrific strain upon them.

Many tires which may give good mileage under easy conditions won't stand up long under this abuse.

The strain may not show on their treads. For those bumps and strains don't hurt the rubber. They pound away at the fabric, sometime breaking one or two plies down underneath. The break may not show for weeks. But it is there. It spreads. Other plies give way. Suddenly, you have a blowout. You wonder why.

Mohawk tires don't give way even under such severe service as this. Most sizes have one more ply of fabric than other makers think it necessary to use. And this extra ply makes all the difference in the world in the strength of the tire.

Of course, Mohawks would give good mileage without this extra ply if they were always used on smooth roads and pavements.

But the Mohawk Company believes that Mohawk users cannot always pick and choose their roads. They have to go where they want to, when they want to.

Because of this we haven't skimped on a single feature. We pay more money for our rubber and fabric than most makers so that we can secure the best.

We use a generous quantity of these materials. Mohawk Tires actually weigh more than other tires because there is more good rubber in them. For example, the Mohawk Cord Tire weighs 8 to 10 pounds more than most other cord tires on the market.

We hire the most experienced workmen we can find and give them plenty of time to put the best they know into every tire.

There is nothing mysterious or secret about such methods. Just a reasonable logical policy of building honest tires so that every tire produced will give the buyer a good big value in mileage.

Isn't that the sort of a tire that appeals to you?

Good dealers almost everywhere sell Mohawks.

MOHAWK RUBBER COMPANY
AKRON, OHIO

Branches at:

New York Boston Chicago Atlanta Kansas City San Francisco

Write for the Name of Our Nearest Distributor.

MOHAWK
"Quality" TIRES



Grow Wheat in Western Canada

One Crop Often Pays for the Land



Western Canada offers the greatest advantages to home seekers. Large profits are assured. You can buy on easy payment terms.

Fertile Land at \$15 to \$30 per Acre—

land similar to that which through many years has averaged from 20 to 45 bushels of wheat to the acre. Hundreds of cases are on record where in Western Canada a single crop has paid the cost of land and production. The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta want the farmer to prosper, and extend every possible encouragement and help to

Grain Growing and Stock Raising.

Though Western Canada offers land at such low figures, the high prices of grain, cattle, sheep and hogs will remain.

Loans for the purchase of stock may be had at low interest; there are good shipping facilities; best of markets; free schools; churches; splendid climate; low taxation (none on improvements). For particulars as to location of lands for sale, maps, illustrated literature, reduced railway rates, etc., apply to Supt. of Immigration, Ottawa, Can., or

M. V. McINNES, 172 Jefferson Ave., Detroit, Mich.

Canadian Government Agent.



Make Money Spare Time

A few counties open for resident farmers, as exclusive selling representatives for high-grade line of Star-O-line Building Products. Liberal arrangements for men who are well known in their locality and enjoy the confidence of their neighbors. No capital investment required. Write for full particulars. Address

Building Supply Department M-100
White Star Refining Co. Detroit, Mich.
Manufacturers Extra-Quality Motor Oil and Star-O-line Products

CASH FOR OLD FALSE TEETH, DISCARDED JEWELRY, ETC.

Mail us useless false teeth, (with or without gold fillings), discarded or broken jewelry, watches, magnets, points—anything containing gold, silver or platinum—and we will send you the full cash value by return mail (and hold your goods 10 days pending your acceptance of our remittance.)
Dun and Bradstreet References.
OHIO SMELTING & REFINING COMPANY
910 Park Building, Cleveland, Ohio.

LANDOLOGY

A magazine giving the FACTS in regard to the land situation. 3 months' trial subscription 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.

BINDER TWINE

Guaranteed A1, bug treated, f.o.b. factory near Chicago
Sisal or Standard February car lot price 19¢/c.
Small lots 20¢, later sht. 5¢ per bale per month more.
Consumers Cordage Co., Minneapolis, Minn.

Binder Twine Get our low 1919 prices. Farmer agents wanted. Sample free.
THEO. BURT & SONS, Melrose, Ohio.

Please Mention The Michigan Farmer When You Write to Advertisers

Barrett Everlastic Roofings

Check the buildings you will roof this Spring—

If you want to be absolutely *sure* of getting the best roofs for your money, read carefully the descriptions of the "Big Four" Everlastic Roofings given below and pick out for each building the type of roof it requires. Figure on Multi-Shingles, Tylike Shingles or Slate-Surfaced Roofing in rolls for the house and the better buildings, and the popular Everlastic "Rubber" Roofing for sheds, stables, silos, etc.

	House
	Garage
	Barn
	Stable
	Chicken Houses
	Hog Pen
	Corn Crib
	Silo
	Sheds

Everlastic Roofings positively can't be beat for value. They are made by The Barrett Company with a record of 60 years of successful roofing experience. They are water-proof, and resist sun, rain, wind and fire.

Everlastic "Rubber" Roofing—A recognized standard among so-called "rubber" roofings. Famous for its durability. Made of the best water-proofing materials, it insures dry, comfortable buildings under all weather conditions. Nails and cement with each roll.

Everlastic Slate-Surfaced Roofing—A highgrade roll roofing, *surfaced with genuine crushed slate* in red or green. Never needs painting. Colors are permanent. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.

Everlastic Multi-Shingles—Made of high-grade felt thoroughly water-proofed and *surfaced with crushed slate* in natural colors, either red or green. Laid in strips of *four shingles in one* at far less cost in labor and time than for wooden shingles. Gives you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather.

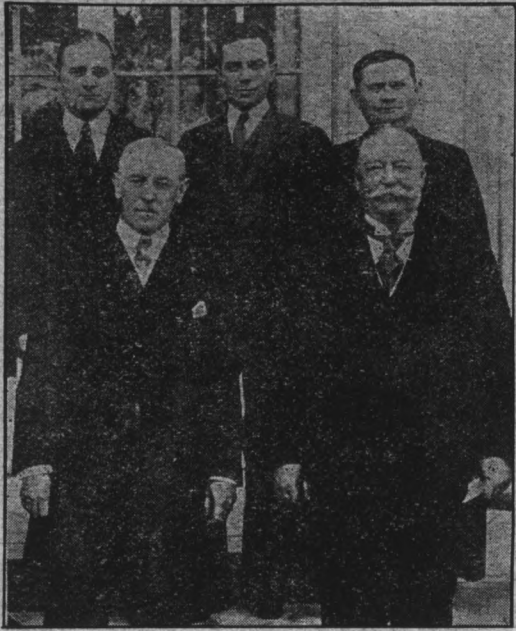
Everlastic Tylike Shingles—Made of the same durable slate-surfaced (red or green) material as Everlastic Multi-Shingles but cut into individual shingles, 8 x 12 $\frac{3}{4}$ inches. Laid like wooden shingles but cost less per year in service.

Write to our nearest office for free illustrated booklets.

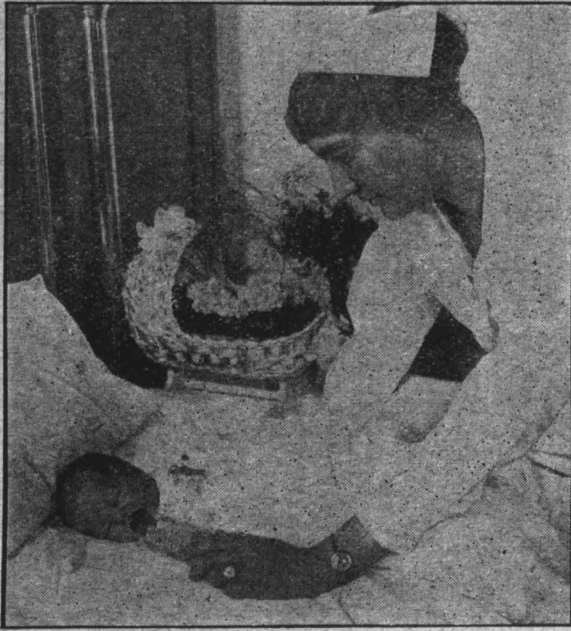
New York Chicago Philadelphia The Barrett Company Boston St. Louis Cleveland
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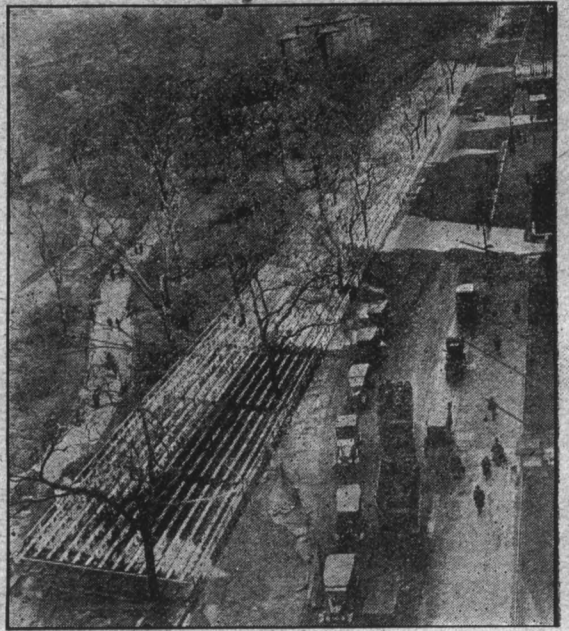
WORLD EVENTS IN PICTURES



President Wilson, Mr. Taft and Red Cross Officials Transform Red Cross to Peace Basis.



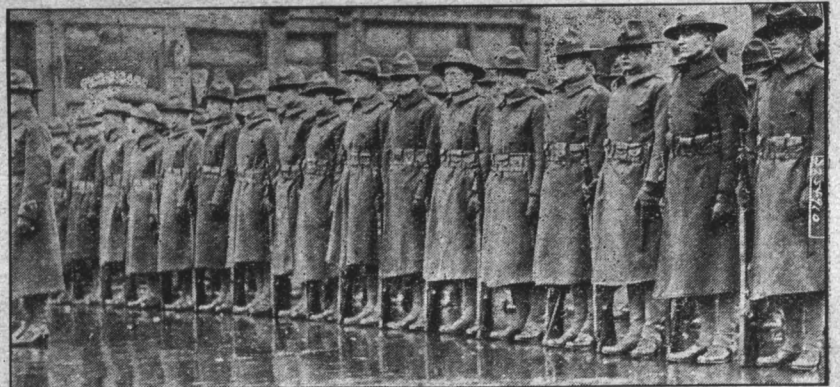
President Wilson's Youngest Grandson and Namesake, Woodrow Wilson Sayre.



Grandstand Over Two Miles Long for Reviewing Returning New York Troops.



The War Over, Record-breaking Crowds Enjoy Bathing at Palm Beach.



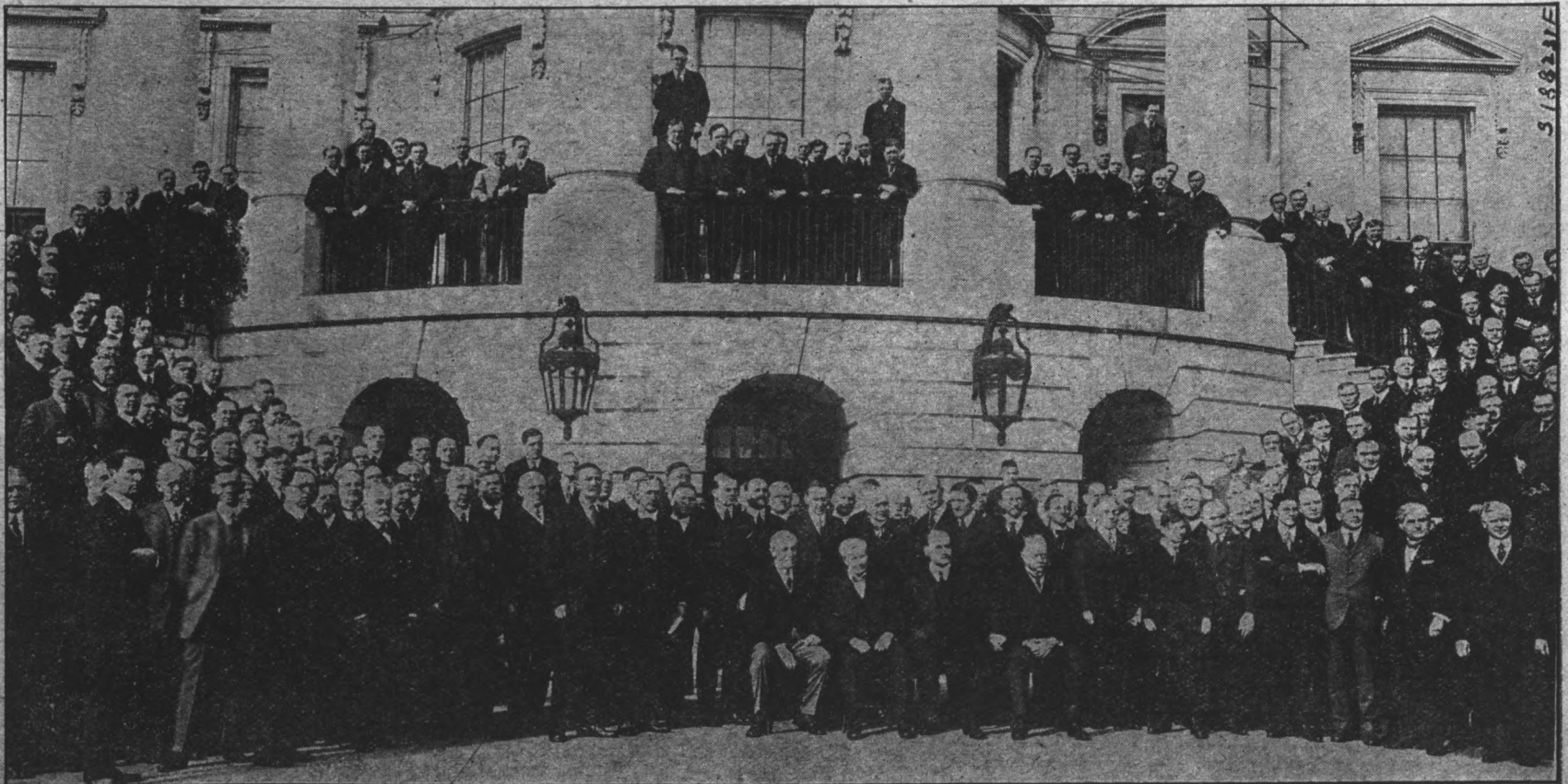
Wounded Marines, Heroes of Belleau Woods and Chateau Thierry.



Soldiers Awaiting Transportation Dance with American Girls in France.



A Load of Supplies for Allies Arriving at Warehouse in Archangel.



Governors of States and Mayors of Cities Meet with President Wilson at Washington to Discuss Present Conditions and Plans for Reconstruction.

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How We Got the R. F. D.

(Part One)

The First Historical Sketch of the Establishment of Our Rural Mail Service.

By J. H. Brown

THE Michigan Farmer had a very prominent part in the job of helping start "Rural Free Delivery" in this country, and especially in Michigan. The story about how the service was finally organized and an experiment tried out in one farming community in each of several states during the fiscal year of 1896-97 is more or less familiar to a very small portion of the older readers of this paper. To the majority what we have to say about it herewith will be more or less "new stuff," never published in these columns, and should prove interesting to every Michigan Farmer family who has a rural mail box out in the road near the farm house.

During the years 1895-6 congress was importuned by the National Grange, Michigan State Grange and other farm organizations, to appropriate a little money to test out the experiment of delivering mail to farmers' doors. The writer was on the Michigan Farmer editorial staff at that time, and was more or less instrumental in stirring up the demand for, and in helping to start, rural free delivery in Michigan.

Finally the National Grange executive and legislative committees, after a long stay in Washington, and poking up the animals more or less constantly, stirred up excitement enough in the Capitol to secure the passage of a bill appropriating fifty thousand dollars to do something to mollify the farmers and prove that rural free delivery would be a fizzle. Many congressmen were positive it would be a waste of money, and not a few hoped it would pan out so poorly that not a single farmer would ever show up or stick around asking for another dollar to have his mail taken out of the post office and delivered to his home way out in the country.

But it worked the other way, and even exceeded the fondest anticipations of the original R. F. D. promoters. Congressmen were surprised, and some bitterly disappointed. The test was such a success that National Grange and a multitude of the farmers of the United States, including the Michigan Farmer and other leading agricultural periodicals, demanded that more money be appropriated the next year and the experiment broadened out.

In spite of the demand, congress the next year, 1897, finally allowed the measly sum of \$40,000 to get out of the government till, just to get rid of the pesky farmers who were bothering the congressmen. Then some of them washed their hands of the whole R. F. D. business forever, and hoped their rural constituents would be satisfied after they had done so much for them agin' their own principles and consciences in the matter.

Poor congressmen, how they must have suffered from loss of sleep for the next night or two, realizing they had voted to waste so much of the government's money in such a fizzle scheme.

This was ten thousand dollars less than the first appropriation, and the general feeling among some members was that it would be the last to use in such an idle dream. But let's see how it turned out.

In 1896 there was one R. F. D. route in Michigan, at Climax, our farm home post office, and one each in several other states. In 1897 there were eighty-three rural routes in operation in the United States, and the appropriation was but \$40,000. In 1898 congressmen had a fit over the pressure brought to bear around them by "the pesky farmers," and had to hand over \$50,000 to get the ruralites started for home once more. That year there were one hundred and forty-eight rural routes working to get mail to farmers' doors.

In 1899 the congressional appropriation

for rural free delivery was \$150,000. Number of routes in operation, three hundred and ninety-one. In 1900 the astounded congressmen shelled out \$450,000, and R. F. D. boys were driving, biking and wading over all sorts of roads and trails on 1,276 rural routes in this great and glorious country. At the next session of congress there were some scared senators and representatives who had heard from home more than once, including thousands of letters written in farm homes from both enthusiastic and irate tillers of the soil, who wanted their hired man down at Washington to hop around and do something so their folks might have an R. F. D. in good working order in their midst. And it worked down at Washington. Congress shelled out that year, 1901, the whopping sum of \$1,750,000 for R. F. D. activity, and it helped get 4,301 rural carriers. This was quite a shower, after the little sprinkle of the first two years of the R. F. D.

In 1902 the appropriation was \$3,993,740. Number of routes in operation,

8,466. The 1903 appropriation was \$8,054,000. Number of routes, 15,119. The 1904 appropriation was \$12,921,700, and number of routes in operation was 24,566. The tenth (1905) year of R. F. D. service saw congressmen shell out \$21,116,600, and there were 32,055 rural routes in operation in the various states and territories.

In selecting the first route in each one of several states in 1896, the purpose of the R. F. D. was stated to be to carry mails daily, on a fixed line of travel, to people who would otherwise have to go a mile or more to a post office to receive their mail. It was required that roads traversed should be kept in good condition, unobstructed by gates; that there must be no unbridged cricks or streams not fordable at all seasons of the year, and that each route of twenty-four or more miles in length domicile one hundred or more families. A slight variation was allowed under special conditions.

After the first appropriation was announced in the press dispatches, and

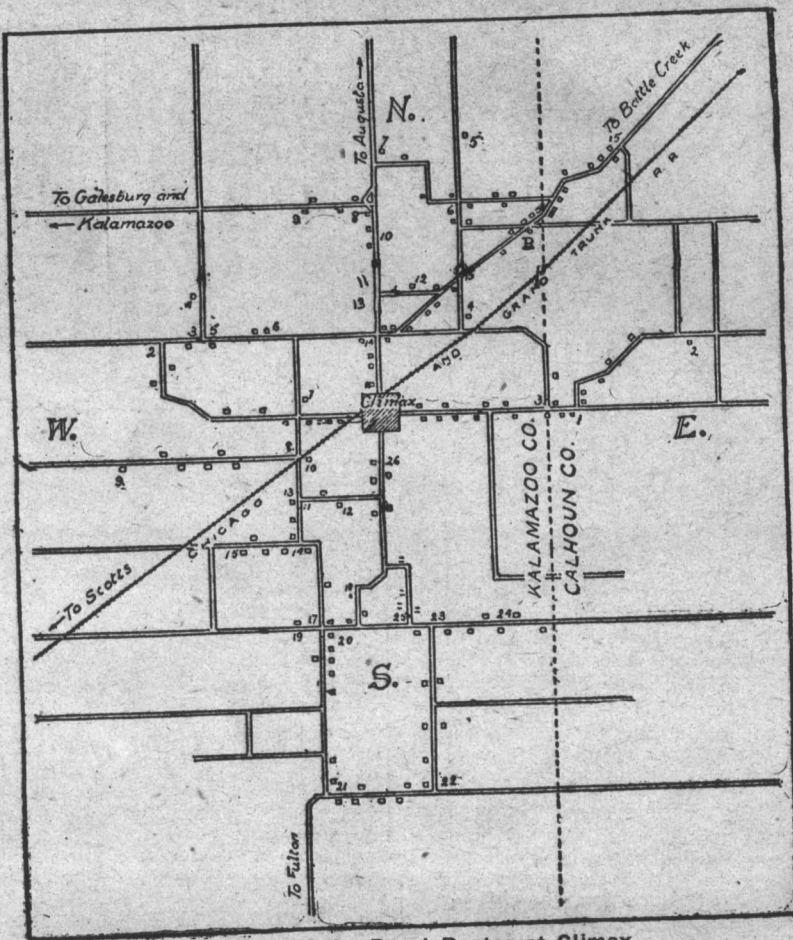
we had referred to it in the Michigan Farmer, we wrote to United States Senator Julius C. Burrows, asking that the first experiment in Michigan be made from our farm home post office at Climax. Later on a federal inspector from the post office department came to Climax and asked us to help inspect and lay out the first route. We spent two days doing this and found that it would be impossible for one carrier to get over the roads daily. So two carriers were sworn in and the route divided. Our hired man on the farm, Lewis A. Clark, and Willis L. Lawrence, in the village, were appointed. Then we drew a map of the first rural free delivery in Michigan and printed it in the next issue of the Michigan Farmer, and a copy was also sent to the department at Washington.

We are wondering if there is not some farm home in which files of the Michigan Farmer of the year 1896-7 have been preserved? We lost our issue in which the first map appeared, and which covered the front page of the paper; and the files of that year in the Michigan Farmer office were burned in a big fire several years later. However, in response to many requests, we again printed the map, somewhat reduced, in the Michigan Farmer issue of January 21, 1899, just twenty years ago. This map we append herewith. It is now a valuable historical curiosity, and each reader should preserve this and consecutive issues, as the story about the R. F. D. in Michigan is worth handing down to future generations. And the R. F. D. service is one of the greatest things that ever happened to the American farm home.

Lewis Clark was receiving good wages, (\$18 per month), at that time working on our farm. He had just bought a new high-grade bicycle and conceived the idea that he would like to try the new job of rural mail carrier and use his bicycle when the weather was favorable. Upon his urgent desire, we recommended him to the post office inspector and he was sworn into the service. In those days there were good bicycle paths along the side of the road in many localities, so that Lewis was able to carry mail considerable of the time during the next few years. In all he rode over twenty-four thousand miles on that machine over the route shown herewith, and probably there is not another rural carrier in the United States who has such a record. He has the same bicycle yet in fair running order, and his two young boys have used it nearly every summer for several years. The accompanying picture of Lewis Clark shows him leaving mail in our farm mail box one day during the first of his delivery on his bicycle. This picture was printed in Leslie's Weekly at the time and commented upon by the editor as a wonderful endurance run on a bicycle delivering R. F. D. mail on country roads.

The roads around Climax twenty-two years ago last December 3, when the service started, were like all country roads. Climax prairie soil is heavy clay loam and very sticky when it is wet. Only about one-third of the two original rural routes were on this prairie, the rest being on the diversified soil and rolling country outside. When the two original carriers started out that first morning from the Climax post office, December 3, 1896, it was not very good bicycle traveling. However, Lewis Clark stuck to it, even in mid-winter, on certain days when the ground was frozen, little snow, and the roads smoothed down by wagons with wide tires. But he quickly found it necessary to get a horse and cart, and before the first winter was over both carriers were using two horses.

There was precious little mail to



The Layout of the Rural Routes at Climax.



Michigan's First Rural Mail Carriers.

carry during the early days of this first service in Michigan. Some mornings either carrier could stuff all the mail for his route in his coat pockets. Sometimes there were less than a dozen letters. Hardly a farmer took a daily paper. On Fridays and Saturdays there were a goodly number of copies of the Michigan Farmer, and it was on such a day that we took the picture of Lewis Clark and his "machine" at our farm mail box.

By referring to the map it will be noticed that Clark went east and north of the village to deliver mail to about one hundred farm homes and traveling about twenty-five miles. He lived at our farm at first, three miles north-east of Climax, on the Battle Creek road. Thus he rode his bicycle about six miles further every day while going to and returning from the post office.

Willis Lawrence lived in the village and drove his horse and cart west and south. He had a more level country to drive over, but the roads were no



Lewis Clark and His Bicycle.

better, as a rule. Later on gravel was spread over some portions that were the worst, and a few years ago, under the new county system of building state reward roads, the road south of Climax was improved. All the other roads radiating from Climax village are little better today than they were twenty-two years ago, and some of them are worse. In the work of building state reward roads in Kalamazoo county under the county system the county commissioners have neglected the territory and township around Climax and the farmers and villagers are highly indignant thereat. They are now making an effort to build their own road east of the village under the Covert law, and every taxpayer is signing the petition.

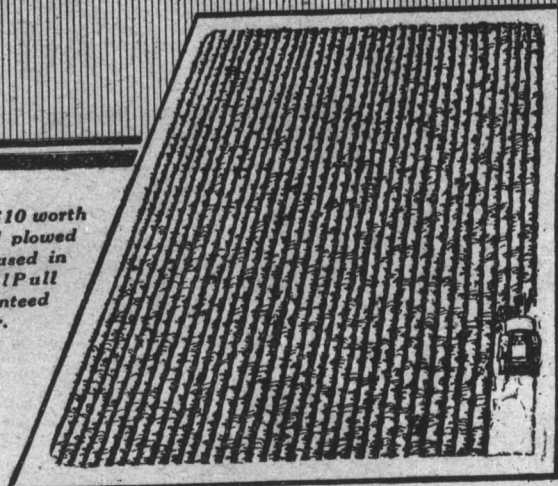
When Clark and Lawrence started out, December 3, 1896, they had about twenty-five to twenty-six miles each day to carry mail. The picture shows them starting out with their horses and road carts. We have preserved that old picture all these years and it now appears in bas relief on one bronze tablet on the north side of the new R. F. D. memorial monument standing in the center of the intersection of the two main streets of the village.

In the early days there was very little mail to carry. Only one or two days each week when the Battle Creek and Kalamazoo weekly papers, and the Michigan Farmer, came, was there a sack anywhere near full. But the boys had some hard work to do some of the time when the weather and roads were bad, and it cost more than half as much then for equipment and maintenance as now. Each carrier had to keep two horses, sometimes using one, other times, both.

The salary was but \$25 per month, in those early days, and each carrier had to pay about all his expenses. Hundreds of farmers used to wonder how the carriers managed to keep up and make both ends meet. Of course, living expenses were less and feed was much cheaper, but our hired man left a job that paid him \$18 per month clear profit. He had his board, lodging and other incidentals furnished. He was not married and his worries were few and far between. Soon after he became an R. F. D. carrier, he got married and started a home of his own. (Continued on page 481).

How Much Will \$10⁰⁰ Plow?

What \$10 worth of fuel plowed when used in an OilPull guaranteed tractor.

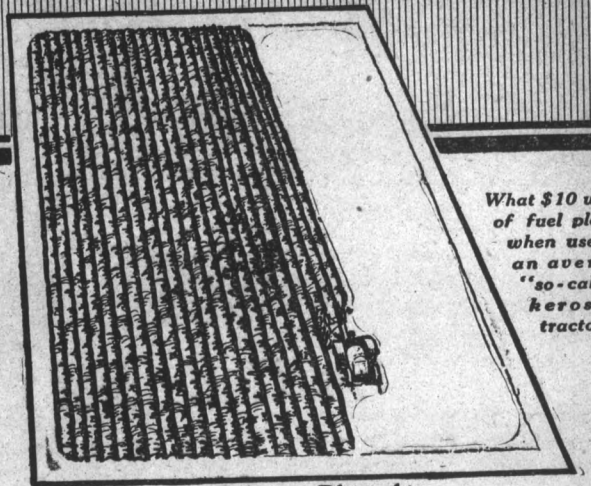


22 Acres Plowed

THE main reason why you buy a tractor is to produce greater crops at a larger profit. And the tractor that will do the work at the least cost is the tractor you want—provided of course that it has the strength and durability to give it long life.

Above we illustrate a comparison of operating costs—based upon actual official public tests. We take as an example an official demonstration in which were entered 29 of the best known tractors. In making the comparison, we, however, have considered only the 23 tractors entered as kerosene burners, eliminating the five gasoline entries, and as a basis have taken the average cost for an acre plowed. On the one hand, the OilPull plowed at a cost of 45 cents per acre—on the other the average cost of the 23 competing kerosene tractors was 66.27 cents per acre.

This gives the OilPull an advantage of almost one-third—or in other words, the OilPull proved that it is capable of doing one-third more work for the same fuel cost. And remember that we compare the OilPull with the so-called kerosene tractors only. Compared with gasoline tractors the OilPull will cut fuel costs in half.



15 Acres Plowed

What \$10 worth of fuel plowed when used in an average "so-called" kerosene tractor.

On the basis of the \$3.00 saved by the OilPull in plowing 22 acres, you can easily figure the saving in operating costs in the day after day, year after year operation. You can see that the saving in fuel alone will practically pay for the outfit while your OilPull is still a young machine. We can't say just what the life of an OilPull is because the first ones built ten years ago are still on the job.

Furthermore, what the OilPull has done in these public tests is what it is doing in the hands of owners everywhere. *The OilPull will plow an acre of ground at less cost than any tractor made—bar none.*

And not only has the OilPull proved this economy—its makers give you an absolute *guarantee in writing* that it will burn successfully all grades of kerosene under all conditions, and at all loads to its full rated brake horse power. *The OilPull is the only tractor that carries such a written guarantee.*

Four sizes of the oil burning, oil cooled OilPull can now be had—12-20, 16-30, 20-40 and 30-60 H. P. A post card request will bring you the OilPull catalog.

ADVANCE-RUMELY THRESHER COMPANY, Inc.

La Porte, Indiana
Battle Creek, Mich.



ADVANCE RUMELY

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Northern Grown Early Maturing Varieties

Adapted to the climatic conditions and short seasons of Michigan and other northern states. Your corn crop is important. Make it profitable by planting Isbell's improved, high-yielding varieties. You will be sure to harvest a good crop of sound, ripe Corn before frost. Write for Isbell 1919 Seed Catalog and FREE Seed Corn Samples. We specialize in the following leading sorts and many other varieties:

Isbell's First Choice—the best early yellow dent corn.
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Flint Corn and Ensilage Corn

Isbell's Seeds
As They Grow Their Fame Grows

S. M. Isbell & Co., 6100 Mechanic St., Jackson, Mich.



Save on Newspapers

Many rural readers have bought their daily and the Michigan Farmer in combination at a price that saved them money.

The Michigan Farmer—One Year Your Favorite Daily—One Year

On rural routes only at prices specified below in "Our Price" column.

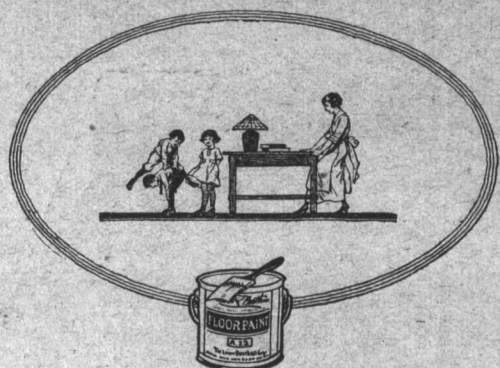
	Regular Price.	Our Price.
Free Press, Detroit.....	\$5.00	\$4.50
Journal, Detroit	5.00	4.50
Times, Detroit	4.00	3.50
Herald, Grand Rapids.....	5.00	4.50
Press, Grand Rapids	5.00	4.50
News, Grand Rapids	5.00	4.50
News-Courier, Saginaw ...	5.00	4.50
News-Statesman, Marshall.	4.00	3.25
Journal, Flint	5.00	4.50
Gazette, Kalamazoo.....	5.00	4.50
News, Cadillac	4.00	3.50
Enquirer, Battle Creek....	5.00	4.50
Evening News, Monroe....	4.00	3.50
Pioneer, Big Rapids	4.00	3.50
Blade, Toledo	5.00	4.50
News-Bee, Toledo	5.00	4.50

The above combinations give you an average saving of Fifty Cents.

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The Michigan Farmer, Detroit

Lowe's



This floor paint stands rough and scuff

Stands it, because it's made to stand it. Made of only the things that will stand it, and nothing else. It comes in eight practical purpose colors.

One coat is enough on old painted floors. Two coats for new. You can put it on one day and use the floor the next. Its name is Hard Drying, because it dries hard and stays hard.

Talk this Hard-Drying Floor Paint over with the Lowe dealer in your town. If none, let us know and we'll see there is one.

Send for booklet called, "Floor Paint Lessons, Four in All—Two Being Rather Good."

The *Lowe Brothers Company*

499 EAST THIRD STREET, DAYTON, OHIO

Boston New York Jersey City Chicago Atlanta Kansas City Minneapolis

Paints



"Beyond the Frontier"

I turned, and ran down the bank to where the fire yet glowed dully in the hollow, emitting a faint spiral of blue smoke, dug dirt up with my hands, and covered the coals, until they were completely extinguished. Then I crept back to the bluff summit, and lay down to watch.

The canoe rounded the curve in the shore, and headed straight across toward where I rested in concealment. Their course would keep them too far away from the little strip of sand on which we had landed to observe the imprint of our feet, or the pile of wood De Artigny had flung down. I observed this with an intense feeling of relief, as I peered cautiously out from my covert.

I could see now clearly the faces of those in the canoe—the dark, expressionless countenances of the Indians, and the three white men, all gazing intently at the shore line, as they swept past, a soldier in the bow, and Pere Allouez and Cassion at the stern, the latter standing, gripping the steering paddle. The sound of his rasping, disagreeable voice reached me first.

"This is the spot," he exclaimed, pointing. "I saw that headland just before the storm struck. But there is no wreck here, no sign of landing. What is your judgment, Pere?"

"That further search is useless, Monsieur," answered the priest. "We have covered the entire coast, and found no sign of any survivor; no doubt they were all lost."

"Tis likely true, for there was but small hope for any swimmer in such a sea." Cassion's eyes turned to the others in the boat. "And you, Descartes, you were in the canoe with the Sieur de Artigny, tell us again what happened, and if this be not the place."

The soldier in the bow lifted his head.

"I know little of the place, Monsieur," he answered gruffly, "though it would seem as if I recalled the forked tree yonder, showing through a rift in the fog. All I know is that one of the paddles broke in the sergeant's canoe, and over they went into the water. 'Twas as quick as that," and he snapped his fingers, "and then a head or two bobbed up, but the canoe swept over them, and down they went again. Sieur de Artigny held our steering paddle, and in an instant, he swung that way, and there was the lady struggling. I reached out and touched her, but lost hold, and then the Sieur de Artigny leaped overboard, and the storm whirled us into the fog. I saw no more."

"You do not know that he reached her?"

"No, Monsieur; the lady sank when I lost my grip; I do not even know if she came up again."

Cassion stood motionless, staring intently at the bluff. I almost thought he must have seen me, but there was no outcry, and finally he seated himself.

"Go on, round the long point yonder, and if there is no sign there we will return," he said grimly. "Tis my thought they were all drowned, and there is no need of our seeking longer. Pull on boys, and let us finish the job."

They rounded the point, the Pere talking earnestly, but the canoe was so far away I could not overhear his words. Cassion paid small heed to what he urged, but, at last, angrily bade him be still, and, after a glance into the narrow basin beyond, swung

the bow of the canoe about, and headed southward, the return course further off shore. The Indians paddled with renewed energy, and, in a few moments they were so far away their faces were indistinguishable, and I ventured to sit on the bank, my gaze still on the vanishing canoe.

So intent was I that I heard no sound of approaching footsteps, and knew nothing of De Artigny's presence until he spoke.

"What is that yonder—a canoe?"

I started, shrinking back, suddenly realizing what I had done, and the construction he might place upon my action.

"Yes," I answered faintly, "it—it is a canoe."

"But it is headed south; it is going away," he paused, gazing into my face. "Did it not come this far?"

I hesitated; he had furnished me with an excuse, a reason. I could permit him to believe the boat had not approached close enough to be signaled. It was, for an instant, a temptation, yet as I looked into his eyes, I could not tell the lie. More, I felt the uselessness of any such attempt to deceive; he would discover the fire extinguished by dirt thrown on it, and thus learn the truth. Far better that I confess frankly, and justify my action.

"The canoe came here," I faltered, my voice betraying me. "It went on around the point yonder, and then returned."

"And you made no signal? You let them go, believing us dead?"

I could not look at him, and I felt my cheeks burn with shame.

"Yes, Monsieur; but listen. No, do not touch me. Perhaps it was all wrong, yet I thought it right. I lay here, hidden from view, and watched them; I extinguished the fire so they could not see the smoke. They came so near I could hear their voices, and distinguish their words, yet I let them pass."

"Who were in the canoe?"

"Besides the Indians, Cassion, Pere Allouez, and the soldier Descartes."

"He was with me."

"So I learned from his tale; 'twas he who sought to lift me from the water, and failed. Do you realize, Monsieur, why I chose to remain unseen? Why I have done what must seem an unwomanly act?"

He was still gazing after the canoe, now a mere speck amid the waste of waters, but turned and looked into my face.

"No, Madame, yet I cannot deem your reason an unworthy one—yet wait; could it be fear for my life?"

"It was that, and that only, Monsieur. The truth came to me in a flash when I first perceived the canoe approaching yonder. I felt that hate rather than love urged Cassion to make search for us. He knew of your attempt at rescue, and if he found us here together alone, he would care for nothing save revenge. He has the power, the authority to condemn you, and have you shot. I saw no way to preserve your life, but to keep you out of his grip, until you were with your friends at Fort St. Louis."

"You sacrificed yourself for me?"

"Tis no more than you did when you leaped from the canoe."

"Pah, that was man's work; but now you risk more than life; you peril reputation—"

"No, Monsieur; no more, at least, than it was already imperiled. Cassion

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need never know that I saw his searching party, and surely no one can justly blame me for being rescued from death. One does not ask, in such a moment, who the rescuer is. I feel I have chosen right, Monsieur, and yet I must trust you to never cause me to regret that I am the wife of Monsieur Cassion."

To my surprise his face brightened, his eyes smiling, as he bowed low before me.

"Your confidence shall not be betrayed, Madame," he said gallantly. "I pledge you my discretion whatever circumstances may arise. There is no cur in the De Artigny strain and I fight my own battles. Some day I shall be face to face with Francois Cassion, and if then I fail to strike home it will be memory of your faith which restrains my hand. And now I rejoice that I can make your sacrifice less grievous."

"In what way Monsieur?"

"In that we are no longer entirely alone in our wilderness adventure. I have fortunately brought back with me a comrade, whose presence will rob Cassion of some sharpness of tongue. Shall we go meet him?"

"Meet him! a man, you mean? One rescued from the canoe?"

"No, but more likely to serve us a good turn—a soldier under Monsieur de la Durantaye, who has camp below at the portage to the Des Plaines. Out yonder I ran onto him, bearing some message from Green Bay—an odd fellow, but with a gun at his shoulder, and a tongue with which to tell the truth on occasion. Come, Madame, there is naught now you need to fear."

CHAPTER XXI.

We Decide Our Course.

WITH a feeling of relief in my heart, a sense that my reputation was safe, and that the good God had set the seal of His approval on the choice made, I accepted De Artigny's outstretched hand, and permitted him to assist me down the bank. The new arrival was just within the edge of the forest, bending over a freshly kindled fire, barely commencing to blaze, and beside him on the grass lay a wild fowl already plucked of its feathers. So intent was the fellow at his task, he did not even lift his head until my companion hailed him.

"Barbeau, here is the lady of whom I spoke—the wife of Monsieur Cassion."

He stood up, and made me a salute as though I were an officer, as odd a looking little man as ever I had seen, with a small peaked face, a mop of black hair, and a pair of shrewd, humorous eyes. His dress was that of a courier du bois, with no trace of uniform save the blue forage cap gripped in one hand, yet he stood stiff as if on parade. In spite of his strange, uncouth appearance there was that in his face which won my favor, and I held out my hand.

"You are a soldier of France, Monsieur de Artigny tell me."

"Yes, Madame, of the Regiment Carignan-Salliers," he answered.

"I wonder have you served long? My father was an officer in that command Captain la Chesnayne."

The expression on the man's face changed magically.

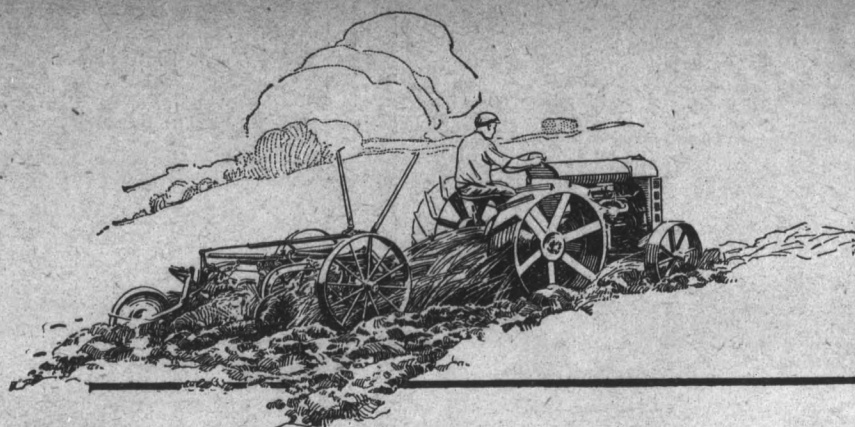
"You the daughter of Captain la Chesnayne," he exclaimed, the words bursting forth uncontrolled, "and married to Cassion—how can this be?"

"You knew him then—my father?"

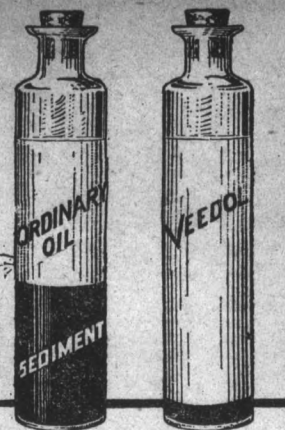
"Ay, Madame; I was with him at the Richelieu, at the village of the Mohawks; and at Bois le Blanc, where he died. I am Jacques Barbeau, a soldier for twenty years; did he not speak to you of me?"

"I was but a girl when he was killed, and we seldom met, for he was usually on campaign. Yet what do you mean by thus expressing surprise at my marriage to Monsieur Cassion?"

He hesitated, evidently regretting (Continued on next page).



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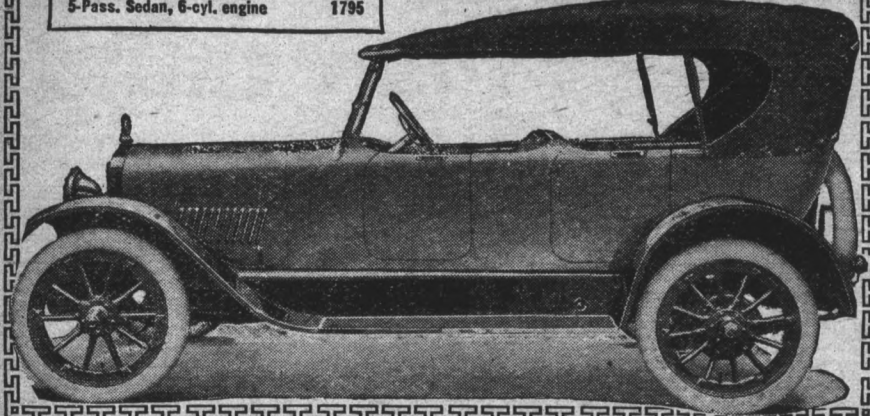
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his impulsive speech, and glancing and bidden to accompany him on this journey to Fort St. Louis."

De Artigny.

"Monsieur, Madame, I spoke hastily; it was not my place."

"That may be true, Barbeau," replied the Sieur grimly, "yet the words have been said, and the lady has a right to have them explained. Was there quarrel between her father and this Francois Cassion?"

"Ay, there was, and bitter, although I know nothing as to the cause. Cassion, and La Barre—he whom I now hear is Governor of New France—were alike opposed to Captain la Chesnayne, and but for reports they made he would have been the colonel. He struck Cassion in the mess tent, and they were to fight the very morning the Iroquois met us at Bois le Blanc. 'Twas the talk of the men that the captain was shot from behind."

"By Cassion?"

"That I cannot say; yet the bullet entered behind the ear, for I was first to reach him, and he had no other enemy in the Regiment Carignay-Salliers. The feeling against M. Cassion was so strong that he resigned within a few months. You never heard this?"

I could not answer, but stood silent with bowed head. I felt De Artigny place his hand on my shoulder.

"The lady did not know," he said gravely, as though he felt the necessity of an explanation. "She was at school in a convent at Quebec, and no rumor reached her. She is thankful to you for what you have said, Barbeau, and can trust you as her father's friend and comrade. May I tell him the truth, Madame? The man may have other information of value?"

I looked at the soldier, and his eyes were grave and honest.

"Yes," I answered, "it can do no harm."

De Artigny's hand was still on my shoulder, but his glance did not seek my face.

"There is some low trick here, Barbeau," he began soberly, "but the details are not clear. Madame has trusted me as a friend, and confided all she knows, and I will tell the facts to you as I understand them. False reports were made to France regarding Captain la Chesnayne. We have not learned what they were, or who made them, but they were so serious that Louis, by royal decree, issued order that his estates revert to the crown. Later La Chesnayne's friends got the ear of the King, no doubt through Frontenac, ever loyal to him, and by royal order his estates were restored to his ownership. This order of restoration reached Quebec soon after La Barre was appointed Governor, and was never made public. It was suppressed by someone, and La Chesnayne was killed three months later, without knowing that he had won the favor of the King."

"But Cassion knew; he was ever hand in glove with La Barre."

"We have cause to suspect so, and now, after listening to your tale, to believe that Captain la Chesnayne's death was part of a carefully formed plot. By accident the lady here learned of the conspiracy, through overhearing a conversation, but was discovered by La Barre hiding behind the curtains of his office. To keep her quiet she was forced into marriage with Francois Cassion one armed Italian—'twould be one time

"I see," commented Barbeau shrewdly. "Such marriage would place the property in their control by law. Had Cassion sought marriage previously?"

His eyes were upon me as he asked the question, and I answered him frankly.

"He visited often at the home of my uncle, Hugo Chevet, and, while he never spoke to me directly of marriage, I was told he desired me for his wife and at the palace he so presented me to Monsieur La Barre."

"On pledge of Chevet, no doubt. Your uncle knew of your fortune?"

"No; he supposed me penniless; he thought it a great honor done me by the favorite of the Governor's. 'Twas my belief he expected some reward for persuading me to accept the offer."

"And this Chevet—what became of him?"

"He accompanied us on the journey, also upon order of Monsieur la Barre, who, no doubt, thought he would be safer in the wilderness than in Quebec. He was murdered at St. Ignace."

"Murdered?"

"Ay, struck down from behind with a knife. No one knows who did it, but Cassion has charged the crime against Sieur de Artigny, and circumstances are such that he will find it difficult to prove his innocence."

The soldier stood silent, evidently reviewing in his mind all that had been told him, his eyes narrowed into slits as he gazed thoughtfully at us both.

"Bah," he exclaimed at last, "the riddle is not so hard to read, although, no doubt the trick has been well played. I know Governor La Barre, and this Francois Cassion, for I have served under both, while Monsieur la Chesnayne was my Captain, and friend. I was not always a soldier, Madame, and once I sought holy orders, but the flesh was weak. However, the experiment gave me education, and led to comradeship with those above me in station—discipline in the wilderness is not very rigid. Many a night at the campfire have I talked with my captain. And I have heard before of this Sieur de Artigny, and of how loyally he has served M. de la Salle. Monsieur de Tonty told the tale to M. de la Durantaye, mayhap a month ago, and I overheard. So I possess faith in him as a gallant man, and have desire to serve you both. May I tell you what, in my judgment, seems best for you to do?"

I glanced at De Artigny, and his eyes gave me courage.

"Monsieur you are a French soldier," I answered, "an educated man also, and my father's friend. I will listen."

His eyes smiled, and he swept the earth with his cap.

"Then my plan is this—leave Monsieur Cassion to go his way, and let me be your guide southward. I know the trails, and the journey is not difficult. M. de la Durantaye is camped at the portage of the Des Plaines, having but a handful of men to be sure, yet he is a gallant officer, and no enemy to La Salle, although he serves the Governor. He will see justice done, and give you both safe convoy to Fort St. Louis, where De Tonty knows how to protect his officers. Faith, I would like to see Francois Cassion try to browbeat that one armed Italian—'twould be one time



he would meet his match."

De Artigny laughed.

"Ay, you are right there, my friend. I have felt the iron-hook, and witnessed how he wins his way with white and red. Yet he is no longer in command at Fort St. Louis; I bring him orders now from Sieur de la Salle bidding him not to interfere with the Governor's lieutenants. 'Tis the Chevalier De Baugis with whom we must reckon."

"True, he has control and men enough, with Cassion's party, to enforce his order. And he is a hothead, conceited, and holding himself a bit better than others, because he bears commission in the King's Dragoons. 'Tis said that he and De Tonty have had many a stiff quarrel since he came, but he dare not go too far. There are good men there ready to draw sword if it ever came to blows—De Tonty, Boisrondet, L'Esprance, De Marle, and the Algonquins camped on the plain below. They would be tigers if the Italian spoke the word; while I doubt not M. de la Durantaye would throw his influence on the side of mercy; he has but small love for the Captain of Dragoons."

I spoke quickly, and before De Artigny could voice decision.

"We will accept your guidance, Monsieur. It is the best choice, and now the only one, for the time is past when we can expect the return of the canoes. Can we not at once begin the journey?"

It was an hour later, after we had eaten, that we left the bluff, and turned westward into the great woods. Barbeau led the way, moving along the bank of a small stream, and I followed with De Artigny close behind. As we had nothing to carry, except the soldier's rifle and blanket, we made rapid progress and in less than half an hour we came to the Indian trail, which led southward from Green Bay to the head waters of the Des Plaines. It was so faint and dim, a mere trace through forest depths, that I would have passed it by unseen, but both my companions were woodsmen, and there was no sign their trained eyes overlooked.

Once in the trail, however, there was no difficulty in following it, although it twisted here and there, in the avoiding of obstacles, ever seeking the easier route. Barbeau had passed this way before, and recalled many a land-mark, occasionally turning, and pointing out to us certain peculiarities he had observed on his journey north. Once he held us motionless while he crept aside, through an intervening fringe of trees to the shore of a small lake, coming back with two fine ducks dangling from his shoulder.

Before dark we halted in a little opening, the grass green underfoot, and a bank of trees all about, and made night camp. There was water near at hand, and the fire quickly built gave cheer to the scene, as the men prepared supper. The adventures of the day had wearied me, and I was very content to lie on Barbeau's blanket, and watch them work. While the soldier cooked, De Artigny swiftly erected a shelter of boughs, within which I was to pass the night. After we had eaten, I retired at once, yet for a long time could not sleep, but lay looking out at the two men seated before the fire smoking. I could hear their voices, and scraps of conversation—De Artigny telling the tale of the exploration of the great river to its mouth in the salt sea, and Barbeau relating many a strange adventure in the wilderness. It was a scene long to be remembered—the black shadows all about, the silence of the great woods, the sense of loneliness, the red and yellow flames of the fire, and the two men telling tales of wild adventure amid the unknown.

At last they grew weary also, and lay down, pillowed their heads on their arms, and rested motionless. My own eyes grew heavy, and I fell asleep.

(Continued next week).

"By the Way"

EFFICIENCY.

The bravery and simplicity of the native soldiers of India is proverbial in the British army. One of these, in the campaign in German East Africa, was in charge of a railway station, where he was besieged by the enemy. This was the wire he sent to headquarters:

"One hundred Germans attacking station. Send immediately, one rifle and one hundred rounds of ammunition."

GETTING WISE AT LAST.

"We played fool," declared the crown prince. "I see it now."

"Huh?"

"We had the whole world to pick a fight with."

"Well?"

"And look at the crowd we picked out."

COUSIN BILL SAYS:

"When a man thinks he has left his watch at home and takes it out of his pocket to see if he has time to go back for it, I should call that man absent-minded."

SO SAD.

"That fellow was an impudent fraud. How did he manage to wheedle money out of you?"

"Oh, John, he told me such a sad, pitiful tale about his poor wife who was a widow with six children."

COULD HEAR THEN.

Tom—"Are you deaf to my pleadings?"

Eva—"I am."

Tom—"But what if I were to offer you a diamond ring?"

Eva—"Oh, I'm not stone deaf."

WHY SHE STOPPED.

Dunne and Harrison ran against each other in the primaries for nomination for mayor of Chicago some time ago. Mr. Harrison has one child, a daughter of fifteen; Dunne has ten children of assorted ages. A few days before the primaries young Miss Harrison asked her mother: "Mamma, do you pray for father's nomination?"

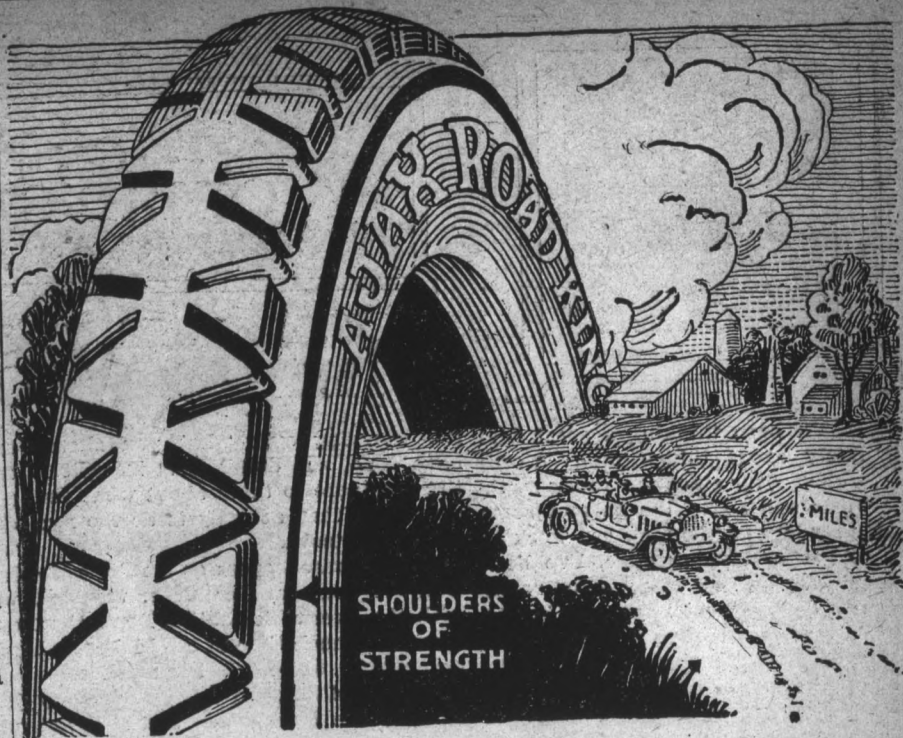
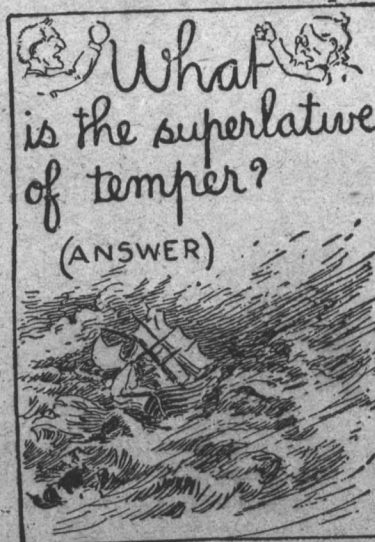
"Certainly I do, my dear; and I hope you do too."

"Well," replied her daughter, "I did at the beginning, but I stopped after a while."

"Stopped?" asked the shocked mother. "Why did you stop?"

"Why, I thought about all those ten little Dunes doing the same thing, and I just concluded I had no chance."

Today's Riddle



Always more miles on Ajax tires

MORE and more the farmer turns to Ajax as the tires to save him miles and money.

"More miles!" is every Ajax user's verdict.

AJAX ROAD KING

Ajax Road King yields more mileage because more mileage is built into it. The special Ajax feature—Ajax Shoulders of Strength—braces and reinforces the tread. See the picture of the Ajax Road King. Note how the Shoulders of Strength put more tread on the road—how they give more strength where strength is needed.

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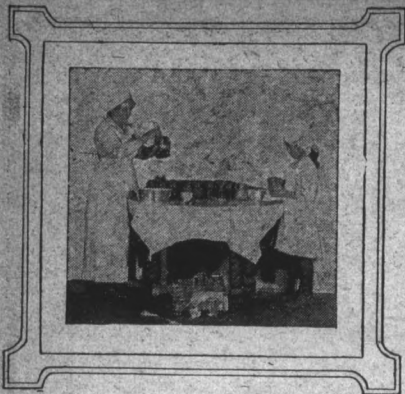
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Woman's Interests

Things Worth While



I HAVE been thinking a great deal lately about things really worth while. Ever since the young mother wrote and asked the help of some older readers in planning her work so as to get everything done, I've been speculating on how many of us really plan to do the most important things.

Of course, none of us ever get everything done, whether we are housekeepers or farmers, or clerks. One woman tells me she never sees a day that she doesn't plan to do just four times as much as any one person could do, and while that seems like rather pretentious planning, many of us never see a day that we couldn't find at least four times as much work waiting for us as we ever get done. I have been wondering about that feature of it, the amount of work we see and our state of mind concerning it. Don't some of us conscientious housekeepers see too much? Isn't that what tires us? Honestly, is it the quantity of work you have done that keeps you tossing about nights, or

the worrying over what you should have done, and didn't do? Doesn't it tire you more to think about what you should do, than actually to do the regular day's tasks.

Aren't housekeepers as a rule, especially if there are children, troubled with the overwork habit? Don't they spend too much time at hard labor and not enough at play? No one knows better than I that you could work every hour of the twenty-four and still not get everything done. But on the other hand, haven't you found when you did plan to get a little play spell that you worked all the better for it? You could work with a better spirit while preparing for the holiday, and after it you came back with quickened wits and a new zest for the ordinary, humdrum duties.

It has been some time since I was a country school teacher, but I still have a pleasant memory of one home in which I lived a year. And the memory is not because of the wonderful cook-

ery or perfect housekeeping, though no one could find fault with them. It was a busy farm home, with three active children, and we all know that spells work. But every day, rain or shine, haying, harvest or slack time, there was a half hour for a "sing." Everyone got around the little five-octave organ and someone played while everyone sang. There were no Carusos nor Melbas in the group, but the singing pleased us all the better because we did it ourselves and we all felt it. We sang because we liked to and the words had a definite meaning to us. No jazz nor "Hawaiian Dreams," in fact, no ragtime of any sort. So you see it was quite a while ago. For the most part we sang gospel hymns with an occasional patriotic song from the old school "Knapsack." Possibly we sang off key, I know one of us did, and perhaps no impresario would have stopped in the road to listen, but anyhow we enjoyed the brief rest from work and we got something which took us

through another day in better spirit.

You may not care for the "sing." But isn't the idea of taking a half-hour off worth something? Perhaps you would rather read, or get out doors and walk, or sit down and rock and crochet. Or it may be a nap is what you need. If you are one of those uncounted women who has secretly pined to do some special thing and never found the time, why not take a half-hour daily for your "fad?" It is surprising how much you can accomplish in thirty minutes daily. That means three hours a week, nearly a half-day.

We lay too much stress on what we term necessities. Many of the necessities are so only in name. We could get along without quite a number of them. And we pay too little attention to the really worth-while things of the mind and soul. Resolve to give yourself a daily play spell, and you will find the hours spent at hard labor will be easier.

DEBORAH.

*Inspired by Paris; Made
In America*



*Hats Possessing Originality
and Charm*



THE slogan of the designers of the hats this season seems to be "a hat for each particular wearer." There is a tailored off-the-face hat, and the turban for the pretty profile, the modified tam for the youthful wearer, the "scoop" brimmed and the transparent brimmed hats for dressy wear, and the newest thing in the milliner's realm is

the low-crowned sailor with many loops of ribbon, flowers, foliage or gorgeous cherries tucked away under the brim at the back, the latter making a splendid all-season hat. Many hats show a combination of georgette crepe with straw or straw braid, and in some of the smartest all-black hats rolling brims are faced with black satin.

This trio of charming spring hats are particularly suited for early spring wear. The navy satin hat at the left has an oddly cut brim of straw braid. A quill of the same shade is the only trimming. In the center is a spring creation, the brim of which is a combination of navy straw braid and satin. The crown is formed of inter-lacing of navy ostrich, and in the squares thus formed are tiny clusters of vari-colored rosebuds. The hat which follows somewhat the lines of the tam is a clever combination of fine navy straw braid and satin, with the wired loop and ends of satin constituting the only trimming; a smart hat to wear with the tailored suit.

When Children Cannot Attend School

By Janet Thomas Van Orsdel

THERE is scarcely a district in the country that has not some child, or children who, for some reason or other cannot attend the public school. It may be that some physical disability makes it impossible for him; perhaps mental deficiency debar him from entering classes with other children; or, if he is a very little child, it may be that he is too far from the school to walk there and back. Whatever the cause, the child who does not attend school will be seriously handicapped all through life unless an adequate substitute for the school education is provided. In that case his present misfortune may eventually prove to be his good fortune, provided the

home instruction is made all that it is possible to make it.

Mothers may feel that it is out of the question to start him in the paths of learning themselves. But advanced knowledge is not so necessary as is an understanding of the child, and who should understand a child better than his own mother? Nor does it take a great amount of time. Once a mother gets well started in the teaching of her child she will not find it difficult; very likely she will become fascinated with the work. It is a wonderful thing to watch the daily mental development of

a child. The pity of it is that so few mothers have the best opportunity for observing it.

The thing that will bother most the mother who knows nothing about teaching is the method to employ. The old a, b, c method has been almost discarded, because a, b, c means absolutely nothing to a little child. The "work and play" method shows the best results according to mothers who have tried it. It would doubtless be best also for schoolroom instruction were it possible to employ it under present conditions in the schools. However,

it is not schoolroom education in which we are interested just now.

The work and play method is really nothing but guided play. All of the child's amusement is made an aid to his education. He is not told that he is learning things, no set task is given him. He absorbs knowledge by the use of the games which he is led to play, by the answered question, by the suggestion here and there, as a sponge absorbs water. The instruction that goes with the games all seems incidental and a part of the play.

Even a tiny child can learn the names of colors, learn them understandingly as he looks at a ribbon, at the grass, at the sky. This will train

the eye and the powers of observation. If he knows, for example, the color red, and mother some day writes it on the blackboard, in red chalk it will take him only a little while to recognize the written word as readily as he does the color itself. If she helps him when he is playing with his blocks it will soon be an interesting part of his play to spell the word red.

Games will teach the numbers. Let a child play with a box of toothpicks and have him sort them into piles of two. That is nothing but fun. But he learns how many two are. Later on he is delighted to become acquainted with the figure and the word two. He learns what one-half is when he divides his apple evenly with his playmate and he will soon understand the figure one-half.

Pictures of birds and animals in the natural colors are of great educational value. Children learn the names of these because they want to and they are eager to have stories told about them.

The reading of stories and verse to children and the telling of stories is one of the leading helps in this method of education. There is no limit to what a taste for the right literature may do for a child, and especially for one who is any way handicapped in life's race. In time, the mother may have the children read to her for her entertainment, not in the recitation of a lesson. They will forget themselves and do their very best in reading for another person's pleasure.

There are a hundred suggestions that might be given, but in so brief an article only an idea of the method can be presented. Every mother who takes up the work will find suggestions continually coming to her and she will herself develop, although in a different way, almost as rapidly as does the child.

A word about the child who seems mentally deficient. In too many cases no effort is made to educate such a child. This is a culpable mistake. If he had an atrophied muscle it would surely be given nourishment and exercise in the hope of developing it. Very often a child "not bright" can be drawn out little by little until finally he ceases to be subnormal. And he is far more likely to respond to any such efforts right in the home circle than he is if placed among strangers. Colors and bright pictures of animals, birds and flowers often appeal to such a child more than anything else. But it will rest with the mother-teacher to ascertain what particular thing is most likely to interest the child and start the raising of the curtain that obscures the mind. Something will probably do it and infinite patience must be exercised until that something is found.

It is interesting and inspirational to know what mothers have actually and easily accomplished by this method. A little girl, now five years old, had lost the power of speech through illness when she was a wee baby. Her mother began teaching her by the work-and-play method while she was still a baby and gradually drew her out until she could speak. She recovered fully the power of speech before she was four years old and is ahead of the always normal child in every way.

The three-year-old brother of this little girl can write on the typewriter. While this may seem precocious, still is it any more so than when a child of the same age can spell words with his alphabet blocks? It is simply a different method of playing very nearly the same game.

The three-year-old son of Mrs. Wright knows every color and can read many words, while his big sister of ten has been writing verse for several years—and the verses are good. Mrs. Wright has used the work and play method with both of these children.

Our character is our will; for what we will we are.—Archbishop Manning.

Don't Scold Your Wife

In the first place a good many wives won't be scolded.]

Then again, the majority do not deserve to be.

Furthermore, wives as a general thing, are more nearly living up to their responsibilities than are the husbands.

Besides scolding anybody is a bad practice and generally result in illwill, bad feeling, and a lot of other disagreeable things.]

Better, a great deal, buy her

Lily White

"The flour the best cooks use"

and give her a real chance to show you what she can do in the way of providing you with good things to eat.

She can do it with LILY WHITE FLOUR, and don't you forget it.

And you will discover that you have one of the best cooks in the land.

In fact you will have to watch yourself or you will be bragging just a little bit about what good things you have to eat at your house.

Now bragging in a way is all right. For instance tell your wife first what a good cook she is and how much you appreciate her, and your friends afterwards.

Don't tell your friends and depend upon them to tell your wife; they might forget, and your wife deserves to be told—by you.

Don't scold her. Buy her LILY WHITE FLOUR instead.

VALLEY CITY MILLING COMPANY.

GRAND RAPIDS, MICHIGAN

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Any of the patterns illustrated may be secured by sending order to Pattern Department, Michigan Farmer, Detroit, enclosing the amount set opposite the patterns wanted.



No. 2751—Ladies' Dress. Cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5½ yards of 36-inch material. Width of skirt at lower edge is 1½ yards. Price 10 cents.

No. 2764-2761—A Trim Business Costume. Waist 2764 cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. It requires 2¾ yards of 36-inch material for a medium size. The skirt 2761 is cut in seven sizes, 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 24 will require 2¾ yards of 44-inch material. The skirt measures a little more than 1¾ yards at the foot. Two separate patterns, 10 cents for each pattern.



No. 2320—Girls' Dress with or without jumper. Cut in five sizes, 4, 6, 8, 10 and 12 years. Size 10 requires 2¾ yards of 44-inch material for the dress, and 1¾ yards for the jumper. Price 10 cents.

No. 2759—Girls' Dress. Cut in four sizes, 8, 10, 12 and 14 years. Size 12 will require 4½ yards of 27-inch material for the dress and 2¼ yards for the jumper. Price 10 cents.



No. 2709—Ladies' Dress. Cut in sev-

en sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 6½ yards of 36-inch material. The skirt measures about 2¼ yards at the foot. Price 10 cents.

No. 2713—Ladies' Combination. Cut in four sizes: Small 32-34; medium 36-38; large 40-42; extra large 44-46 inches bust measure. Size medium will require 2¾ yards of 27-inch material. Price 10 cents.



No. 2767—Ladies' Combination. Cut in four sizes: Small 32-34; medium 36-38; large 40-42; extra large 44-46 inches bust measure. Size medium requires 3½ yards of 27-inch material. Price 10 cents.

No. 2592—Ladies' House Dress. Cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires five yards of 44-inch material. The dress measures about 2¾ yards at the foot. Price 10 cents.

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Some Modern Food Problems

IN thinking of calories the easiest way to think of them is as one would of a measuring cup. A cup is the standard measure of milk, sugar, flour, etc., in the average kitchen. A calorie is the measure of the heat furnished by the food as it is burned in our bodies. To get through with our work in the best of health, the average worker needs about three thousand calories daily. That is, the adult man worker, while women require a little less than the man.

It would be easy to measure out three thousand cups of milk or flour, for all we need do is to scoop them up. It is just as easy to measure calories, if we know how many calories a certain amount of food contains. A tablespoonful of sugar yields one hundred calories, a fourth of a cup of light cream furnishes the same amount, while it takes two-thirds of a cup of milk to give one hundred calories. An egg and a half gives one hundred calories, as does one-half ounce of butter, one baked apple, one large banana or large orange, four small, thin slices of bacon, one ordinary slice of bread, two small muffins, one medium baked potato or a half-cup of mashed or scalloped potato.

Lists of one hundred calorie portions have been prepared by several authorities and can be secured by any house-

keeper who is interested enough in the subject to care to go into it deeply. In this article it would be impossible to give more than an idea of how the diet can be measured. If you know that two-thirds of a glass of milk, meaning a glass which holds a half-pint, will give you one hundred calories, a slice of bread and a half ounce of butter will give two hundred more, a baked apple another hundred, and four slices of bacon another hundred, it becomes a simple problem in addition to find out how many calories you are getting.

For dinner, if you are a busy farmer's wife, you will probably not make soup as an extra course. It is more likely to be the chief dish. Three-fourths of a cup of bean or pea soup makes one hundred calories, one-half a cup of cream soup, and a cup of clear soup. If you have hamburger steak a small pat will give you one hundred calories, a half-cup of Irish stew, a small serving of roast ham or an ordinary serving of boiled ham, a small serving of beef and about an ounce of chicken are needed for the one hundred calories. You will probably have pie for dessert. A piece of fruit pie about one and a half inches wide at the crust, or of pies such as lemon, cream, and custard one inch at the edge will give you one hundred calories.

Knowing how much of various foods is required to give us one hundred calories, it becomes a simple thing indeed to figure out a proper amount of food.

SEE that your child receives plenty of fresh air and exercise. The body needs plenty of systematic exercise in the open air. A healthy body and healthy brain go hand in hand, and one seldom finds one without the other. See that the child's sleeping-room is well ventilated, so that it will not be poisoned by foul air. A healthy start in life means health, wealth and happiness in later years. See that your child lacks none of these opportunities for development. If the child is frail or does not learn readily, look for a cause. There are many minor ailments and defects, the correction of which may mean the turning point in the life of your child. The best is none too good for him. See that no stone is left unturned in bringing the child to a healthy maturity, and you will be astonished at the results. Do not neglect the child if he seems stupid. That is the time he needs attention. Any child who is weak or does not learn readily should be taken to a competent physician, who can often find defects the correction of which will make the child strong and robust, both mentally and physically.

—Michigan Public Health Bulletin.

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Heats Entire Home With One Register!

No more good, hard earned dollars going up the flues of stoves or grates while you and your family sit and shiver. The Williamson Pipeless Furnace—

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Without cost or obligation to me please send book describing the Williamson Pipeless Furnace.

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Address.....

Suppose you want to eat a breakfast of eight hundred calories. You start it with a baked apple, follow with an ordinary serving of oatmeal, about a cup and a quarter, on which you have sprinkled a tablespoon of sugar and poured a quarter of a cup of cream. You have four hundred calories, apple, one hundred; oatmeal, one hundred; sugar and cream each one hundred calories. Now you eat an omelet, made with two small eggs, two small gems of either cornmeal or graham flour, spread with a half-ounce of butter, and you have three hundred more, the gems or biscuit furnishing one hundred calories and the omelet and butter each one hundred. Two-thirds of a cup of milk can make up the other one hundred calories. You can drink this, or use it with your cereal and take the cream for your baked apple.

For lunch you might try macaroni and cheese or rice and cheese, a half cupful of either furnishing one hundred calories. Two cookies will give

If you are interested and wish to know where to write for a list of one hundred calorie portions, addresses will be furnished you if you send a self-addressed and stamped envelope to the editor of this department.

FROM ONE HOUSEKEEPER TO ANOTHER.

Have you a furnace in your home and some side wall registers, and do you see marks on the wall paper just above the registers? Try this plan: Put up a glass rod such as is used in the bath-room for towels, and you will find that anyone standing in front of the register will rest their hands on the rod and so save the wall paper. A brass or nickel rod placed just at the bottom of the register makes a good place to warm one's feet, and either of these rods will make a handy place to dry small articles.—Mrs. E. A. F.

Farmers' wives often have to keep a meal waiting after it is ready to serve, as the men cannot always leave their work at a set time. Vegetables may be kept hot without being dried, by placing the kettle or granite basin in which they are cooked, in a dishpan or large pan or milk pail of boiling water and keep covered closely.—Mrs. L. T. F.

When ham has become hard and salty, slice and place in a pan of buttermilk for a few minutes, then rinse and fry as usual. You will find that this has freshened it wonderfully.—Mrs. J. R. D.

Draining Farm Lands

(Continued from page 462).

at work, both producing cold and one administering to the other. The remedy is to destroy this action, to break the line of communication—lower the water table by deeper drainage; remove the water of attraction to such a depth that evaporation cease.

Increased depth reduces the power of attraction rapidly; if we remove the water by drainage to a depth of four feet below the surface we have allowed eighteen inches for attraction and still have thirty inches for defence against evaporation.

Water taken from a depth of four feet is three degrees warmer than at thirty inches.

Both observation and actual result seems to sustain the fact that nothing less than four feet will be sufficient.

We are informed, and the writer has observed that plant roots will penetrate the ground to a depth of several feet, and the better the soil is prepared and drained the stronger and more profuse are the roots; we have also observed the scrubby, dwarf, sickly appearance of plants trying to live and grow in wet, sour and cold ground.

One more answer to the argument against deep drainage in clay soil: A hole bored into the clay four or five feet and covered, will fill with water up to the level of the water in the adjacent soil. How can the water get into this hole and not into the tile?

An imprint of a horse's foot will hold water like a basin. Why? Because the clay is puddled. Drain your subsoil and the clay will not puddle and the water will be absorbed from below. Drain the ground slightly below the bottom of the hole and the water will disappear.

That hard sticky and tenacious clay are impervious to water is erroneous; if you observe closely the excavation of clay formations you will find that its structure consists of layers separated by thin layers of sand and gravel and sometimes by rusty layers of decayed roots.

From observation and study of the subject of drainage, I assert that there is no earth or clay so dense or tenacious in its natural state that will resist the absorption, penetration and filter of rain water into a tile drain five feet or more in depth. The action of drainage will begin at once; the re-filled trench will start to take the water from the upper strata of the soil and carry it down through the loose earth in the trench to the tile and the connection and formation of channels and arteries of drainage will continue to deepen, broaden and improve.

The place for the water to enter the tile is not through the body but at the lower half of the joints; the upper half should be sealed to prevent dry sand and washed earth to enter and fill the tile. Remember the hour-glass, how small the aperture and how persistent its action.

If the tile are properly laid to a true grade, a fall of a few inches in one-thousand feet is sufficient, but the smaller the fall the more care in the laying of tile and protection of joints.

In laying out a system of drainage every case requires its individual treatment, and from the time the first stake is driven until the last tile is covered it requires care, judgment and skill.

In cases where the expense is too great to complete the whole system at once, the work should be so planned that no part is lost or doubled up in the future, for instance, if laterals run parallel a certain distance apart, every other line may be left out the first year; in this way the benefit derived will pay for the work as it proceeds. Well-drained land resists prolonged drought much better than undrained.

These Letters Tell the Users' Stories In Their Own Words—Read Them

Mt. Pleasant, Mich.
With the Martin we dug 60 rods, 2 feet deep, in 1 hour and 30 minutes, using 3 horses and 2 men, and after putting in the tile filled it up in 30 minutes.
THOMAS HUTCHINGS.
R. F. D. No. 3.

Green Bay, Wis.
The Martin: We had \$200 worth of flat land and always when it rained the water stood on the land until it soaked into the ground and consequently the land kept soft and too wet to work.
Before ditching we could not get over from \$15 to \$20 per acre for our land. After ditching and getting the land into shape for cultivation, it is worth \$35 an acre. The water rushes through these ditches when it rains and so water remains standing on the land.
I have promised myself great results from the machine and I am glad to say I was not mistaken in it.
Sincerely yours,
M. BODENHEIMER.

Sold on 10 Days' Trial

Uniontown, Ala.
My Manager, Mr. Tucker, pronounced the implements a great success in ditching, especially hillside and terrace ditching. He tells me, with four good mules the Martin and two men he can do more ditching in one day than 100 men can with picks and shovels. I could not be made to part with my ditchers for any consideration.
Respectfully,
G. B. JOHNSON.

Remember, the Martin is not a big, heavy, expensive machine. Every farmer in America can afford to own one. It will do your farm Ditching for open drainage or irrigation, Tiling, Terracing, Road Making, Filling, Leveling, and it builds Dikes, moves Snow, cleans out weed-clogged Ditches, does every conceivable dirt-moving job.

I Want To Prove To You That You Can Absolutely Insure Against Crop Failure

Get This Free Book Now

THERE is no need trusting to the luck of the season if you own one of these wonderful machines. Read the letters reproduced on this page. We have thousands of such letters from Martin users in every state. They tell the story of the Martin better than we can tell it. Get full story by sending for our free book.



Model 20

THE Martin
O.D. & CO. REGISTERED

Farm Ditcher, Terracer, Road Grader

Reversible, adjustable; no wheels or cogs. All steel. Made in 2, 4 and 6-horse and tractor sizes. Economical and easy to handle. No farm or ranch outfit complete without a "MARTIN."

Get the Full Story—Insure Against Crop Failure—Write For the Free Book

Don't turn away from this page in your paper without sending me your name. I will show you as many letters from owners as you want to see and will tell you many interesting facts about the machine. Writing to me commits you to nothing. It only gives me the chance to tell you more about the wonderful tool that can not be told in an advertisement.

W. A. STEELE, Pres. and Gen'l Mgr.
OWENSBORO DITCHER & GRADER COMPANY
Box 1015 Owensboro, Kentucky

Leesville, S. C.
I like the MARTIN fine. I terraced about 200 acres of land in two days. It would have taken 20 hands a week to do the work.
Yours truly,
F. A. BARR.

Arkville, New York.
I have tried the Ditcher in roots, stones and dirt and I cannot say too much in its praise.
It will do the work of 20 men easily in the Catskill Mountains of New York.
Yours very truly,
R. H. MOLYNEAUX.

Dear Sirs:—
While conducting a tractor demonstration at the University of Arizona, The Yuba tractor people appeared on the scene without a load for their tractor. I discovered one of your ditchers at the Roundest Machine Company, which I borrowed to use as a load on the Yuba 40 H. P. Tractor.
We dug an irrigation ditch about 5 feet deep, completing the ditch in about four runs, plowing some soft caliche, which is about as hard as our shale-like limestone.
We pulled a large chain in two, and straightened several links in this same chain. Your ditcher stood the strain perfectly and came out without apparent damage. Yours very truly,
JAS. A. PARRA,
Agricultural Engineer.

GEHL Ensilage Cutters

Hold the Record for Strength and Capacity

GEHL Cutters are solidly built. All steel frame and triple construction with five long well babitted bearings on the main and blower shafts insure great strength and light running qualities. Records show that a GEHL Cutter will cut more silage with a given amount of power than any other cutter of its size on the market. You want a cutter that runs smoothly, can't clog and will stand up year after year under the terrific strain of ensilage cutting. You get all this—and more—in the GEHL Cutter.

These big features put GEHL Cutters in the lead:

All steel frame; low feed table; triple construction; positive safety device; extra big, roomy throat; automatic feeding device; no man required at feed table of GEHL Cutters; six-arm blower that simply can't clog and can be regulated to height of silo; best knife adjustment; independent control of blower and cutter head speed.

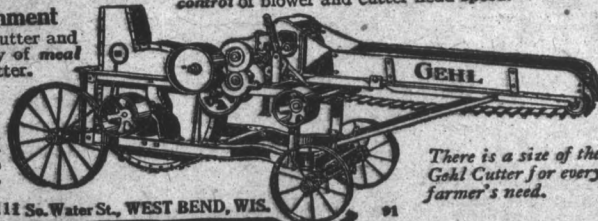
GEHL Alfalfa Attachment

fits any GEHL Ensilage Cutter and produces a better quality of meal than any other alfalfa cutter.

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showing all sizes of GEHL Cutters. It gives full details and explains how and why the GEHL is the best cutter money can buy. Get this catalog before you buy a cutter. WRITE TODAY.

GEHL BROS. MFG. CO., 111 So. Water St., WEST BEND, WIS.



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Sent for two subscriptions, or one subscription at 35 cents.

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OUR PRICE ONLY \$1.60

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Michigan Farmer, 1 yr., wk.\$1.00
Breeder's Gazette, wk. 1.50
Woman's World, mo.50
American Boy, mo. 2.00

Regular price\$5.00

OUR PRICE ONLY \$3.90

No. 9.

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Green's Fruit Grower, mo.50
American Bee Journal, mo. 1.00
Every Week 1.00

Regular price\$3.50

OUR PRICE ONLY \$2.50

No. 10.

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Youth's Companion, wk. 2.00
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Poultry Success, mo.50

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Make your soil yield its very utmost this year. All Europe looks to America for food during reconstruction. With Planet Jr. tools you cultivate more intensively—they do the work so thoroughly. And you can double or triple your acreage—they do the work so easily and quickly. Planet Jrs. are scientific implements. Strong yet light to operate. They last a lifetime and are fully guaranteed.

Planet Jr.

No. 25

No. 25 Planet Jr. Combined Hill and Drill Seeder, Double and Single Wheel-Hoe, Cultivator and Plow

sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. A double and single wheel-hoe in one. Straddles crops till 20 inches high, then works between them. A splendid combination for the family garden, onion grower, or large gardener.

No. 17 Planet Jr. is the highest type of single wheel-hoe made. It is a hand machine whose light durable construction enables a man, woman, or boy to cultivate the garden in the easiest, quickest and best way. Will more than save its cost the first season.

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How to Breed Live Stock

HOW TO BREED LIVE STOCK

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Write today. Get our wonderful free booklet, "How to Breed Live Stock". Reveal valuable information on the breeding and feeding of horses, cattle, swine and sheep. Shows pictures of breeding organs. Also describes our wonderful home-study course in Animal Breeding, Sterility, Disease Prevention, Contagious Abortion, Artificial Breeding, etc.—all taught in detail. Write today. We have brought the school to the breeder. Get our free booklet. Write today. Just mail a postcard.

NATIONAL SCHOOL OF ANIMAL BREEDING Pleasant Hill, Ohio

NEW MONITOR SELF-HEATING IRON

AGENTS WANTED

\$30 to \$50 a week actually being made now by men and women. The original—the best—the lowest priced. Nickel plated—looks good—makes good—sells fast—guaranteed. No experience needed. Women as well as men. Exclusive territory. Work all or sparetime. Mrs. Nixon, Vt., sold 8 first half day. Evans, N. C., sold 2 dozen one Saturday. Liberal terms. Prompt service. Write today.



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SCOTT'S FIELD SEEDS

Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalogue including "How to Know Good Seed" free. Write today.

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SEED OATS

Pedigreed M. A. C. test College Success Oats. Test field weight 38 lb. per bu. Weeds none. 98% germination. Worthy Oats, 35 lb. per bu. Weeds none. 95.5% germination. Prices 1-5 bu. \$1.60; 5-24 bu. \$1.40; 25-200 bu. \$1.30; over \$1.20. Sacks furnished free.

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5,000 Extra selected, sure to grow. 20 bushels growing varieties. Highest yielders. Best show corn. Also seed oats, barley, alfalfa, spring wheat. 1200 acres. Sample on request. Write today for catalog.

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All other forms must first be nitrated in the soil, taking time, and resulting in costly losses through Bacterial action.

Use 100 lbs. per acre for seeded crops; 200 lbs. for cultivated. These light dressings are easily spread over an acre and the amount is trifling compared to the acreage weight engaged in crop production.

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Pumps that give most modern water supply for home and farm. Myers Cog Gear Pumps operate one-third easier and have Glass Valve Seats that cannot wear or corrode. Myers Self-Oiling Power Pumps, Working Heads and Pumping Jacks run by any gasoline engine or motor. Myers Hydro-Pneumatic Pumps and Self-Oiling Electric House Pumps furnish running water systems for all buildings. Myers Spray Pumps protect fruit and vegetables. Also World famous Myers Hay Unloading Tools and Door Hangers. Dealers everywhere. Ask yours. Attractive booklets on request.



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Guaranteed Garden and Flower Seed. Free packet with each order. Postage paid. Special prices to Market Gardeners and large growers. ALLEN'S SEED HOUSE, Geneva, Ohio.

Our Boys' and Girls' Page

Lamb-Savings Service

By Edgar L. Vincent

A FEW days ago in writing about letting sheep out to double once in four years, I tried to show the boys and girls that it would be a good thing for them to speak to father and see if he would not make some sort of a bargain with them, so that they might get into the sheep business. At the same time I spoke of boys who were in sheep clubs for the good they could do the sheep industry, and in order that they might make a success of their work along these lines.

Now let me speak for a moment of a fine work the boys are doing in the far west in the way of saving lambs and turning them into money. You know, out on the great sheep ranges many enemies are all the time in waiting to attack sheep and lambs. The coyote destroys many every year. In some places the wolf is a deadly foe to sheep. It may seem strange to learn that thousands on the back of thousands of sheep are all the time drifting across the great wastes of lands in these western ranges, and naturally there are a good many lambs that drop out and would be left if someone did not come to their rescue.

Then, too, many perish in the cold of winter. Nobody knows how great a percentage of sheep and young lambs go down every winter in the storms, but we know that it is altogether too great for the highest degree of success. Every sheep and every lamb that dies in this or any other way, takes just so much off the profits of the season. And this is one reason why sheep breeding and sheep growing are not as profitable as they should be.

Now, in comes the work of the boys. Boys are keen about a great many things. They are, as we sometimes say, "up to snuff." And they have found out the danger to lambs of falling out by the way and being trampled to death by the stronger flock or perishing in the cold, so they are taking steps to save as many of the lambs as they can. Following the flocks, these young shepherds, if they see a lamb that acts weak, or that has really fallen out and is being left behind, pick the little fellow up, place it carefully in a sack and take it away home to be brought back to life. And there are clubs of boys banded together for this purpose of rescuing lambs. So far as I can learn, this movement began in the state of Washington, and it has spread until now there are clubs in Oregon, Idaho, Montana and Utah, and there may be some clubs in still other states.

The United States has heard of these boys' clubs and is doing all it can to foster them, through the Bureau of Animal Industry. The agricultural departments of the states mentioned also do what they can to help them along. And it is surprising how many of these "bum" lambs, as they are sometimes called, are brought back from the very jaws of death, raised into sheep for the flocks when grown up, or sold and turned into money.

Out in the state of Washington, for example, one boy started out to follow the flocks of sheep, especially at the time when the lambs were coming. All over, as far as the sheep went, this boy followed on, picking up the weak little chaps and bringing them in. In doing this he walked some days for many miles, but he had the satisfaction of saving three or four lambs in one day. At the end of one season, he had brought in forty-three lambs that probably would have died and been an utter loss if it had not been for his efforts.

Of course, it was some work to bring those lambs up on the bottle, as had to be done. But it was not long before the boy's little herd was old enough and strong enough to nibble some grass and eat a bit of grain. When a lamb gets once fairly on its feet, it is pretty apt to live and do well. So the boy's lambs grew large enough to take their place in the flock and take care of themselves. The ewes were put in a pasture by themselves, while the wethers were sold, usually bringing as much as \$10 a head. In one state the owners of sheep have been awakened to the worth of the boys as savers and shepherds of the lambs, and they hire the boys to take their blankets, go out where the flocks are in the pastures and gather up the weak members of the lamb flock.

This little story will, I am sure, interest every boy and girl lover of sheep and lambs. A sheep man out in the Yakima valley of Washington heard of a school teacher, a young girl who was interested in sheep. Collecting a load of more than twenty "bum" lambs he drove to the schoolhouse and offered to sell the little fellows at one dollar each. The teacher declared a recess, sent the boys and girls home to talk it over with their parents, with the result that in a little while everyone of those lambs had a new home. A club was formed among the pupils of the school and a new boom in sheep is under way in that neck of the woods.

Now, on a good many farms it is the time for the lambs to put in an appearance. The mother sheep need watching and attention. The men folks are busy about other work. Could not you be to the newborn lambs a caretaker, like the boys of the far west? By watching the flock now and then through the day, you may see some little one that seems weak and unlikely to live if it is not cared for at once. I am sure father would be glad to have you do this work and without doubt would give you the lamb you save. This may be the beginning with you of a bigger sheep business than you now know. It surely is worth undertaking.

Though one may inherit acres, an education cannot be inherited. The wealthy man may pay others for doing his work for him; but it is impossible to get his thinking done for him by another, or to purchase any kind of self-culture.





My Winter with Aunt Rilly

By G. W. Tuttle

WOULD that you could see the picture as it hangs on memory's pages—the house with the long, sloping roof; the giant well sweep by which sparkling water was drawn from the old, old well; the ancient horse who stumbled slowly down the old highway in our weekly pilgrimages to the old brick church in the valley; and last, but not least, the wrinkled but strong face, which the old place framed so fitly, the face of Aunt Rilly.

Aunt Rilly would never have taken a prize at a beauty show, even in her palmiest days, but she had the courage of her convictions and she feared the face of no man. Even burglars had no terrors for her. Hearing a noise in the cellar in the noon o' the night, she struck a light, tiptoed softly to the cellar door, and confronted a burglar, who fled in dismay.

One boy after another had lived with Aunt Rilly. It was currently reported that she was "sot" in her ways, also that she fed the boys very poorly. For some reason or other she had difficulty in keeping a boy—either the boy became dissatisfied, or she did.

I was to live with Aunt Rilly for the winter—do her chores, cut wood on Saturdays, etc. In return she was to give me board and pay part of my tuition at a private school.

So there I was, but not without inward misgivings. I had a healthy farm boy's appetite. I sat down to the first meal—supper—with fear and trembling. This was New England, where pie was the orthodox dessert. I ate my piece of pie—regulation size, substantial "fillin'", etc. When the last crumb was finished, the old lady looked at me, smiled, and said: "George, have another piece of pie!"

O, joy, my fears fled like the dew of the morning! I could almost have hugged Aunt Rilly then and there. The old lady ate little, but there was always plenty of good, substantial food for her boy.

A boy soon makes discoveries. I soon discovered an old fowling piece, long unused. Across the top, about a foot from the end of the long barrel, was a large crack, and the barrel was bent downward from the crack to the end of the barrel. I had all of a healthy boy's desire to see just how—and just where—that gun would shoot. I was afraid that Aunt Rilly would object, but opportunity came my way, and I gripped her hard. The blue jays troubled Aunt Rilly by eating the food put out for her chickens. She had set steel traps for them, a very unnecessary and cruel procedure, it seemed to me. I broached the subject of the old gun to Aunt Rilly. I was willing to dispose of the blue jays. To my surprise the old lady consented. The gun was bent so badly that it shot under about a foot at a distance of twenty-five yards, but I was a good guesser as the blue jays soon discovered to their sorrow. I even killed some birds on the wing with the old gun, a feat which certainly required rapid calculation.

Aunt Rilly's greatest hobby was pocket pineushions. "I have made more than a bushel," she would say proudly to me. Had she said ten bushels I should not have questioned her veracity. Had she lived during the past war I think every one of our soldiers on the front would have been carrying

one of Aunt Rilly's pocket cushions. The inner circle—to which I belonged—always had two cushions each; one of the finest material for the Sabbath and one of more common material for week days.

The old horse was my greatest trial; he was old and decrepit and slow—so slow! Every Sabbath he made his wheezy, complaining way up and down the hills of the winding country highway to the church. We started early—in the first place it took a long time to make a short journey; in the second place Aunt Rilly believed, not only in taking time by the forelock, but in beating him to the goal, so a good half-hour before church time always found her sitting proudly erect in her pew.

At last the old horse came to grief in the mud on the big hill. Down he went in the mud one Sabbath morning. With one spring the spirited old lady cleared the wheel, and landed in the mud. The old horse was rolling his eyes around as though to say, "I don't see how this happened." The horse was unhurt, but Aunt Rilly fairly danced with excitement. "O, dear," said she, "he'll die, I know he'll die! Just look at his eyes!" A passing neighbor took Aunt Rilly to church while I returned with the old horse, as horse and harness were plastered with mud.

I remember one interesting incident. I had left the shotgun standing under the eaves of the house one day as I worked at the woodpile. The sun was warm and the snow on the roof was melting. The water ran down the barrel of the gun until the powder was well moistened. I knew nothing of this at the time. Just at night, after I had carried the gun into the house, I saw a partridge sitting in a tree within range of the house. Greatly excited, I stepped out on the porch, and took aim. Snap, went the gun. Hastily I retreated to the house and primed the gun. Snap; went the cap again. This continued until I despaired of getting the old gun off; so, dropping it, I rushed over to a neighbor's, borrowed an old Springfield army rifle, loaded it with a bullet much too small—by using heavy patches; then by a lucky shot I neatly decapitated the patiently waiting partridge. What a savory meal we had, and how the dear old lady's face shone with delight.

Aunt Rilly kept Saturday night. When the sun set on Saturday night her week's work was done. She did not forbid my studying or doing things for myself, but I could see that even these things grated with her, so I omitted them when possible. Keeping Saturday night was an old New England custom, now obsolete. It had its advantages; where work is continued until a late hour on Saturday night the flesh becomes weary, and the mind dulled, for Sabbath morning and the Sabbath privileges.

I think often of the happy winter I spent with dear, quaint old Aunt Rilly. Peace to her ashes, and rest to her soul.

If you would be happy and prosperous, if you wish your soil to grow more productive, and if you want your boys to stay at home and become interested in farming, sell all your poor stock, and raise the right kind, and keep it right.

HOW ONE FARMER PROGRESSED A HUNDRED YEARS IN A DAY



First, you slip Lay Porta Power under the rear axle, press down on two levers, slip on a belt that connects with a line of pulleyshafting in the shed, and start the Lay Milking Machine. Cows are milked in no time. Throw on the separator belt—one more job done. Feed mill next—then the grind stone or churn.

Then you put the saw rig on the back of the car with Lay Porta Power on the running board and drive down to the wood lot. In half an hour you've sawed more wood than you could in a day by hand.

Back to the house and hitch up to your Lay Electric Lighting Plant and charge the storage batteries for modern Lay Farm Light for house and barn; and then fill your tanks with a Lay Porta Pump.

Release the levers and the car is ready to run in town with, or for family use.

This marvelous Farm Power has cost almost nothing. Just a little gas. There is almost no wear on tires. You get the same mileage out of tires and do all this extra work besides.

This whole Farm Power Outfit—Car, Lay Porta Power, Lay Milking Machine, Lay Porta Saw, Lay Farm Light, Lay Porta Pump, Lay Porta Mill, costs about what one laborer would cost for a year and they'll do your farm work for many years for practically nothing.

Cheapest power on earth and most efficient. Each machine sold separately. Lay Porta Power will operate any machinery you now own that can be driven by a belt.

Power on the farm means profit. Portable Power—Lay Porta Power. Write for full information. We can employ a few farmer agents. Every one buys on demonstration—the proposition is that logical.

L. A. YOUNG INDUSTRIES, Inc., Detroit, Mich.
Portable Power Implements for the Farm
GRACE MOTORS, Ltd., Toronto, Ont.
Exclusive Canadian Distributors

He was puzzling over the labor problem.

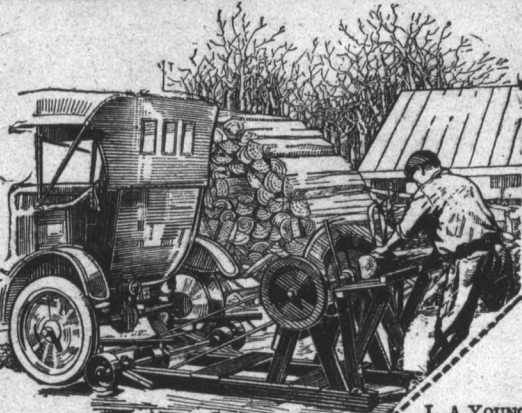
"Trouble with me is," he said, "that I'm farming the way they did a hundred years ago. All hand and horse labor. What I need is Power."

He bought an automobile. That saved several hours a day getting the stuff to market. Then we showed him how to hitch up the wonderful auto power plant to do pretty nearly all the hard work of the farm. He could move his

power about where the work was—that was the first big point. And the Power was always ready.

Here's a sample day when you Farm the Lay Way with

LAY PORTA POWER

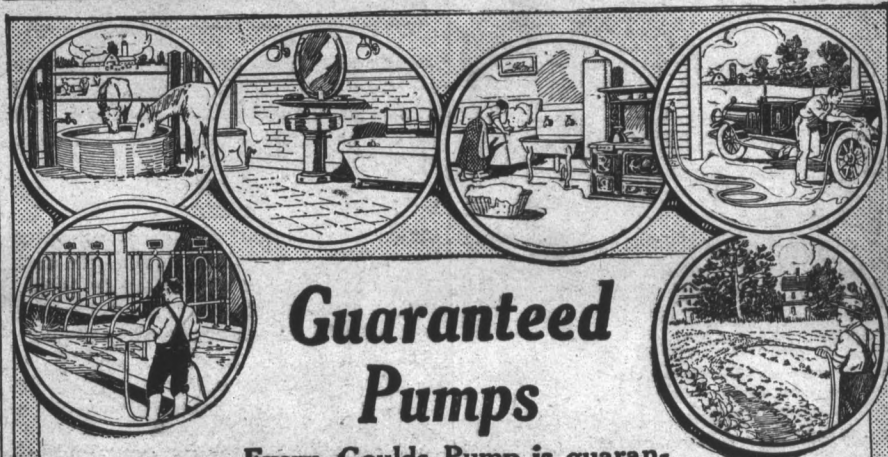


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Every Goulds Pump is guaranteed to satisfactorily perform the work for which we recommend it.

Goulds Pumps are built by the world's largest manufacturers of farm pumps under the supervision of a staff of engineers unexcelled in skill and backed by the organization's accumulated experience of more than 70 years.

GOULDS PUMPS

"For Every Service"

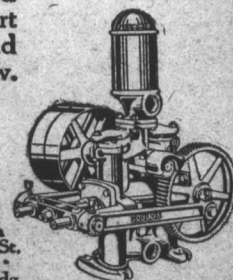
One of the most popular is the Goulds Fig. 1531 "Pyramid" small power pump shown at the right. One user, Mr. Wrigley, Elmira, N. Y., had his "Pyramid" overhauled after seven years continuous use. Every part was found to be in excellent condition, and when reassembled, the "Pyramid" ran like new. It pumps to an elevation of 175 feet.

Write today for free booklet, "Pumps for Every Service."

THE GOULDS MFG. COMPANY
Main Office and Works: Seneca Falls, N. Y.

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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 pounds 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.

\$ 6.00 for 15 eggs
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Genuine Wild Mallard Ducks

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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Have a wonderful flock, headed by prize-winning 55 lb. tom.

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Bloomfield S. C. Rhode Island Red Chickens

Fine laying strain of prize birds

\$ 5.00 for 15 eggs
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Get order in early and send check with it. Send for free booklet and instructions.

Bloomfield Farms

1714 Penobscot Bldg.
Detroit, Michigan



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 Rock-
ies on 30 DAYS' free trial.



Both Machines \$14
Freight Only Paid

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.

WISCONSIN INCUBATOR CO. MONEY
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SATISFIED

You Take No Risk With An Ironclad 30 Days Free Trial 10 Year Guarantee Both \$14.75 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 to earn extra money. Order now, or write for book, "Hatching Facts." It's free and tells all. Jim Rohrer, Pres.

IRONCLAD INCUBATOR CO. Box 97, Racine, Wis. Made of Redwood cov'd with Galv. Iron

\$10.95 Buys 140-Egg Champion Belle City Incubator

Hot-Water, Copper Tank, Double Walls Fibre Board, Self-Regulating, With 55.25. Hot-Water 140-Chick Brooder - both only \$15.95. Freight Prepaid East of Rockies. Allowed on express. Guaranteed. My Special Offers provide ways to earn extra money. Order now, or write for book, "Hatching Facts." It's free and tells all. Jim Rohrer, Pres.

Belle City Incubator Co., Box 14, Racine, Wis.

Chickens Sick or Not Laying? Most poor layers are "OUT OF CONDITION" or have Colds, Roup, Bowel trouble, Sore head, Chicken pox, etc. GERMOZONE is the best remedy for all these disorders. At dealers or postpaid 75c, with 5c book Poultry Library. GEO. H. LEE CO., Dept. 480 OMAHA, NEB.

POULTRY

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
Brown Leghorns
White Leghorns
Buff Leghorns
Anconas
White Orpingtons
Rhode Island Reds
Black Minorcas
Assorted, for Broilers

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

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



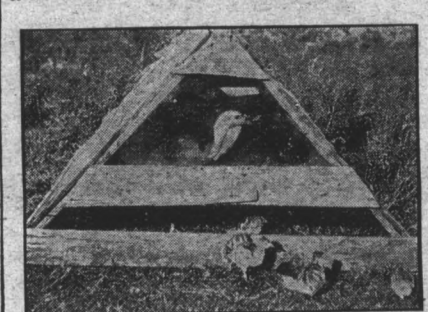
Profits in Turkeys

FOR those who are favorably located for raising turkeys, a more profitable side line can hardly be found. Given plenty of range, where the turkey can find grasshoppers and other insects, green vegetation and seeds of weeds and grasses, acorns and nuts of various kinds, the cost of raising them is very small and the profit very large.

Grain, stock and general farms are especially adapted to turkey raising, and it is on such farms that most of the turkeys are found. Little has ever been done in the way of raising them in confinement, and has resulted in failure where tried. Plenty of range is essential to success.

In selecting turkeys for breeding, the most important factors to be considered are vigor, size, shape, bone, early maturity and color of plumage. The body should be deep and wide, the back broad and the breast round and full. The head should be of good size, and of a clean, healthy appearance.

A strong, well-made skeleton is shown by thick, sturdy shanks, and straight, strong toes. It should be the aim of the breeder to have a flock of



pure-bred turkeys even though they are sold at regular market prices. The male at the head of the flock should by all means be a pure-bred of the best type obtainable.

The male is one-half of the flock, and by constantly selecting the best females of a similar type and mating these with a pure-bred male, one can soon have a flock of uniformly large, early-maturing, strong-boned long and deep-bodied turkeys of the same color.

Fifteen turkey hens can safely be mated to one vigorous tom. If 25 or 30 hens are kept, two toms should be used, one running with them at a time, says for one day, while the other is confined, and the other the next day. The toms will fight during the mating season.

Turkey hens like nothing better than to hide their nest half a mile from the farm buildings, usually in a patch of grass or weeds. To locate these nests often proves a long and tedious task, the best method being to follow each hen as she separates from the flock and starts toward her nest, not letting her know she is followed. A still easier and quicker method than this would be to confine the hens early, some morning soon after they have come down from roost, and let them out late in the afternoon. Those that are laying will then make for their nests, that they may hide their eggs with the others.

If many turkeys are kept, the use of a breeding pen will be found a great convenience. This pen should cover a sufficient area, say an acre for fifteen fowls, which would give them room for exercise. A hog-tight wire fence, three feet high, will hold most turkeys, and if any persist in flying out, the flight feathers of one wing should be clipped. Nests should be scattered about the

pen—those which turkey hens take to most readily being barrels turned on their sides and nests shaped in them with straw.

Turkey hens, chicken hens and incubators are commonly used to hatch. During the early part of the laying season it often happens that one has on hand a number of eggs that should be incubated before any of the turkey hens are through laying their first litter and become broody.

In such case and also when it is desired that the turkey hens lay more than one litter some of the eggs may be incubated under chickens or in the incubator.

About a week before the poults are due to hatch, turkey hens enough should be allowed to sit to take all the poults hatched. They can be given a few eggs from the incubator or from under the chicken hens, and allowed to hatch the poults themselves, or at night a newly hatched poult can be slipped under each turkey hen that is to be given a brood of poults, and by morning she will be glad to own them.

Lice are a common annoyance to setting hens, and are one of the worst enemies of young poults. To prevent their getting a foothold, dust the hen thoroughly with some good lice powder before she is placed on the nest, and once a week thereafter while she is setting. The nesting material should be kept clean, and if the eggs become dirty they should be washed with lukewarm water.

If the weather is warm and dry no shelter is required, as the poults do better in the open. Should it be rainy, however, they need to be protected, for nothing is more injurious than for them to become wet and chilled.

The most satisfactory plan is to confine the mother turkey hens to a coop and allow the poults to run in and out whenever rain does not prevent. This coop should be placed in a field, where they can run out and find grasshoppers, green vegetation and other natural feed. The coop should be removed to fresh ground every day.

Improper feeding, combined with close confinement, has been the cause of many failures in turkey raising. Given free range on the average farm, the poults can easily pick up their own living, and one light feed a day for the purpose of inducing them to come in at night is sufficient.

HENS LAY SMALL EGGS.

What is the cause of my hens laying small eggs? From a flock of forty-five hens we get from one to two a week of very small eggs. Hens are in good condition.

Gratiot Co. Mrs. C. C. F.

A hen's reproductive organs sometimes produce dwarf eggs and it is probably due to some physiological disturbance which causes the shell to be formed around some of the albumen, but without a normal yolk included. Most of the dwarf eggs we have seen contained no yolk. It has been found by observation of trap-nested hens that a hen which lays a dwarf egg will usually lay normal-sized eggs, both before and after the dwarf egg is produced. It has also been found that the laying of dwarf eggs is most apt to occur in the spring and early summer when the birds are producing heavily. This is no cause for alarm and there are seldom enough of the dwarf eggs produced by a flock to seriously reduce the profits.

R. G. K.

HOMESTEAD FARMS

A Federation of Interests

After a long delay our new illustrated catalog is ready. In it we explain the development of the Homestead Farms work.

Pure Bred Practical Poultry

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.

[Day Old Chicks]

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.
Rose Comb and Single Comb Rhode Island Reds.
White and Silver Laced Wyandottes.
Black and White Orpingtons.
Single Comb Black Minorcas.
Single Comb and Rose Comb White Leghorns.
Single Comb and Rose Comb Brown Leghorns.
Single Comb Buff Leghorns.
Single Comb Anconas.
White Pekin Ducks. Guineas.

Eggs for Hatching

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.

Eggs from White Pekin Ducks, Gray Toulouse and Embden White Geese.

Pullets—12 White Wyandottes; 9 Barred Rocks; 20 White Leghorns.

Cockerels—12 Barred Rocks; 5 S. C. and 1 R. C. White Leghorns; 11 S. C. Rhode Island Red.

Hares—Belgians and Flemish Giants.

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

BLOOMINGDALE FARMS ASSOCIATIONS,
Bloomington, Michigan

CHICKS CHICKS CHICKS

350,000 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. Bred to Lay. 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 and White Wyandottes, \$15.00 and \$18.00 a 100; S. C. Anconas, \$14.00 and \$17.00 a 100; S. C. Buff Orpington, \$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 offer on chicks. Hovers and brooder stove. Give us your order and we will make you a satisfied customer the same as hundreds of others. Before ordering elsewhere get our free illustrated catalog. Get your order in early.

HUBER'S RELIABLE HATCHERY
EAST HIGH ST., FOSTORIA, OHIO.

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.

Bred-To-Lay White Leghorns. Leading M. A. C. Demonstration Farm in 1918. Average production for 150 hens last year 185 eggs each. Eggs for hatching, \$2.00 per 15; or \$10.00 per 100.

ANNA R. LINDSAY, Glenburnie Farmstead, Romulus, R. R. 2, Box 54, Mich.

Baby Chicks Bred to Lay S. C. W. Leghorns \$15.00 per 100. From stock that produced the winners in the state demonstration farm work last year. Circular free.

SUNNYBROOK FARM, Hillsdale, Mich.

Baby chicks from Bred-to-Lay S. C. White Leghorns \$12 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.

Barred Rocks egg contest winners, eggs from strain with records to 280 a year. \$2.00 per setting prepaid by P. P. Circular free.

FRED ASTLING, Constantine, Mich.

BARRED Rocks exclusively. Get your baby chicks Band hatching eggs on time by ordering now. Prices and folder free.

H. H. PIERCE, Jerome, Mich.

BARRED Ply. Rock eggs for hatching \$2.00 per 13

Delivered by post. A few small cockerels \$3.00 each.

J. A. BARNUM, Union City, 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.

Baby Chicks Hatching eggs, seven leading varieties, best quality. Lowest prices. Catalogue free.

Goshen Poultry Farms, R. 19, Goshen, Ind.

100,000 BABY CHICKS

for 1919, sent safely everywhere by mail or express. Single Comb White and Brown Leghorns and S. C. Anconas. Grand laying strains. Strong, vigorous, hatched right kind. Tenth season. Satisfaction guaranteed. Order now for spring delivery. Prices right. Free catalogue. W. Van Appledorn, R. 7, Holland, Mich.

BABY CHICKS—11 Varieties, \$10 per 100 up, 2 weeks old 25c up, 4 weeks 45c up. Hatching eggs \$1.50 per 15 and \$8 per 100. Bred White and Buff, Buff and White Orp., S. & B. C. R. I. Reds, White Wyand., S. C. W. Leg., S. & R. C. Br. Leg., Alredale Pups, Chr. free. Sunny Side Poultry Farms & Hatchery, Blanchester, O.

Baby Chicks: S. C. White and Brown Leghorns. Good laying strains of large white eggs. Guaranteed to reach you in first class condition by parcel. Catalogue with price list free.

WOLVERINE HATCHERY, R. 2, Zeeland, Mich.

Baby Chicks S. C. White and Brown Leghorns and D. Barred P. Rocks, by parcel post or express, safe delivery guaranteed. Knoll's Hatchery, R. 3, Holland, Mich.

BABY Chicks and Eggs. Barron English White Leghorns, "The Big Kind," 248 to 333. Egg stock. Write Mrs. E. L. GARLOCK, R. 7, Howell, Mich.

Baby Chix Barron Strain S. C. White Leghorns. Large healthy vigorous stock farm raised, bred to lay. Aim satisfaction. Bruce W. Brown, R. 3, Mayville, Mich.

Marketing Rabbits

HOLD the rabbit by the hind feet and hit it sharply on the back of the head with a stick. A piece of broom handle about one foot long makes a suitable stick for stunning the animals. Then cut a gash in the throat to bleed them. During warm weather it is not necessary to use special care in skinning the rabbit as the skins are not valuable, but in the winter if many hares or rabbits are killed it pays to save the skins. With a little practice it is possible to skin and clean a rabbit quicker than a chicken can be picked.

Some breeders of rabbits kill them by dislocating the neck. They hold the hind legs of the rabbit in the left hand and then place the right thumb at the point where the neck and skull join.



The rabbit is then stretched out while the head is bent backward and the thumb strongly pressed inward. When the neck is dislocated it can be felt. This is considered a very humane method of killing when done by an expert, but doubtless the amateur will do more satisfactory work by first stunning the hare with a stick.

The skin and the wall of the abdomen should be cut with a very sharp knife. Then remove the entrails but leave the heart, liver, lungs and kidneys in place. A slit can be made between the tendon and bone of the leg to hang up the rabbit. Careful dressing is important before placing the rabbits on the market or the meat may be tainted and part of the business of the rabbit breeder now should be to increase the use of rabbits among housewives. A clean paper should be used to wrap the rabbit before it is delivered to a customer. Old newspapers will not do for wrapping as they do not give the carcass a pleasing appearance.

In some communities it will be possible for the rabbit breeder to sell to hotels and restaurants by special arrangement. A private trade can be worked up with perseverance. Presenting a free rabbit to a prospective customer is often good advertising as it will manufacture a demand where none has existed. The rabbit business looks fine on paper but as yet the average city buyer has not been educated concerning the value of rabbit meat and the many attractive ways in which it

can be prepared. Every breeder will find problems in his own community to settle but by business-like efforts many housewives can be induced to order rabbit meat and continue its use at frequent intervals on the home table.

R. G. K.

HOW WE GOT OUR R. F. D.

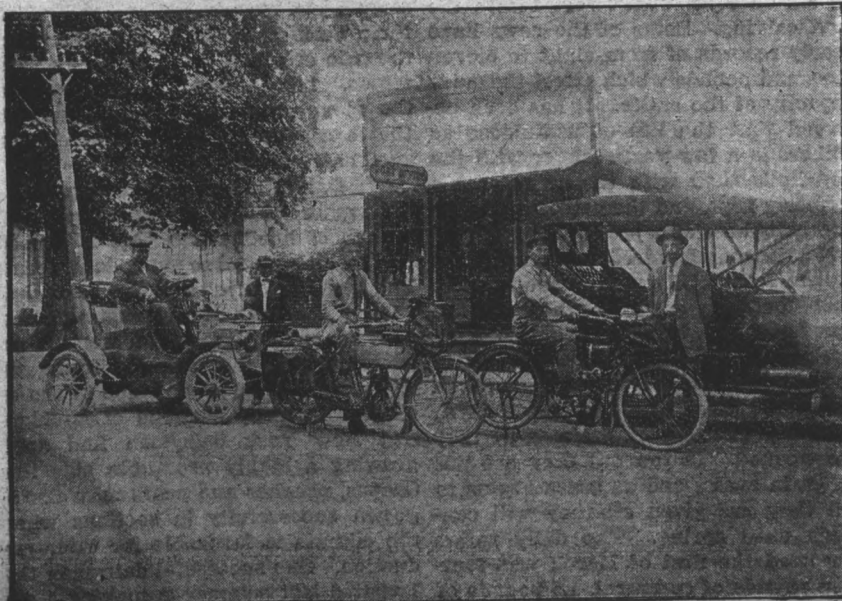
(Continued from page 469).

Three children came in due time, and still Clark hung onto his R. F. D. job, and likewise stuck closer than a brother to all his other appurtenances, all on a measly \$25 plunks for each calendar month. His good wife has been a help-meet, in the full acceptance of the term. If she had not, Lewis Clark would "have gone busted" long ago.

When the automobile first came along it was the joke of the farmers, their wives, sons and daughters, from Kalamazoo to Oshkosh and back to Ypsilanti. And when the idea of utilizing one of these original gasoline carts for carrying R. F. D. mail was first proposed to Willis Lawrence he snickered at it long and loud. Willis was a first-class mechanic and he thought it would be a cold day when he got caught between a rural mail bag and a chug wagon that was mostly wheeze and inclined to buck any old time or place.

But one day, after these two original R. F. D. carriers had navigated about 71,417 miles over all sorts of roads, in all kinds of weather, Willis met and fell in love with a pioneer chug wagon that probably had been abandoned by its parents or guardians. We don't know just how Willis adopted the poor thing, but in less time than it would have taken at Camp Custer, he was first lieutenant and chief engineer of the bus and it had the honor of being the first automobile to carry mail on the first R. F. D. route in Michigan. Willis could box the steering gear with one hand and throw out mail with the other. When the farmer's wife or good looking daughter heard the chug, chug, a mile or two away, she had time to change her clothes and be standing by the mail box when Willis hove to and threw out the anchor. And then, provided the chugger couldn't or wouldn't stop its chugging to catch its second or third wind Willis would shut one eye and cast the mail overboard; and the womenfolk would catch it on the fly, if the wind was in the right quarter, and sail into the house to read a spell.

It was during this period that we one day drove to Climax to take the accompanying picture. At that time there were three carriers out of the village. Willis Lawrence was still making his first love go like a charm. Lewis Clark had a fine new motorcycle, and the new carrier, Leo Roof, had purchased one, and for the first time in its history the first R. F. D. in Michigan was fully motorized. In the picture, Lewis Clark is ahead and beside the touring car. All three vehicles are well loaded with mail and the boys were ready to start out.



The Plug with the Green Jacket

Will not break

That's a statement that will be clear to any one who examines the construction of the Splitdorf Spark Plug.

Its long life is assured because the insulation (which is the vital feature of any plug) is of imported ruby mica, a material that is indestructible.

The mica core of the Splitdorf Spark Plug simply can't crack, chip or leak. Therefore, with only ordinary care, it will last practically forever.

When you find SPLITDORF Plugs as regular equipment you'll know that the engine manufacturer is determined to give the purchaser the highest priced and longest lived plug made.

Although Splitdorf Plugs cost the manufacturers more than any other plug they'll cost YOU no more than the ordinary plug. All Splitdorf Standard Plugs, except Specials, \$1.00.

There is a type of Splitdorf Plug best suited to every engine. Our booklet will tell you the exactly right type for YOUR engine. Write for it TODAY.

At all jobbers and dealers

SPLITDORF ELECTRICAL CO., Newark, N. J.

AERO, DIXIE and SUMTER Magnets, Impulse Starters and Plugoscillators



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Standard merchandise at wholesale prices to the people.

Hurst's Winner Roofing
\$1.25 Per roll of 108 square feet. With Nails and Cement.
\$1.50 Asphalt Roofing .. **\$1.10**
3.00 Slate Roofing **2.40**
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Complete Departments of
 HARDWARE, AUTO ACCESSORIES, VEHICLES,
 GROCERIES, FURNITURE, DRY GOODS, ETC.
HURST & CO.
 Capital Stock \$1,000,000. Assets over a million.
 Wholesale Purchasing Agents for Farmers
 42-42 Hurst Block Indianapolis, U. S. A.

Tells Why Chicks Die

E. J. Reefer, the poultry expert, 4813 Poultry Bldg., Kansas City, Mo., is giving away free his valuable chick book entitled "White Diarrhea and How to Cure It." The book tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 88% of every hatch. It is absolutely free. Every poultry raiser should have one. Write Mr. Reefer today for your copy.

POULTRY

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 250 eggs their pullet year. March \$16, April \$15, May \$14 per 100. Circular free. Folly Cove Farms, R. 1, Holland, Mich.

LOOK BABY CHICKS \$11 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.

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.

CHIX:- S. C. W. Leghorns

\$18 per 100. Full count live chix guaranteed. Pullets of same blood averaged 70% yield through December and January. Morse White Leghorn Farm, Belding, Mich.

25 Barred

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

Blue CUSTOM HATCHING Hens

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

Barred

Rocks S. L. Wyandottes and Light Brahma cockerels for sale \$3 to \$5 each. Eggs in season. C. V. BERR, Allenton, Mich.

Purebred

Barred Rocks. Eggs from vigorous stock of good laying ability. \$2 per 15; \$10 per 100. Preened by parcel post. R. G. KIRBY, R. 1, East Lansing, Mich.

Chicks That Live \$15 per 100

S. C. W. Leghorns MY SPECIALTY. Send for catalogue. SNOWFLAKE POULTRY FARM, R. 1, Grand Rapids, Mich.

Chicks,

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

English Barron S. C. White Leghorn chicks at \$14.00 per 100; \$65 per 500 immediate special delivery. 6,000 chicks each week. Guarantee safe delivery full count of lively sturdy quality chicks that will mature into most profitable and persistent layers. Hatching eggs \$6 per 100. Write us your wants and send for valuable catalogue giving raising & feeding methods. DEVERIES LEGHORN FARM, Zeeland, Mich.

Eggs for Hatching White Orpingtons, \$2.00 per 15. Anconas, \$1.50 per 15. W. E. WEST, R. 1, East Lansing, Mich.

English Barron S. C. White Leghorns, farm raised. Eggs for hatching \$8.00 per 100. Pleasant Hill Poultry Farm, F. A. O'HARROW, Clarksville, Mich.

Fenton Chicken Hatchery, Fenton, Mich. F.M. Milliken, Proprietor. Thoroughbred Day Old Chicks, 25 for \$3.50; 50 for \$6.00; 100 for \$10.00. Single Comb W. Leghorns, Tom Barron English Strain. White, Buff and Barred Plymouth Rocks, Buff Orpingtons, Anconas, W. Wyandottes, R. I. Reds, B. Leghorns.

Fowler's Buff Rocks Cockerels \$4 up. Utility eggs for hatching \$2.00 for 15. 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.

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 15c each; April 15c each. Parcel postpaid. Lots of 25 or over, guaranteed delivery alive and lively. Hatch every week after March 15th. No circular. Please book order direct from ads and send orders early. V. A. MORSE, Ionia, Mich.

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

R. C. Br. Leghorn eggs \$1.50 per 15, \$8 per 100. Pekin duck, \$1.50 for 8. W. Chinese goose eggs 40 cents each. Mrs. CLAUDIA BETTS, Hillsdale, Mich.

S. C. Brown Leghorns. Heavy laying strain. Farm raised. Eggs \$1.25; 30 \$2.50; 45 \$3; 100 \$6. Postpaid. Floyd Robertson, R. 1, Lexington, Ind.

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 \$4. \$5. Few Silver pullets \$3 each. C. W. Browning, Portland, Mich.

Snowy White Rocks Fishel Strain, dandy layers. Eggs \$1.50-15; \$4-50; \$7-100. All prepaid. Mrs. Earl Dehnhoff, Vanburen, Ohio.

S. C. B. Minorcas. Eggs from pen 1, \$3.00 per 15, \$2.00 per 25, \$2.00 per 15. Incubator eggs \$7.00 per hundred. R. W. MILLS, Saline, Mich.

UTILITY S. C. White Leghorn Eggs and limited number baby chix after April 1st. Averaged 40% last winter. J. C. GREENE, St. Johns, Mich.

White Wyandottes Free range flock 80 Duston's Strain hens mated to 7 Martin's Regal Strain Cockerels, 15 eggs by Parcel Post \$2.00 by ex. \$3 per 100. VERN MOORE, Hartford, Mich.

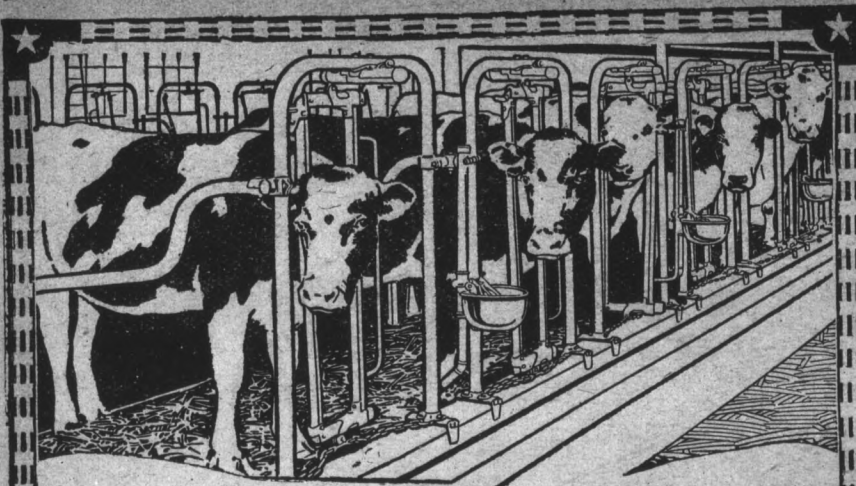
White Wyandottes choice stock; cocks, hens, cockerels, and pullets. Send for 1918 circular. David Ray, 709 Norris St., Ypsilanti, Mich.

White Chinese Geese

1 trio 2 years old \$13.00, 2 pairs 1 year old \$10.00 pair. Grand, pure bred stock, now laying. NELSON H. WHETHAM, R. A. 1, Flushing, Mich.

Turkeys Will be Turkeys next fall. White Hollands are the best they stay at home. Toms \$8, young hens \$5, 2 year old Hens \$8. Order early. ALDEN WHITCOMB, Byron Center, Mich.

Pekin ducks, either sex, \$4.00 each. Mammoth Bronze turkeys, Toulouse geese, S. C. W. Leghorn cockerels. Berkshire gilts and sows. Chase Stock Farm, Marietta, Mich.



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Long ago shrewd farmers and dairymen found out that cows cannot produce properly unless they are warmly housed, rightly fed and made comfortable. You know this and you know also that it means dollars and cents to you. Give your cows more freedom and comfort and they will produce more for you.

There's no denying the fact that cows are always more comfortable in STAR Stalls and Stanchions. The STAR Stanchion fits the cow's neck as though it was made to order. You can adjust it to just the right width by loosening two screws. The STAR Alignment Device keeps her in line at the gutter—lengthens or shortens her bed instantly. This means a clean cow bed and clean cows.

With the STAR "Unit System" you can put in one stall or a hundred to fit your herd and add more stalls as your herd increases. There are many features in STAR Stalls and Stanchions that you do not find in other barn equipment. Features that are the result of many years of dairy barn experience, and that mean much to you in cow comfort and in your profits.

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Tank Heaters and
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Specialties

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Equipment



New Sources of Income

(Continued from page 451).

skim-milk. All the calves didn't need was fed to the brood sows.

After he had his new system working, his books showed that by buying fourteen tons of grain feeds and six brood sows he had sold \$2,500 worth of pork and has ten better calves than he had ever raised by feeding nearly all of the skim-milk they would eat until they were nearly ten months old.

The chances are that if this dairyman had not studied the feeding problem and opened a new branch line to Pigston he would be wasting more than three-fourths of the value of his skim-milk and wondering why dairying failed to pay satisfactory returns upon his investment. Experiments show that skim-milk has a far greater value when fed to very young animals than to the older ones, and furthermore that it produces best results when fed along with the proper mill feeds to supplement fats removed in skimming, and yet there are thousands of dairymen who are so busy with crops and cows that they do not attempt to develop the other branches of their business.

Baby Beef.

When we speak of producing beef as a side line on the dairy farm many dairy experts rise up and say with unchanging finality, "It can't be done at a profit." I am going to tell how one of the most successful dairymen in Indiana has worked out the problem. Mr. Renick appreciated the economic value of the dairy cow and started about ten years ago to make milk an important item in his farm's cash products. In the early days a trial was made of the special-purpose dairy cows under the supposition that milk could be most cheaply produced by them. Results in the main were satisfactory from the standpoint of dairy products alone, but the discarded cows returned an insignificant amount, so that the losses each year from sacrificing cows and calves was keenly felt.

The choice finally settled upon Red Polls as being the best cattle for combined milk and beef production. Gradually the herd has been improved by the use of high-class sires, and the buying of females until a good milk yield is maintained throughout the lactation period, which seldom allows the desired six or eight weeks rest before the next calving. Some of the cows have yearly records of from eight to eleven thousand pounds which attest the dairy capacity of the cattle. It has been observed that the life of usefulness as milkers is a few years longer with the Red Polls than with the dairy breeds formerly kept, and the calves are made into baby beef at a profit.

Nearly one hundred cows are kept on the farm. When they are unfit to keep for dairy purposes they are fattened and sold, bringing about as much again for beef as the discarded dairy bred cows. The calves are raised on skim-milk after the first few days, with the addition of grain until they are weaned. In the fall they are put on grain again, and as grass begins to fail they are given all they will consume until spring. The daily ration per head the first of March was fourteen pounds of cornmeal, 1.5 pounds of bran, 1.5 pounds of ground oats, twenty

pounds of silage and a liberal ration of alfalfa and clover hay. It is the custom to sell two carloads of baby beef in April averaging about eight hundred pounds in weight. The calves usually bring good prices in the big stock markets. The cows and calves are made the means of marketing the farm's crops. The farm pays good profits and the business is a success.

Poultry.

Poultry is a side line that affords an opportunity for very profitable development on the dairy farm. Skim-milk is a valuable feed for all kinds of fowl, and experiment station reports show that it can be made to return greater net profits when fed to poultry than to any other kind of farm stock. As a general proposition a flock of two hundred to three hundred laying hens will pay handsome profits on the dairy farm; after one gets above that number the old law of diminishing returns plays havoc with his plans.

Sheep.

Sheep also pay handsome profits when the dairyman does not attempt to keep more than he can handle to advantage and supply with the proper kinds of feed. A few sheep will keep down weeds in the pasture, consume waste feeds and give the farm a tidy, well-groomed appearance, while a larger flock will prove a disappointment to the man who is not in a position to give them proper and almost exclusive attention at certain times during the year. Of course, if a man has plenty of time, and has a natural love for the business, the raising of fancy winter lambs will pay greater profits, and he may be justified in keeping a larger flock. For the average dairy farmer it is my belief that about thirty well-bred mutton ewes will prove adequate on a one-hundred-and-fifty-acre farm.

Horses.

By keeping brood mares for farm work and raising a few draft colts for sale each year it is possible for the dairy farmer to cut down the cost of team work to the lowest possible notch and add a tidy sum to his net income. The cost of team work is one of the heaviest charges against the dairy business and every dairy farmer should plan to derive this double income from his work teams, one from their work on his farm, the other from the sale of young colts or young work teams. The well-trained colt is one of the most profitable finished products that can be produced on the well-managed dairy farm.

Dairying and Orcharding.

Commercial apple growing is a branch of horticulture that is exceedingly well adapted to many dairy farms. The work of caring for the trees, harvesting the fruit, and marketing comes at times when other farm work is not pressing, and the manure from the dairy cattle is of great value in the orchard. In many sections of Michigan and New York dairymen find apple growing a highly profitable side line. Grapes, peaches and pears may also be grown successfully in sections where the climate is favorable for their production. One successful dairyman that I visited last summer is making a specialty of growing strawberries; the

High Crop Prices

Prices will probably continue steady and at a high level, according to President Thompson of the Federal Commission, who recently returned from a study of the agricultural conditions in England, France and Italy. He also says that crop conditions and prospects justify a strong demand for food and fibre products from the United States. Use

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is the title of a 56 page book containing information every farmer needs in relation to the proper use of fertilizers; it shows where profit is to be found, and how to get it. It is different from other fertilizer books and is not a catalogue. Any one of our offices named below will send it to you free. Simply mention this paper and ask for the book.

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"Profitable Dairying," a practical, commonsense text book that every dairymen should have in his library by G. H. Benderson and K. L. Hatch of Wisconsin. Tells how to feed and care for dairy cattle—how to make more money. FREE—together with latest Melotte catalog and details of our 15-year guarantee which is 100 per cent stronger than any other separator guarantee. Write TODAY.

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crop fits into his rotation practiced in growing food for his cattle. By hiring Italian pickers one man can look to the harvesting of the crop and there is no interruption in the other activities at that season of the year. As a rule it is not desirable to mix small fruit growing with dairying unless a man has sufficient business to warrant hiring help especially for the harvest season.

Pure-bred Cattle.

If a dairy farmer wishes to confine his efforts to a highly specialized dairy farming and still have two strings to his money-making bow he will be safe in investing in a few pure-bred cattle and depend upon the sale of improved stock to add to his income. The cost of breeding and developing pure-bred dairy cattle is considerably greater than is the case with scrubs but increased yields of milk should more than make good the added feed and labor charges, and if the business is well managed the sale of surplus breeding stock, within a few years will almost equal the sales of dairy products.

NEW YORK MILK EXHIBIT

THE greatest gathering of dairymen and farmers ever seen in New York City will occur during the week of April 21, when a series of conventions and a milk and dairy farm exposition will take place in the Seventy-first Regiment Armory. It is estimated that about thirty thousand farmers and others allied with the milk industry will attend this convention and exhibit.

One of the interesting exhibits at the convention will be that of the Dairymen's League whose membership numbers seventy thousand farmers. In this exhibit will be shown what the farmer does in his daily duties from 4:00 a. m. to 12:00 noon and from 1:00 p. m. to 9:00 p. m.

SEEDING CLOVER.

SEEDING of red and alsike clover will be general this month throughout all the clover sections. Broadcast seeding on winter grain may be done at any time and where the soil is dry enough it may be seeded with a drill. With clover seed as high in price as it is this year it will pay to be especially careful about the preparation of the seed bed. When the ground is still wet nothing can be done in the way of harrowing and preparing the seed bed, but wherever the ground gets dry enough to run a spike-tooth harrow across the rows of grain the seed should be harrowed in. This will not hurt the grain, especially if the teeth of the harrow are slanted backward. Wherever possible it will be advisable to seed with a drill as from two to four pounds less seed per acre will be required. With seed costing not far from fifty cents a pound a saving of this sort will be an important item; further than that, a better stand is usually assured when the seed is drilled, especially when care is taken to see that the seed is put down about one-half inch deep.

CLOVER CROP DAMAGED.

THE clover crop in many sections of the state has become heavily damaged as a result of the unusual weather conditions that have prevailed with the last year, the Michigan Agricultural College has been informed by its field agents. Much injury was done by the draught of last summer, but more has been caused by the mildness of the present winter, it is said. Because of the unusual openness of the season, the reports declare that much "heaving" has occurred.

As substitute one-season hay-crops, the farm crops department of the college is recommending corn, millet, peas and oats, sorghum, Sudan grass, soy beans, or oat hay. If it is desired, information as to which of these crops are best for given localities, can be obtained from county agricultural agents.



"Silo Owners in this Neighborhood Find that an INDIANA SILO Will More Than Pay For Itself every year it is used"
J. Paul Long, Centerburg, O.

BUY an Indiana Silo now and next winter it will pay for itself and you will have a nice profit in your bank besides. The

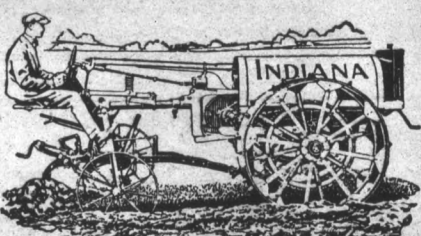
INDIANA SILO

will double the value of your silage crop; double the number of cattle you can feed from the same acreage; increase the quantity of the milk and cream you get; put more pounds on your beef cattle. And think of the prices those things bring today!

Sixty Thousand Indiana Silos are now in use—many more than any other make—and the reason is that large purchasing power and long experience enable us to give more value for every dollar invested. Ask Indiana Silo owners. You needn't pay for an Indiana until it pays for itself.

Write for our easy payment plan and descriptive booklet.

INDIANA ALL-ROUND TRACTOR
The World's Tractor



THIS TRACTOR and one man do the work of two men and four horses. Fuel at \$250 goes as far as \$700 worth of horse feed. Uses the horse implements you already have without expensive hitchers. Saves time spent taking care of horses. Replaces horses at all kinds of farm work on any size farm. Weighs no more than one large horse. That's why it really replaces horses, and really saves money for the farmer. It's a tractor that will plow, harrow, drag, drill, cultivate, mow and pull a binder. Gives you all the power you want but wastes none. Increases acreage you can cultivate and the acres you can devote to salable crops.

Write for the folder that tells what it will do on your farm.

THE INDIANA SILO COMPANY
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NEARLY a third of a century ago the United States Cream Separator introduced oil-splash lubrication. All the United States gears and bearings run in a constant oil bath.

Today the better automobiles use this system. It assures long life and smooth running.

The same engineers who invented this and other exclusive United States features have constantly worked on other refinements. In the last two years seven exclusive patents have been granted on the United States Disc Separator.

Besides being the last word in mechanical perfection, it is the separator that holds the world's record for close skimming.

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Watch your newspaper for this advertisement telling where you can see the United States Separator. Agents and dealers wanted in some localities.



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When You Write to Advertisers Please Mention This Paper.

FREE**-Postpaid**
This Big Sample
Box of My Famous
Healing Ointment

I want you to see for yourself what a wonderful healing preparation CORONA WOOL FAT COMPOUND is. I want to prove to you on your own horses and cows and WITH-OUT A CENT OF COST, how quickly it will heal and cure Galled and Sore Shoulders, Sore Necks, Collar Sores, Barb Wire or Other Cuts, Wounds, Scratches, Split Hoofs, Sore and Contracted Feet, Sore Teats on Cows, Etc.

C. G. PHILLIPS
The Corona Man**CORONA****WOOL FAT**

is unlike anything you ever tried or used. Don't confuse it with salves which contain grease and blister compounds. This remedy has no equal. It is not a grease but the fatty secretions extracted from the skin and wool of the sheep. It is readily absorbed by skin and hoof, penetrates to the inflamed inner tissues and

Heals Without Leaving a Scar

CORONA does not burn or blister, grows hair over cuts and sores, causes no pain, soothes and heals surprisingly quick. The free sample will prove my claim. A postal brings it postpaid, and I'll also send you my free book "HOW TO TREAT HOOF, WOUNDS, SORES, ETC." Send for both today. We also manufacture Corona Distemper Cure for Horses and Cows and Corona Balm for household use. Sold by leading blacksmiths, druggists, harness and hardware dealers.

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Sores etcFeed your dairy
and beef cattle**BUFFALO**Ask your dealer
for Buffalo**CORN**
GLUTEN FEEDWrite C. FRANCIS, 909 Ford Building, Detroit
for sample, literature, and particulars

It pays to make your own stock tonic, condition powder, etc.

Tix Ton-Mix with your own salt or cereal the year around keeps animals healthy.

A \$5.00 box makes \$40.00 to \$60.00 worth of medicated salt or \$75.00 worth of "stock tonic" - saves you big money. A \$2.00 box by parcel post will medicate a bbl. salt or 900 lbs. of cereal for cows, horses, hogs, and sheep.

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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, Ohio, Mich.**Cloverly Angus** Bred cows, heifers and bull
calves of good breeding.
GEO. HATHAWAY & SON, Ovid, 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. Avondale Hope born Mar. 25, 1917. Sire Halcyon Sequel Dam Cartrude of Halcyon Farm price \$15 F.O.B. Luella's Duke of Avondale born Jan. 1, 1918 Sire Lord Sunrise Dam Luella's Maid. Price \$109 F.O.B. Avondale Hero born Jan. 10, 1918. Sire Halcyon Sequel Dam Serena of Pittsfield. Price \$125 F.O.B. Avondale Mark born Feb. 6, 1918. Sire Halcyon Sequel Dam Winkle of Pittsfield. Price \$125 F.O.B. Avondale Mark born Apr. 9, 1918. Sire Lord Sunrise, Dam Popular Polly. Price \$100 F.O.B. Come and look over herd over.

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For Sale 5 Register Guernsey cows A. R. Re-
cord, cheap if taken soon; write
JOHN EBELS, R. 2, Holland, Mich.**Registered Guernseys**Bulls, and Bull Calves, good enough for any breed-
ing at prices you can pay.
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.
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Calves; write your requirements
WALTER PHIPPS FARM, 80 Alfred St. Detroit, Mich.Bull calf; he is a right good individual and well bred
will sell for \$100; have him recorded in buyer's name.
JOHN D. WILEY, Schoolcraft, Mich.**For Sale** Registered 'Guernsey Bulls,' A. R.
stock. Prices right.
EGGLESTON & WILKINSON, Parma, Mich.**HOLSTEIN COW**
EARN MOSTfor \$100 worth feed.
Do your cows earn 50 per
cent on your feed invest-
ment? Any purebred Holstein or good grade
will do that easily, as figures compiled by Hoard's
Dairyman show. Taking the average from 19
herds of purebred and grade Holsteins, owned
by patrons of a creamery in Jefferson County,
Wisconsin, it was estimated that for every dollar
(\$1.00) spent in feed, \$1.54 was received from the
creamery. Unless your cows do as well, they
are wasting their feed.

If interested in

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every way. They are from high producing A. R.
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for pedigrees and quotations, stating about age
desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.**Health of Michigan
Live Stock**

THE State Live Stock Sanitary Com-
mission is cooperating with the
United States government in controll-
ing tuberculosis in this state, the gov-
ernment now having three field men
actively cooperating; and an equal
number of state inspectors are suppos-
ed to be working with these govern-
ment field men.

At the present time, under the coop-
erative plan, 260 herds are being tested
for tuberculosis. On the waiting
list there are around 150 herds. Under
this plan, herds which pass two suc-
cessful tests without any tubercular
cattle having been found, are placed
on an Accredited List as being free
from this disease, and to remain on
this list, annual tests have to be made.
Herd owners are finding it to their ad-
vantage to be under state and govern-
ment supervision, and many buyers
from outside of the state are coming
here for cattle which are known to be
free from tuberculosis owing to these
activities in the control of this disease.
Representatives of the French and Bel-
gian governments have been in this
state recently, purchasing cattle from
these lists.

One thousand and twenty-four herds
have been tested by local veterinar-
ians during the last year, which indi-
cates that farmers and stockmen are
realizing the advantage of having good
clean herds.

During the year 1917, the state paid
out for cattle slaughtered on account
of tuberculosis, \$35,282.50. On account
of an increase in the appraisement by
the 1917 legislature, the sum during
1918 was increased to \$52,815.52. The
percentage of reactors in the state is
exceptionally small, which has given
Michigan cattle a good name through-
out the United States and Canada.
Health authorities all over the country
are realizing the importance of this
work, not only from the standpoint of
the economical value of the cattle, but
from the standpoint of health as well
in the consumption of meat and milk
products.

The United States government also
has three inspectors in the field coop-
erating with the Live Stock Sanitary
Commission in the control of hog chol-
era. The losses have been reduced
from 100,000 three years ago to about
2,500 the present year. The county ag-
ricultural agents have cooperated in
these activities. The local veterinar-
ians have been given assistance by the
United States Bureau of Animal indus-
try and state men. At no time during
the past year has cholera become epi-
demic in any section of the state, ow-
ing to the cooperation of the veterinar-
ians and stockmen in assisting in the
control of this disease.

Outbreaks of rabies have occurred
during the past year in Montcalm,
Kent, Mecosta, Ottawa, Clinton, Ionia,
and Eaton counties; but since the first
of the year, no outbreaks of this dis-
ease have occurred.

It seems necessary at this time for
the enactment of stringent dog legis-
lation, both for the protection of the
human family and domestic animals
against rabies, and also to prevent the
ravages of dogs among our rapidly in-
creasing sheep flocks.

Only five cases of glanders among
horses have occurred during the past
year.

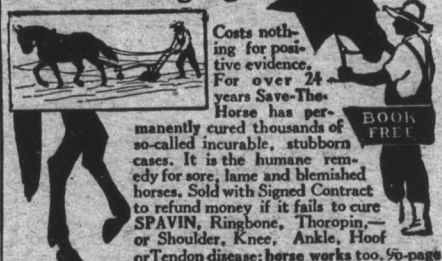
Number of milch cows in the state
January 1, 1918, was 848,000, or a de-
crease of about 15,000. Other cattle
have decreased 20,000; sheep have in-
creased 239,000, and hogs have increas-
ed 77,000 during the past year.

Sheep scabies has broken out in sev-
eral counties in the state. However,
at the present time it seems to be well
under control, but will need watching
during the coming season to prevent it
from becoming widespread over the
state.

H. H. H.

Sell Your Milk
Don't Feed It to Your Calves!Raise the Calves Easily, Suc-
cessfully and Profitably on**Blatchford's**
Calf Meal

In the United States alone more than
1,000,000 calves were raised on Blatchford's Calf
Meal last year. It puts calves through to a
healthy, vigorous, early maturity at less than
one-half the cost of milk. Write for booklet:
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We'll send it free, also name of your nearest dealer.

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and Working Again

Costs nothing for positive evidence.
For over 24 years Save-The-Horse has per-
manently cured thousands of so-called incurable, stubborn
cases. It is the humane rem-
edy for sore, lame and blemished
horses. Sold with Signed Contract
to refund money if it fails to cure
SPAVIN, Ringbone, Thoropin,
or Shoulder, Knee, Ankle, Hoof
or Tendon disease; horse works too, 50-page
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or Choke-down, can be
reduced with**ABSORBINE**

also other Bunches or Swellings. No blister,
no hair gone, and horse kept at work. Eco-
nomical—only a few drops required at an appli-
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ABSORBINE, JR., the antiseptic liniment for man-
kind, reduces Cysts, Wens, Painful, Swollen
Veins and Ulcers. \$1.25 a bottle at dealers or
delivered. Book "Evidence" free.

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ment for Lump Jaw in cattle.**Fleming's Actinoform**

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Tag your stock—best and cheapest means of
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Name, address and number stamped on tags.
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F. S. Burch & Co., 145 W. Huron St. Chicago**BULL CALVES**

Sired by
Mapleside
Korndyke
No. 112849. The sire's dam at 2½ years, grand-
dam at 3½ years, and great grand-dam have
semi-official records averaging 842 lb. butter in
1 year. Dams of calves have A. R. O. records up
to 19.23 lb. butter in 7 days. Write for breeding
and prices.

PEACELAND STOCK FARM
Three Rivers, Mich. Chas. Peters, Herdsman
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CATTLE

"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 Glück Vassar Bell, 30.57 lbs. of butter in 7 days and 121 lbs. in 30 days. Her butter fat test is 5.2%. 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,

Registered Holstein Bull calves from A. R. O. cows up to 29.32 lbs. butter in 7 days, grandsons of the \$50,000 bull.
O. H. GIDDINGS, Gobleville, Mich.

831.43 lb. butter in 305 days 30.2 in 7 days: gddam. Jonathan Heng. Lad, gdsire 21.73 lb. dam of bull calf 1/2 white. 3 heifer calves 27 lb. sire not related. Terms easy.
M. L. McLAULIN, Redford, 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 them.
L. E. O'CONNELL, Fayette, Ohio

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.

\$50.00 buys your choice of three Registered Holstein Friesian bull calves splendid individuals and bred right sired by a grandson of King of the Pontiac's buy one and raise a herd sire, bull calf for sale the same breeding ready for service, marked half white and black \$100 buys him del. Henry S. Rohlf, R. 1, Akron, Mich.

For Sale Registered Holstein bull calf. Born Dec. 13 1918, mostly white. Dam dau. of a 24.13 lb. cow, write for price. Delivered. 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.

Reg. Holstein Bull Calves dandles at \$50 reg. and del.
J. ROBERT HICKS, St. Johns, Mich.

For Sale Reg. Holstein bull, 17 months old, from 30.63 lb. sire & a 27.13 lb. dam.
T. B. GILKES, Howell, Mich.

Registered Holstein bull 15 mo. old perfect individual, 1/2 white, 30 lb. Pontiac breeding. Price only \$125 delivered. B. B. Reavey, Akron, Mich.

Registered Holstein Bull, yearling, extra good, 25 lb. granddam, sire's dam 27 lb. 3 yr. old.
LEWIS WALKER, Howell, Mich.

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.

BUTTER BRED JERSEY BULLS
CRYSTAL SPRING STOCK FARM,
Silver Creek, Allegan County, Michigan.

JERSEY BULLS
Ready for service FOR SALE
WATERMAN & WATERMAN, Ann Arbor, Mich.

The Wildwood Jersey Farm.
Bulls for sale by Majesty's Oxford Fox 13424 and Emment Lady's Majesty 150934, and out of R. of M. Majesty dams.
ALVIN BALDEN, Capac, 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.

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. City Phone 25.
E. J. TAYLOR, Fremont, Mich.

Herefords Polled and Horned blood lines embrace Fairfax. Polled Perfection and Prime Lad 9th breeding. Prices reasonable.
COLE & GARDNER, Hudson, 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

Both sexes and all ages for sale also horned and polled bulls in service. Governor by Prince Donald by Prime Lad 9th, Militant Farmer by Imported Farmer, Fairfax Farmer by Militant Farmer, Dam by Perfection Fairfax.

ALLEN BROS., Paw Paw, 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

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. Plintom, 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.

Shorthorns Scotch and Scotch Topped cows and heifers, priced right. Come and see them or write W. B. McQUILLAN, R. 7, Howell, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archer Hope, Avondale, Maxwell Sulton and White Hall Sulton by the Ocola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Five Shorthorn Bulls ready for service. One herd bull 4 years old.
W. F. BARR, Aloha, Mich.

Stockers & Feeders For Sale
130 Shorthorn Steers ave. 1065 lbs.
170 Hereford Steers ave. 930 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 CARRON, R. 3, Ottumwa, Ia.

Milking Shorthorns Clay bred young bulls 3 to 10 months old.
DAVIDSON & HALL, Tecumseh, Mich.

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., Imlay 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.

Milking Shorthorns Bulls only Clay bred.
O. M. YORK, Millington, Mich.

Cattle For Sale Stockers & feeders, from 500 to 1000 lb. Write your wants.
ISAAC SHANSTROM, Fairfield, Iowa.

WRITE for description and price of a 7 mo. old Grandson of the \$50,000 bull. Also a granddaughter of Korndyke Butter Boy. Bred to freshen Aug. 21, 19. Breeder of reg. stock only. H. E. Brown, Breedsville, Mich.

HOGS

Serviceable Berkshire Boars and White Leghorn Cockerels.
PRIMEVAL 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 private. 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 Jersey's-A few extra good fall boars sired by Orion Cherry King Col. 2nd. Bred sows all sold.
W. C. TAYLOR, Milan, Mich.

Registered Duroc Gilts

Descendants of the leading strains: Cherry King, Defender, King of Col's, 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.

50 DUROC

bred sows and 50 fall pigs. You need a litter by Orion's Fancy King the biggest pig of his age ever at International fat stock show. Catalog tells all.
NEWTON BARNHART, St. Johns, Mich.

OAKWOOD FARM

Nothing for sale at present booking orders for spring pigs (Durocs). Tax Payer and Gold Model breeding.
RUSH BROE, Romeo, 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 Jerseys. A few choice gilts bred to Brookwater King Special 111467. (A full brother to Brookwater Lass D. the grand champion sow at the 1918 International). Carey U. Edmonds, Hastings, Mich.

Duroc Jersey Sows, Large type, heavy boned, 1000 lb. herd boar.
JOS. SCHUELLER, Weidman, Mich.

FOR Sale Duroc Jerseys of the big boned type fall pigs of either sex and taking orders for spring pigs.
CHAS. BRAY, Okemos, Mich.

We Want Duroc Bred Gilts, fall gilts & boars. State best prices and weights.
BELROSE FARMS, Richford, New York.

Hampshires Boars at a bargain bred gilts all sold.
JOHN W. SNYDER, R. 4, St. Johns, 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.

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

Chesters, March and April pigs in winning stock prices reasonable satisfaction guaranteed.
F. W. ALEXANDER, Vassar, Mich.

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.
—TODAY—
FOR FREE BOOK
"The Hog from Birth to Sale"
THE L. B. SILVER CO.
196 Heights Temple Bldg.
CLEVELAND, OHIO

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. O. 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 Grandell's prize hogs, Cass City, Michigan.

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, Marlette, Mich.

O. I. C.'s big type serviceable boars. Yearling sows and gilts bred for spring farrow.
G. P. ANDREWS, Dansville, Mich.

O. I. C. Bred Gilts All Sold.
H. W. MANN, Dansville, Mich.

O. I. C. Boar, 14 months old. Large fall pigs either sex.
O. J. THOMPSON, Rockford, Mich.

O. I. C. Gilts bred for summer farrow and a few fall boar pigs any of them good enough to ship. C. O. D.
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.'s 2 last July and 4 last Sep. 6. boars, good growthy fellows. Farm 1/2 mile west of Depot.
OTTO B. SCHULZE, Nashville, 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.

For 25 Years We have been breeding Big Type Poland China hogs of the most approved blood lines. Our new herd boar "Michigan Buster" is a mighty good son of the great "Giant Buster", dam "Mow's Miss Queen 2". Some breeding! We are all sold out except a few fall pigs at \$25.00 each.
J. C. BUTLER, Portland, Mich.

Big Type Poland Chinas

A 400 lb. Aug. 23. 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.

P.C. bred gilts sold. For sale herd boar prospect 17 mo. old, wt. 600 lb. with quality, sire Buster Giant, 289339, dam Nemo L. 548940 an 800 lb. sow in flesh. Sire sold for \$1500, priced reasonable. Free Livery from Farms.
W. E. LIVINGSTON, Parma, Mich.

Big Poland Chinas with quality. For sale, summer and fall gilts, open or bred.
G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Large type Poland China's bred 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.

L. S. P. C. A few gilts bred for April & May farrow at bargain to close them out at once.
H. U. SWARTZ, Schoolcraft, Mich.

Big type P. C. fall boars the big prolific kind, their breeding traces to the best herd in Ill. Iowa, & Neb.
C. E. GARNANT, Eaton Rapids, Mich.

Large Type P.C. Nothing for sale now. Will be in market with better than ever this fall. If interested counts.
W. J. HAGELSHAW, Augusta, Mich.

Big Type P. C. boar and bred gilts. Choice A. A. WOOD & SON, Saline, Mich.

Big herds, the big bone prolific kind with size and quality.
E. J. MATHEWSON, Burr Oak, Mich.

Big Type Poland's all sold out, nothing for sale at present. Booking orders for spring pigs. Thanking my customers. L. L. Chamberlain, Marcellus, Mich.

Mammoth Poland Chinas all sold. General Jones No. 317249, son of Gorstdale Jones heads our herd. Clyde Weaver, Ceresco, Mich.

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.

Stallions For Sale

One Percheron Stallion and one Imported English Shire for sale. These stallions will be sold at sacrifice prices in order to close out a business which I have charge of. Arch. Marshall, Trustee, Bear Lake, 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.

For Sale Belgian Stallion, if you want to buy a draft stallion you are invited to see this horse and his colts, and our neighbors.
W. J. QUIGLEY, R. 2, Grass Lake, Mich.

One Reg. Clyde Stallion coming 3 years old. Sired by an Imported Stallion weighing 2100 lbs. and out of Imported Mare weighing 1800 lbs. The mare won first at Michigan State Fair 1916. This colt will make a 2000 lbs. horse. Priced to sell, write or call at once.
WM. L. ORANDELL, Cass City, Mich.

Stallion for sale Clydesdale Sylvander's Favorite No. (15348) 1822, weight about 1900 lbs. is in good shape guaranteed in every way.
Dan McIntyre, R. 1, Box 54, Sault Ste. Marie, Mich.

PERCHERON MARE

Aged 4 yrs. bred to College Stallion fold this summer. Good mare.
HARRY E. SAIER, Seedsman, Lansing.

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

Percheron Stallions and mares at reasonable prices; inspection invited.
F. L. KING & SON, Charlotte, Mich.

For Sale two Registered Black Percheron Stallions one 3, one 5 years old in spring both sound.
JOHN LULHAM, Carson City, Mich.

FOR SALE 3 Mule Colts 2 yrs. old.
Mr. FRANK QTT, R. 2, Box 46A, Wayne, Mich.

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, March 20.

WHEAT.

Wheat prices have advanced. The situation is strong, due largely to the opening up of European markets, the failure of the crop in India and the shortage of the Japanese rice crop. The general opinion is that the surplus stocks of grain that have been a burden on the market for some time past, are about to be used up and that a lively situation will probably develop. One year ago wheat sold on the local market at \$2.17 per bushel. Present Detroit prices are:

No. 2 red	\$2.35
No. 2 mixed	2.33
No. 2 white	2.33

CORN.

Corn prices touched the highest point of the season at the opening this week. The news is now mainly bullish. Receipts have been largely cut off by heavy rains throughout the corn belt, while the demand for the grain is rapidly developing through prospective shipments to central Europe. The U. S. visible supply decreased 633,000 bushels last week, making the total visible 3,374,000 bushels as compared with 12,757,000 bushels a year ago. Argentine strikes continue. At Detroit No. 2 corn sold at \$1.65 at this date in 1918. Present prices here are:

No. 3 corn	\$1.57
No. 3 yellow	1.60
No. 4 yellow	1.57
No. 5 yellow	1.55
No. 3 white	1.59

Chicago.—Shorts hastened to replenish their supplies this week when the trading took a strong bullish turn and prices advanced to the following: No. 3 yellow \$1.56½@1.58; No. 4 yellow \$1.54@1.55; No. 5 yellow \$1.49@1.50; May \$1.43½; July \$1.35¼.

OATS.

This deal followed the trend of corn with prices on the local market showing a one cent advance over the close of last week. Bad roads have reduced receipts at country elevators. Farmers are generally dissatisfied with the price now being paid. The visible supply shows a decrease of 608,000 bushels for the week. Rains are delaying seeding in the Ohio and Missouri valleys. A year ago the grain was selling on local market at 95c for standard. Present Detroit prices are:

Standard	66½
No. 3 white	66
No. 4 white	65

RYE.

Further advances follow renewed buying in rye circles. An active export demand has developed since central European peoples are especially partial to this grain. On the local market the price is now bid up to \$1.60 for cash No. 2.

BARLEY.

There is a good export demand for barley and prices are higher as follows: Cash No. 3, \$2@2.10; No. 4, \$1.90@1.95 per cwt.

BEANS.

While the prices are holding about steady with a week ago and the movement is draggy, a general belief prevails that with the early opening of European markets and the lifting of government embargoes, the demand for this product should show improvement. It is reported that a steamer carried 70,000 bags of beans from New York to Antwerp and another takes nearly 25,000 bags from this country to Genoa. By opening up the foreign outlet and by prevailing upon American retailers to reduce prices to consumers, relief from the present inactive situation should follow. In New York pea beans of choice grade are quoted at \$7@7.25 and medium choice at \$7.25 per cwt. A heavy supply is reported at Chicago with the product moving slowly at \$6.75@7 for machine-picked pea beans, and extra fancy hand-picked demanding a sharp premium over these figures. Some Michigan jobbers who a fortnight ago were offering \$5 have advanced price to \$6. The Detroit market is doing nothing.

FEEDS.

All quotations are advanced over those reported last week. Bran is now

\$45; standard middlings \$46; fine middlings \$48; coarse corn meal \$60; cracked corn \$62; chopped feed \$50 per ton in 100-lb. sacks to jobbers.

SEEDS.

Another advance in seed values is reported. Prices are: Prime red clover \$27.50; alsike \$19.75; timothy \$5.

HAY.

The hay market is higher with supplies limited. No. 1 timothy \$28.50@29; standard timothy \$27.50@28; No. 2 timothy \$26.50@27; No. 1 clover at \$25.50@26.

Pittsburgh.—The demand for hay is improving and prices are higher, as follows: No. 1 timothy \$30.50@31; No. 1 light mixed \$28.50@29.50; No. 1 clover mixed \$29@29.50; No. 1 clover \$28.50@29.

POTATOES.

The tone of the potato market continues about steady, with narrow fluctuations. Forty-six cars moved from Michigan points last Saturday and on the same day sixteen cars were imported from Canada. On the Detroit market U. S. grade No. 1 are selling at \$2.60 per 150-lb. sack; in New York the same grade is \$2.75; at Columbus \$2.75; at Pittsburgh \$2.70; at Cleveland \$1.85 per cwt; at Buffalo \$1.75; at Philadelphia \$1.50; at Cincinnati \$1.75@1.85; at Indianapolis \$1.80; at Chicago the same grade from Wisconsin brings \$1.75@1.85. Michigan growers are receiving \$1@1.15 per

cwt. at warehouses. Receipts from the growers are very light.

BUTTER.

The improved demand for condensed milk is undoubtedly playing a part in the advance for butter prices. On the local market fresh creamery stock is selling to jobbers at 60½@62c per pound. Butter is higher in Chicago with creamery grades at 55@63. The New York price range is 63@67½c; in Philadelphia western creamery extra is quoted at 67c.

CHEESE.

Cheese prices advanced sharply last week in harmony with the change in butter values. The movement has been fairly active especially on export account, as France and the Scandinavian countries are coming into the market. At Detroit Michigan flats bring 30c; single daisies 30½c; brick 28½c; longhorns 32c.

POULTRY.

The demand is active with desirable hens and chickens especially wanted. The market for live stuff is firm as follows: No. 1 springs 33@34c; stags 26@27c; hens 33@34c; small hens 31@32c; roosters 23@24c; geese 24@25c; ducks 40c; turkeys 35@36c.

EGGS.

Egg values advanced slightly since the report of last week, but are again on the decline. At Detroit fresh extra firsts in new cases are taken by job-

bers at 40½c and fresh firsts at 40c. Chicago prices are 38½@38¾c for firsts, and 37½@38c for the ordinary firsts. In New York nearby western stock is quoted at 42@47c. In Philadelphia western extra firsts and firsts are quoted at \$12@12.30 per case.

GRAND RAPIDS

Rye has been moving freely all the season and overseas shipment orders out of Grand Rapids have been between 20,000 and 25,000 bushels. Milling firms pay growers 91c per bushel. There has been a free movement of potatoes the past week but the prices showed no change from the previous week at \$1@1.15 per cwt. Beans are still dull and movement light. Dealers offer growers \$6 per cwt. for Michigan white. Demand for cabbage and onions has practically exhausted Michigan grown in this section of the state. There is yet some wheat in farmers' hands. Under some changes in the government rulings last week, millers pay \$2.33 for No. 2 red and \$2.31 for No. 1 white, per cwt. Western Michigan potato and fruit growers are endeavoring to form an association for the purpose of improving marketing conditions. A meeting will be held at St. Joseph on Tuesday, under the auspices of the Michigan Fruit Packers' Association.

DETROIT CITY MARKET

Very little trading is done on our local market with prices generally holding firm. Apples are selling all the way from \$2@4.50 per bushel; white cabbage \$1@1.25; red cabbage \$1.25@1.75; potatoes 95c@1; onions \$2@2.50; turnips \$1.25@1.50; navy beans 7@7½c per pound; country butter 60c; dressed pork 22@23c; eggs 45@50c.

HOG PRICES.

The recent boom in swine prices makes prices paid in recent year look low, and yet they were far above the prices recorded in normal times. Top hogs brought one year ago \$17.80, two years ago \$14.95, three years ago \$9.75 and four years ago \$6.95. Pigs are marketed very sparingly, few farmers caring to sacrifice healthy growing pigs at this time. Provisions have had an enormous boom in prices, following the same course as hogs, and in a single week pork advanced \$4.50 a barrel, with lard and ribs showing similar upturns under heavy buying. Pork has sold a number of times of late as much as \$1 higher in a day. The foreign demand for American lard and cured hog meats is on an enormous scale, far exceeding all past high records, and it is expected to continue heavy for a long time ahead.

NEWS OF THE WEEK.

(Continued from page 450).

who suffered losses when the steamship Lusitania was sunk by German submarine in May, 1915.

Tuesday, March 18.

MEMBERS of the American Expeditionary Force are forming a society of the veterans of the great war at a meeting in Paris.—Dr. Von Kuehlmann, former foreign minister of Germany, is quoted as saying that the Germans will be in Paris by 1925, and that Germany is recuperating faster than is generally thought.—Finland recognizes Poland as an independent nation.—Surplus canned goods in the hands of the War Department will be used up and not turned back into commercial channels.—Steamers building on the Great Lakes will be ready to move 2,500,000 bushels of grain as soon as navigation opens.—New York and New Jersey breweries declare they will resume making beer containing two and three-fourths per cent alcohol in spite of the ruling of the internal revenue department.—Floods in the Saginaw valley take four lives and destroy thousands of dollars worth of property.

Herr von Braun said Germany would ask for 1,400,000 tons of grain and a monthly importation of 100,000 tons of pork and fats, in addition to condensed milk, rice, oat meal, other commodities required particularly for invalids, infants and hospitals. He estimated the cost of these shipments at 5,000,000,000 marks (\$1,250,000,000).

Live Stock Market Service

Reports for Thursday, March 20th

BUFFALO.

Hogs sold up to \$20.25 today and pigs at \$19. Lambs are going at \$21.25 @21.50 and calves at \$19. The cattle trade is steady with yesterday.

DETROIT

Cattle.

Canners steady; all other grades active and 25c higher.
Best heavy steers.....\$15.00@16.50
Best handy wt bu strs... 13.50@14.50
Mixed steers and heifers... 12.00@14.00
Handy light butchers... 11.00@12.00
Light butchers..... 8.50@10.00
Best cows..... 10.00@11.50
Butcher cows..... 8.00@ 9.00
Cutters..... 7.00@ 7.25
Canners..... 6.00@ 6.75
Best heavy bulls..... 9.50@10.00
Bologna bulls..... 8.50@ 9.00
Stock bulls..... 7.50@ 8.50
Feeders..... 9.00@11.00
Stockers..... 8.00@10.00
Milkers and springers...\$ 65@ 125
Veal Calves.
Market steady.
Best.....\$17.00@18.00
Others..... 10.00@14.00

Sheep and Lambs.

Market strong.
Best lambs.....\$ 20.00
Fair lambs..... 18.00@19.00
Light to common lambs.. 14.00@16.50
Fair to good sheep..... 13.00@13.75
Culls..... 7.00@ 9.00

Hogs.

Market strong.
Pigs.....\$18.00@18.25
Mixed..... 19.25@19.50

CHICAGO.

Hogs.

Estimated receipts today 33,000; holdover 3,053; market fully steady with yesterday's close. Bulk of sales at \$19.35@19.70; heavy, 250 lbs. up, medium, good and choice at \$19.65@19.80; medium, 200 to 250 lbs, medium, good and choice \$19.50@19.70; light, 150 to 200 lbs. common, medium, good and choice \$18.85@19.65; light lights, 130 to 150 lbs. common, medium, good and choice \$17.50@18.75; heavy packing sows, 250 lbs up, smooth at \$18.50@19; packing sows, 200 lbs up, rough \$17.25@18.25; pigs, 130 lbs down medium, good and choice \$16.75@17.50.

Cattle.

Estimated receipts today are 15,000. Choice butchers, she stock and best steers steady; all other cattle and calves 25@40c lower. Beef steers, medium and heavy weight, 1,100 lbs.

up, choice and prime \$18@20.25; medium and good \$13.25@18.25; common \$7.75@13.25; light weight, 1,100 lbs. down, good and choice \$15@18.75; common and medium \$10@15; butcher cattle, heifers, common, medium, good and choice \$7.25@15.25; cows, common, medium, good and choice \$7@15; bulls, bologna and beef \$8.25@12.75; canners and cutters, cows and heifers \$5.50@7; canners steers \$7@10; veal calves, light and handy weight, medium, good and choice \$14@17; feeder steers common, medium, good and choice at \$9.25@15; stocker steers, common, medium, good and choice \$8@12.75.

Sheep and Lambs.

Estimated receipts today are 17,000. Opening slow but first sales are steady. Most of the packers bidding lower. Lambs, 84 lbs down, medium, good, choice and price \$18.85@21; do 85 lbs up, medium, good, choice and prime \$18.50@20.90; do culls and common at \$15.50@18.25; yearling wethers, medium, good, choice and prime \$16@19; ewes, medium, good and choice \$12@15; do culls and common \$6.25@11.25; feeder lambs, medium, good and choice \$17.25@18.35.

BUFFALO.

Wednesday, March 19.

Cattle.

Receipts five cars; market steady. Prime steers \$17.50@19; fair to good \$16.25@16.50; plain and medium \$12@13.50; coarse and common \$10.25@10.75; prime yearlings \$16@17; best handy steers \$14.50@15; fair to good \$13.50@14; light and common \$10@11; best heavy heifers \$12@13; good butcher heifers \$11@12; fair butcher heifers \$10.50@11; light common \$8@9; best fat cows \$10.50@11; good butcher cows \$9@10; medium to fair \$7.75@8.50; cutters \$6@6.50; canners \$5.25@5.50; old rams \$4@4.25; fancy heavy bulls \$11@11.50; good butcher bulls \$10.25@10.50; sausage bulls \$8@9; light bulls \$7.50@8; best feeding steers \$10.50@11; common to fair at \$8@9.50; best stockers \$8.70@9.25; fair to good \$8.25@8.75; common \$5@7; milkers and springers \$75@150.

Hogs.

Receipts five cars; market 15@25c higher. Heavy and yorkers at \$20.25; pigs \$19.

Sheep and Lambs.

Receipts five cars; market is active, 25c higher. Lambs \$21.25; yearlings \$17@19; wethers \$16@17; ewes at \$14.50@15.

Calves.

Market steady. Tops \$19; grass calves \$5@8.

WOOL

Aside from the reported plans of the English government to mark down wool prices after April 1, there is everything encouraging in the situation from the position of the sheepman. The recent sales at Boston showed the market in this country to be decidedly bullish. So enthusiastic was the bidding that practically all the offerings went above the government minimum price and consequently were sold. Of 282 offerings made on the third day of the sale, only seven were withdrawn. No class of wool exhibited more popularity among the buyers than did the fleeces. Prices for these ranged from \$1.24 for quarter-bloods to \$1.70 for delaines. Dealers are soliciting consignments in producing states with a number of tentative agreements reported at 50c for fleeces. The general trade holds that this price is too high, that it should be around 40c to be safe. Growers' organizations have gone on record as favoring consignments. Very little foreign wool coming to the eastern ports. Exporters are said to be leaving Argentine without wool because of their inability to move cargoes on account of strikes.

THE NEW YORK PRODUCE MARKET.

Butter.—As jobbers and retailers were low in stock at the beginning of the week the demand from these sources has been active throughout the week. Receipts have been heavy because of the delivery of last week's supply which was held up because of the strike on the river. The active local demand coupled with buying by outside merchants and exporters has served not only to clean up all current receipts, but reserve stocks have been used to a considerable extent. Several thousand packages of butter have been purchased during the week for delivery in Scandinavian countries and France. As a whole, the week has been very satisfactory and quotations on all grades have advanced fully 3½c. There continues to be a marked scarcity of unsalted butter in spite of the fact that several carlots have been received during the week. At the close yesterday established quotations were as follows: Extras 61½c; higher scoring than extras 62½c; firsts 58½c; seconds 54½c. Unsalted butter is selling at a differential of from 3½c over the prices of salted butter.

Cheese.—The cheese market has been active throughout the week. Receipts have shown a decided increase but have cleaned up remarkably. Domestic trade is good and there has been active buying by exporters. The export activity seems to be limited to the Scandinavian countries and France but indications are that other countries will soon be in the market and an active cheese trade is expected throughout the season. High quality held cheese finds ready sale at 37½c. Average quality held cheese is quoted at 35½c. High quality cheese, current make, is quoted at 32½c. Average run is selling at about half cent less.

Eggs.—The irregularity of the egg market still continues because of the arrival of large quantities. However, demand has been good and accumulations are no greater than can be expected at this season with receipts high and the price high. There has been considerable export buying although that slowed down considerably because of a cable from England ordering a cessation of buying because of increasing supplies from Ireland. The first of the week witnessed a weak market but the demand has caused a strengthened condition. At the close firsts are selling at 40½c; extra firsts at 42c; extras at 43½c.

Poultry.—Receipts have been fairly heavy during the week. The market was weak at the outset but is stronger at the close. Good heavy fowls are selling at 36c; high quality chickens at 32c; stags at 27c; old roosters at 22c. Turkeys are quoted at 32c; ducks 40c; geese 21c.

BRITISH CUT MAKES THE WOOL TRADE UNEASY.

Government officials at Washington are in a quandary as to just what to do with respect to the wool auctions announced for the latter part of the month. The trade, it is understood, is anxious to have the auctions postponed until it has been definitely decided what the government decision will be about the seven and a half per cent reduction on wool prices recently announced by the British government.



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Also—these retailers are equipped to handle perishable products and want to be able to buy poultry, butter, and eggs, of us. And consumers like to buy them from the same retailer that sells meat.

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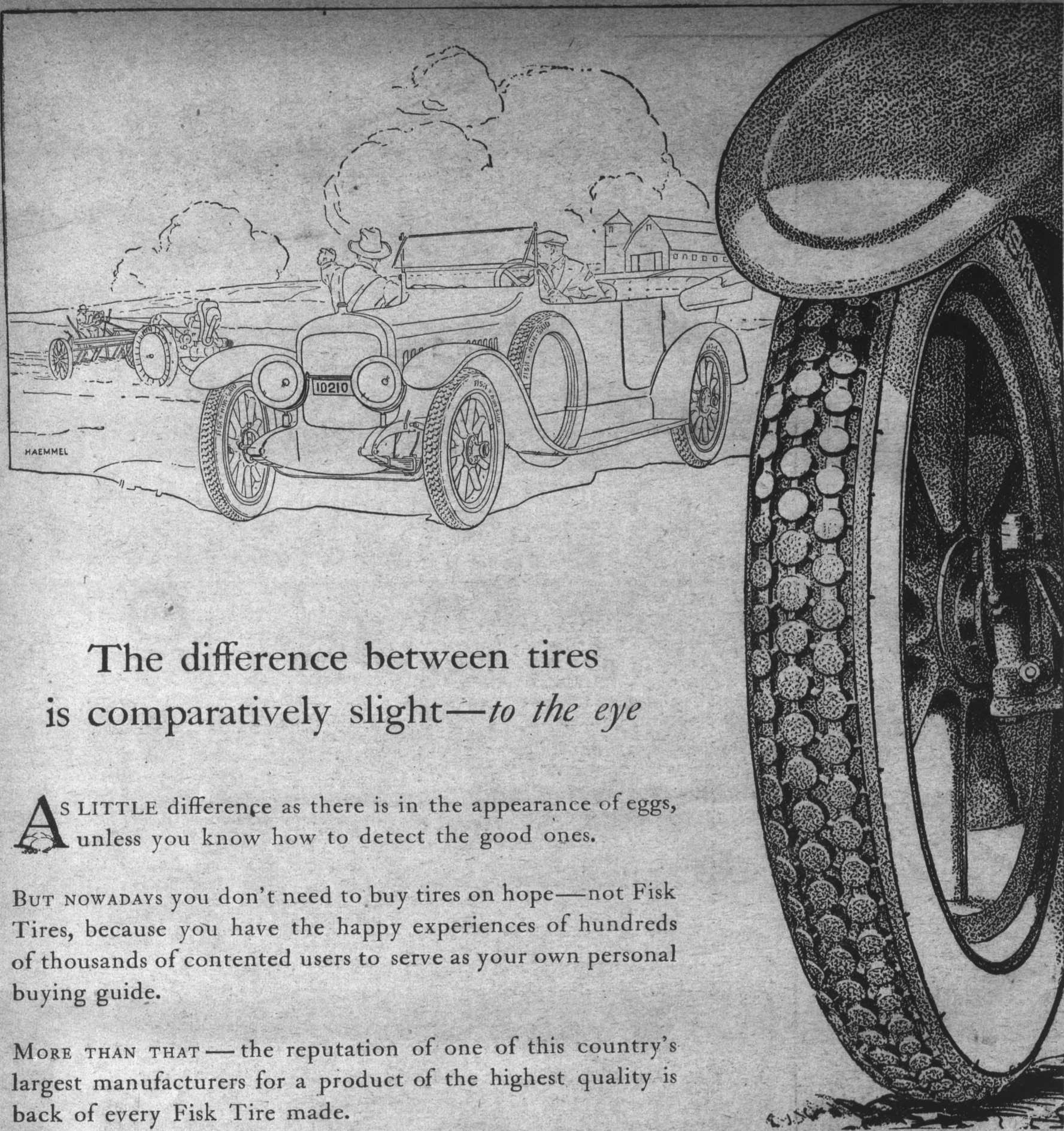
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