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Congress and the "Truth in Fabric" Bill

What Will Congress Do with this Important Measure?

SHEEP raisers all over the country are interested in the "Truth in Fabric" bill, introduced in the house by Representative Burton L. French, of Idaho, and in the senate by Senator Arthur Capper, of Kansas. This is one of the few really important measures now pending in congress. Its purpose is indicated by its title, "to prevent deceit and profiteering that result from the unrevealed presence of substitutes for virgin wool in woven fabrics purporting to contain wool and in garments or articles of apparel made therefrom."

The French "Truth in Fabric" bill provides that every manufacturer of woven fabrics purporting to contain wool, and of garments or apparel made therefrom, before being offered for sale or for transportation in interstate commerce shall stamp or tag the garment or article in such a way as to show plainly the percentage of virgin wool and other materials contained therein, and violations of this law are punishable by fines not exceeding five hundred dollars, or one year's imprisonment for the first offense, and for each subsequent offense not less than one thousand dollars or one year's imprisonment, or both fine and imprisonment in the discretion of the court.

The importation of any woven fabric purporting to con-

tain wool which is not stamped according to the provisions of this law in interstate commerce is prohibited, with fines or imprisonment for both the consignor and receiver.

The secretary of the treasury, the secretary of agriculture, and the secretary of commerce shall make uniform rules and regulations for carrying out the provisions of the act, and it shall be the duty of each district attorney to whom the secretary of agriculture or the secretary of commerce shall report any violation of the act, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States for the enforcement of the law.

Every manufacturer of woven fabrics purporting to contain wool, and of garments or articles of apparel manufactured therefrom, whether in the United States or in foreign countries, who offers or intends to offer such fabrics for sale in this country through interstate commerce, is required to secure a registration number from the secretary of commerce, who is given power to carry out the provisions of the act. Fines are imposed for violations of this clause.

The law provides that on the back of every yard of woven fabric purporting to contain wool, (Continued on page 404).

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DETROIT, MARCH 13, 1920

CURRENT COMMENT

National Farm Bureau

THE permanent organization of the American Federation of Farm Bureaus was completed at a delegate meeting in Chicago last week. A comprehensive report of this meeting will be found in another column of this issue. The plans approved for the formation of five divisions or bureaus which will have in charge investigations and work pertaining to transportation, trade relations, distribution, statistics and legislation, respectively, show that this organization will approach the solution of our farmers' problems in a more thorough and business-like way than has ever before been attempted by any agency. The pursuance of this policy, which is practically guaranteed by the type of men selected to lead in the work of this organization, will insure its success and a maximum of benefit to its members and the country.

A sound spirit of Americanism was again reflected by the delegates at this meeting, who went on record to the effect that, "Every citizen under the flag has the same right as every other citizen, and autocracies, whether of labor, capital or what-not, shall not impose upon any of our people; our fundamental laws were a safeguard in the days before the war and they are good enough today." In this connection the resolutions adopted denounced "any and all efforts of the Farmers' National Council to ally the agriculturists of America with the radicals in the industrial world."

The opportunities for effective and beneficial work in the farmer's interest, and the interests of the country at large through the advocacy of a "square deal" to all, loom large on the horizon of this movement. Mistakes will be made, since human leadership and effort is not infallible, but the results should be, and we firmly believe will be of great direct value to American agriculture and to all other classes, who must look to agriculture for their supply of foodstuffs and many raw materials. Even now, only a few months after its inception, this organization is more representative of our agriculture than any organization has previously been, and is thus better able to reflect the consensus of rural thought on questions of national import affecting the whole people, as well as those engaged in the industry of agriculture. With the rank and file of the farmers of our best agricultural states rapidly joining its ranks, its possibilities for useful work in these directions will be proportionately extended. As thus or-

ganized and conducted we have much to hope for and little to fear from the activities of the American Federation of Farm Bureaus.

Beet Growers' Round-Up

MORE than two thousand enthusiastic sugar beet growers from various parts of the beet growing sections of the state attended the round-up meeting of the Michigan Beet Growers' Association at Saginaw, Monday, March 8. The growers in attendance seemed determined to back up their leaders in the demand for a fair division of the profits in the raising of beets and their manufacture into sugar. It is not likely that any definite price demands will be made, although there is a strong sentiment among growers to refuse to grow any beets unless the manufacturers of sugar give consideration to the growers' ideas of fair prices. It is also apparent that the leaders, who have recently returned from Washington, feel confident that the government will step in and give the beet sugar industry a thorough investigation and endeavor to determine what constitutes a fair division of profits to both beet grower and manufacturer of sugar.

There appears to be a general feeling among the sugar beet growers of the entire country that there should be a feeling of mutual interest between all parties interested in the sugar industry if the business is to function properly, and to the interest of all parties concerned, from the beet grower to the consumer of sugar. And that all of these parties have an interest in the question and that their interests are mutual, and that instead

of working in the dark that they must place their cards on the table and play the game in the open. The growers feel, and rightly, too, that they, first of all, should be insured of a fair price for their beets in order that they may keep up their land, equipment and labor supply from year to year, and to feel sure that they will be given a square deal in the matter of sharing in the profits of the business. With a fair price for beets as a basis there would be no trouble in maintaining adequate sugar beet production to meet the requirements of the consumers, and all interests concerned would share in the prosperity of the industry.

The sugar beet growers of the country and their leaders are agreed that the time has come when the growers must conduct their business for dividends, the same as the sugar manufacturers have been doing for years, rather than merely to keep the sugar consumers' bowl full. They believe the question of making sugar is one that affects two parties, and that the grower of the sugar beets is the first one to be considered in the matter of profits. They take the stand that if the sugar manufacturers of the country can say to the people that sugar is going to be such and such a price, that they are entitled to put their feet under the same table and have something to say about what they shall receive for their beets. The Michigan sugar beet growers have demonstrated rather clearly that they are going to have something more to do with the sugar business than to sign their names on dotted lines. We believe that their claims are just, and are confident that with the press and other agencies working in hearty accord with their leaders that right will triumph.

American Farm Bureau a Permanent Organization

ON March 3 at Chicago the American Farm Bureau Federation was made a permanent organization by unanimous vote. Four hundred delegates were present. Since the organization meeting in November, twenty-eight states had ratified the constitution and were admitted to the association by the executive and credential committees.

Below are the names of states which ratified the original constitution, giving the number of directors from each, and a close estimate of the membership. Total membership is approximately 700,000, and total budget for the first year approximately \$200,000, according to the report of temporary secretary J. W. Coverdale.

States.	Voting Directors.	Membership.
New Jersey	1	4,000
Minnesota	2	17,000
Massachusetts	2	14,045
Illinois	4	50,001
Iowa	6	104,388
Colorado	1	4,000
South Dakota	1	3,000
Missouri	3	34,000
Kentucky	1	8,000
Michigan	3	31,000
California	2	19,000
Georgia	1	1,200
Arizona	1	1,500
Wyoming	1	6,000
New Hampshire	1	8,198
Vermont	2	12,000
Utah	2	31,000
Indiana	3	67,000
New York	4	15,000
West Virginia	2	14,000
Nebraska	1	30,020
Ohio	3	14,000
Idaho	2	5,000
Oklahoma	1	14,000
Maryland	1	14,000
Connecticut	1	14,000
Kansas	2	14,000
Texas	1	14,000

Permanent Officers.

James R. Howard, of Clemons, Iowa, was elected president, and S. L. Strivings, of Castile, New York, vice-presi-

dent. Executive committee members were elected as follows, by regions:

Northeastern Section.—E. B. Cornwall, Middlebury, Vermont; E. F. Richardson, Millis, Mass.; H. E. Taylor, Freehold, N. J.

Middlewest Section.—O. E. Bradfute, Xenia, Ohio; Chester H. Grey, Nevada, Mo.; Howard Leonard, Eureka, Ill.

Far West Section.—W. H. Walker, Willows, Calif.; W. E. Jamison, Loveta, Colo.; John F. Burton, Garland, Utah.

South Section.—Grey Silver, Martinsburg, W. Va.; James W. Morton, Athens, Georgia; George Bishop, Cardell, Oklahoma.

The directors voted to pay the president \$15,000 a year and allow \$3,000 a year for traveling expenses. It was decided that the president should be the foremost executive and leader of the organization. The executive committee will employ the secretary and determine where headquarters will be.

Provision for Different Finance.

It was voted to change the manner of paying dues from the present method of ten per cent of all Farm Bureau membership fees under the state organization, to fifty cents per member, this change not to go into effect sooner than January, 1921. Under the constitution, provision is made that no amendments will be effective until approved by a majority of the member states.

Dues Start April 1.

A ruling was made that dues be paid on the basis of paid membership dues by members in the County Farm Bureaus belonging to the State Association on the first day of each quarter of the year, starting April 1, 1920.

Program of Work.

At all meetings the program of work (Continued on page 396).

News of the Week

Tuesday, March 2.

THE food situation in Germany is reported to be very grave, and nothing in sight to bridge over the two months before grain harvest.—The United States Supreme Court holds that the United States Steel Corporation is not subject to dissolution by the anti-trust act.—The price of refined granulated sugar is reduced one cent a pound to thirteen and three-quarter cents on the New York market.—William A. Stone, former governor of Pennsylvania, dies.—The New Jersey assembly passes a measure legalizing three and five tenths per cent beer.—Sixty-three passengers are rescued from a steamer off the Halifax coast.

Wednesday, March 3.

THE United States government wishes to sell the Hog Island shipyards at Philadelphia.—The allied governments are planning modified terms to aid Germany in her present desperate straits.—United States Senate adopts without change the reservation to the peace treaty which provides that the United States is to be the sole interpreter of the Monroe doctrine.—Minnesota is to build a state-owned flour mill for testing and grading grain.—Sixty railroad labor organizations vote to cooperate in the establishment of a bi-partisan board to decide railway employment troubles.

Thursday, March 4.

IT is rumored that Hungarian troops are being mobilized to re-establish a monarchical government under former Emperor Charles.—Three persons are killed and many injured in a railway collision at Elizabethport, N. J.—Judge Sessions dismisses fifteen more defendants in the Newberry election trial at Grand Rapids.—Japan's position on the Shantung question will not be changed, according to the new Japanese ambassador to the United States.—The federal house passes a joint resolution providing for the return to this country of Polish-Americans who enlisted in the so-called Polish army.

Friday, March 5.

THE council of the League of Nations will convene on March 12 to select an investigation commission to go into Soviet Russia.—Congress adopts a resolution directing the judiciary committee to investigate the actions of the Department of Justice in connection with prices of Louisiana sugar.—New Jersey asks the United States Supreme Court to have the constitutional prohibition amendment declared null and void.—The Turkish cabinet resigns.—The house of representatives refuses to repeal the prohibition enforcement act by a vote of 284-86.—Mexico prohibits the shipment of hides to the United States.

Saturday, March 6.

THE allies decide to occupy Constantinople.—Holland refuses for the second time to deliver the former German emperor to the allies for trial.—The text of the Soviet Russia's peace note to the United States government on February 24 is made public.—Japan delivers 40,000,000 pounds of cane sugar to the Mediterranean ports of Europe.—Foreign exchange continues to advance and the British pound is now fifty-one cents above the low point reached on February 4.

Sunday, March 7.

THE Jugo-Slav government declares that the Adriatic problem will remain unsolved so long as d'Annunzio remains in Fiume.—Allied troops will be used if necessary to force Turkey to cease her massacres in the Marash district.—The Holland parliament votes to adhere to the plan of the League of Nations.—Fire of unknown origin destroys big warehouses at Dayton, Ohio, doing nearly a million dollars' worth of damage.—An agreement has been reached by the Belgian, French, Swiss and German railway administrations whereby traffic can be resumed.

Monday, March 8.

VIRTUAL decision is reached by the United States government to permit trade relations with Soviet Russia as soon as the allied countries have formulated a definite policy.—President Wilson accepts with reservations the proposal that Italy and Jugo-Slavia undertake the settlement of the Adriatic questions.—Instructors in Cornell University secure an advance in salaries amounting to twenty-five per cent.—The inter-church world movement announces that the 1920 budget of thirty American denominations amounts to \$336,777,572, of which \$229,000,000 will be expended in America.

The Farmer and Foreign Exchange

A Question of Unusual Interest to the Farmers of Michigan---By Sanders Sosland

I AM bullish on our farm, feed lot and orchard products because the laborers in the cities to whom we sell are getting more money than ever before and striking successfully for even higher wages."

In Michigan, and in other states as well, this is a common expression among farmers and stockmen and orchardists.

"Haven't our customers in this country got more money than ever before?" This is the way the farmers and stockmen and orchardists argue when discussing the outlook for the markets for what they produce.

When I hear a stockman or farmer express himself along these lines, I disagree because of one tremendously important exception. This exception is vital, extremely vital, to every Michigan farmer, every Michigan business man and every American. It's not a mysterious exception. It is simply the foreign exchange situation.

"Let the bankers worry about foreign exchange," is not an unusual remark from some farmers and stockmen who are urged to consider that factor in their markets and in their business. This, by the way, also applies to small merchants in towns and cities. I told a small merchant the other day to consider the foreign exchange situation in his buying plans, but he laughed. Every individual, whether a humble farm hand, the owner of orchards and farms, and the feeder or breeder of stock, as well as merchants, should consider seriously the meaning of the foreign exchange depression.

American farms and feed lots are catering not only to the consumers of the United States. Europe is a great customer. Besides, the consumers here are not dependent for earnings solely on the United States. This makes foreign exchange rates, or the value of European money in the United States, very vital.

As a result of the depression in foreign exchange, it is stated that the foreign demand for American farm, live stock and orchard products is seriously threatened. Europe has been the principal foreign buyer. The German mark, the standard of money in Germany, is worth only a cent today, compared with the normal par of 23.8 cents in American money. Even the English pound is worth only about \$3.30 in the United States today, compared with the normal value of \$4.86. The French franc is worth only about six cents, compared with the normal par of 19.3 cents. The Italian lire is worth only about five cents, against the normal par of 19.3 cents. Even Canadian currency in the United States is at a discount of about eighteen per cent.

A volume might be written in explanation of these serious shrinkages, the worst in history, in the value of European money, or currency. The simplest reason is that the Old World countries which took part in the war issued such vast amounts of paper money without correspondingly increasing their gold reserve that their paper marks, francs, lire and pounds are not equal to the pre-war values. Another reason is that these countries, having been destroying instead of producing, have been buying far more than years ago from the United States and other countries and selling far less. They sent gold to this country and to other lands to offset the excess of their purchases and sales until their gold reserves were cut down to a dangerous point. As a result, they are not now shipping gold. In other words, they are not on a gold basis today.

A noted statistician recently estimated that the world has increased its paper money circulation since the war by seven hundred per cent, or as compared with the total in the year before Europe plunged into bloodshed, while the gold reserves have increased hardly fifty per cent. The great bulk of the increases in the paper money circulation has been in the Old World.

The foreign exchange market is a market where bills or drafts are sold on foreign countries just as the domestic exchange market is a market where, for example, Chicago sells bills or drafts on New York or Buffalo for flour or butter shipped out of Michigan through millers and dairymen. With far more selling to Europe than buying from her, the foreign exchange market in New York has been flooded with offerings of bills on England, France, Italy and Germany. The offerings have come from packers and many other exporters. The demand has come from the importers who bring goods from Europe. The supply has been greater than the demand. So foreign exchange rates, or the value of foreign currency, has declined, being, of course, stimulated downward by the poor gold reserve position of Europe. Foreign exchange is still extremely weak, despite the fact that recent recessions were sensational. More new loan levels are expected.

With the German mark worth only a cent, the German who buys a pound of lard in the United States at twenty-five cents must pay twenty-five marks. Prior to the war, the German mark was worth 23.8 cents, so a little over a mark then paid for the pound of lard that costs twenty-five marks today. The Frenchman must pay about four francs for a pound of lard, against one and one-fourth francs for the same quantity when the French franc was at par in this country. The same com-

parisons may be made with eggs, fruit, and wheat and dozens of other products. As the shrinkage in the value of the foreign currency increases the cost of American products in that currency to the European buyer, he finds it necessary to buy less and less here. This is the basis for the nervousness over the outlook for reduced foreign trade in farm and other products. It is one of the reasons for lower hogs, lower cattle, lower eggs and lower corn. If Europe buys less food, more of our harvests will be offered on our own markets, competition will be reduced, and prices will fall.

With this brief outline of the meaning of foreign exchange depression to Michigan farmers, as well as to the producers of other states, it is well now to look into the volumes of business involved. One can gain a better idea of the significance of a reduction in foreign competition for American farm and feed lot products by comparing the export statistics of recent years.

More has been said of the adverse effect of depressed foreign exchange on the hog market than on any other farm product. Packers have recently issued pessimistic statements on the export trade in hog products. Few farmers, it appears, are aware of the fact that the official figures of the Department of Commerce show that the United States exported in 1919 an aggregate of about 2,600,000,000 pounds of hog products alone, the largest total in history. This movement, which was largely to Europe represents the dressed weight of over 14,000,000 live hogs. In 1913, the year before Europe plunged into war, the exports were equal to the product of about 600,000 live hogs. Prior to the European war the largest exports of hog products in a year were in 1898, when 1,723,564,071 pounds were exported.

The beef exports in 1919 were over 270,000,000 pounds or the product of about 451,000 live cattle. In 1918 the beef exports were 699,000,000 pounds, the product of over 1,000,000 live cattle. In 1913 only 36,193,757 pounds of beef were exported, representing the product of about 60,000 live cattle. Ponder these figures, and you will gain an insight into one of the big reasons for the decline of about \$4.00 per hundred weight in cattle prices in the past year.

The combined meat and dairy products exports in 1919 were valued at \$1,160,847,000, compared with \$941,219,000 in 1918. More than 265,000,000 bushels of wheat, including flour as wheat, were exported last year.

Comparisons of the butter, cheese, milk, fruit, steel, copper and other exports of the last few years with those

of the pre-war years show immense increases. For example, the United States exported of farm and all other products in 1919 total quantities officially valued at \$7,922,000,000. The 1913 exports were only \$2,484,018,000. In 1919 the imports to this country were \$3,905,000,000, against \$1,792,596, in 1913. The exports last year were the largest in history from the United States. They were responsible to a great degree for the high wages and scarcity of labor, as factories and farms were kept busy supplying not only the American population, but the foreign buyers for goods worth billions of dollars.

The foreign exchange situation presents another serious side. While the extreme cheapness of foreign currency discourages European buying, it is stimulating the sale of foreign goods to this country. A German who sells to the United States a steel knife for one dollar receives one hundred marks. Before the war one dollar in American money was worth only a little over four marks. The Frenchman who sells laces or notions to the United States for one dollar receives about fifteen francs, against five francs before the war.

What will be the consequences? Changes are not going to be witnessed over-night, but Europe has already reduced purchases and will cut down more on her buying in the United States. And she will, as her industries are restored, sell more and more foods to the United States. Reduced buying of manufacturing products by Europe will result in shorter hours for factories and less employment for labor. Wages will be affected unfavorably, as well as the demand for labor. This will reduce the present prosperity of domestic customers of farmers. With lessened foreign competition for American farm products, there will thus be pressure on markets from two sides—a weakened purchasing power of American consumers and larger offerings to these consumers because Europe is taking reduced supplies.

Europe has for many years been an extensive buyer of American farm products. This country is not going to lose all of its European business, but large decreases are in prospect. And more competition from European manufacturers and from a few foreign farm products, but the articles they purchase will be lower in price. Further granting of credits to Europe might stimulate buying by her for the present. In the end, however, Europe, being already heavily in debt to us, must settle by buying less and selling more goods to America. She has not the gold required to pay her debts, so must pay in goods.

This Farmers' Club has a National Reputation



The Ceresco Farmers' Club, of Calhoun County, is one of the oldest in the state, and at the same time one of the most progressive. Members quickly saw the advantages of the recently organized community club of Battle Creek and were the first to join hands with the merchants and business men in a great community cooperative effort.

News of the Agricultural World

AMERICAN FARM BUREAU A PERMANENT ORGANIZATION.

(Continued from page 394).

for this year was discussed. The definite projects were made in the resolutions, in the form of a recommendation to the executive committee.

The executive committee was instructed to set up without delay a business organization, under direction of trained experts, and create bureaus or divisions as follows:

1. A bureau of transportation which will look into transportation matters by both rail and water, to the end that we may secure rates on farm products which shall be fair as compared with rates on other commodities, and which shall give to the farmers of the United States ocean rates which will enable him to compete on a fair basis with the farmers of other nations of the world.

2. A bureau of trade relations which shall investigate our dealings with foreign countries to the end that the interests of agriculture may be promoted.

3. A bureau of distribution which shall make a thorough study of the distribution of farm products.

4. A bureau of statistics which shall inquire into world conditions which influence supply and demand, and which shall especially study the mechanics of prices.

5. A legislative bureau which shall have to do with matters of national legislation which affect farming and farmers.

6. A bureau of cooperation which will make a special study of cooperative methods which have been found to be successful both here and in other countries, and which will draw up standard forms for cooperative enterprises of various kinds and aid state federations to promote local cooperative enterprises on thoroughly safe and truly cooperative lines.

Digest of Other Resolutions.

The resolutions set forth in very definite terms a pledge of full support to the constitution of the United States, condemning radicals and reactionaries.

Increased production is essential to national well-being. We stand for higher individual efficiency. In determining a compensation, we believe that the result of the day's work, rather than the hours thereof should be of paramount importance.

We pledge the farmers of America to the largest possible production consistent with good husbandry, with a view of relieving the world's dire necessities and invite the workers of all other industries to join us in this spirit of service.

We declare the strike no longer justifiable and no longer to be tolerated by a long suffering public.

We favor the creation of such arbitration boards or courts, with power and authority, to adjust controversies between labor and capital as shall safeguard the rights of the parties directly interested, as well as the welfare of the general public.

Realizing the need of trained workers and a healthy citizenship in all walks of life, we urge such general course of instruction of our young manhood as shall call attention to and give promise of relieving health conditions throughout the country.

We hail the American Legion as one of the most important factors in the life of America, pledge our support in its great work and welcome it to comradeship.

We pledge the full strength of this institution and its individual membership in support of the good roads movement throughout the country.

Deploring the waste and extravagance of the present day, we urge the necessity for a return to the more humble and prudent practices of the past.

Our country needs stability and the brakes must be applied to secure that much desired result. Waste breeds recklessness, a lack of responsibility, and is the best aid to the profiteer whose selfishness knows no country and who has no regard for the rights of masses.

We recommend legislation, providing that the presence of all substitutes for virgin wool in fabrics and apparel purporting to contain wool, shall be made known.

We recommend that a committee be appointed to confer with the International Revenue Department in working out a simplified form for income tax returns, for farmers.

We definitely and emphatically oppose the proposed legislation to levy a tax of one per cent on land holdings in excess of \$10,000.

We demand for agriculture, at the hands of state and national legislative bodies, the privilege of collective bargaining.

We insist that in all tariff legislation, agriculture be given equal consideration with other industries.

We wish the American people to definitely understand that the organization self-styled "The Farmers' National Council," has no authority to speak in behalf of the farmers of this country.

Any and all efforts on the part of The Farmers' National Council to ally the agriculturists of America with the radicals in the industrial world is hereby denounced.

President's Message.

President J. R. Howard made the following statements in his short address: The lands we are cultivating must continue to feed the people of the nation for all times. There are no new lands for us to take up. It means we must conserve and cultivate our soil better, must work out our business and economic problems and make farm life more attractive in the homes, schools and churches. We must make agriculture so attractive that it will appeal to and build the best citizens. We are building an organization to do these things not only for our own good but to fulfill our obligation to society.

Vice-president Strivings said: "Agriculture must be made profitable. That must be part of our program to protect future production and agriculture. The vacant farm houses of New York and the crowded cities brings the truth clearly before us. Not we alone will suffer if this condition is not brought about."

American Farm Bureau Federation.

Upon invitation of Hon. E. T. Meredith, Secretary of Agriculture, the entire executive committee immediately left for Washington, to get acquainted with the Department of Agriculture, and meet the agricultural committees of the senate and house.

NASHVILLE COW-TESTING ASSOCIATION.

THE heaviest milking cow in the Nashville Cow-testing Association for the month ending February 22, was a Holstein, owned by Owen Smith, which produced 1,742 pounds of milk; 50.5 pounds of fat. A Shorthorn cow owned by L. G. Fisher, made 60.5 pounds of butter-fat from 1,376 pounds of milk. Thirty-five cows of the association produced above forty pounds of butter-fat, and seven above fifty pounds. One registered Jersey bull has been bought.

CLOVERLAND FARMERS' INSTITUTE.

THE Cloverland Farmers' Institute, which will be held at the Menominee County Agricultural School, March 16-17-18, will include an excellent grain show and various forms of entertainment for visitors. The program is one of the best that has ever been arranged in the state. The prominent speakers are:

Dean R. S. Shaw, Michigan Agricultural College; Prof. G. C. Humphry, head of Animal Husbandry Department, Wisconsin Agricultural College; Prof. J. F. Wotja, state leader of county agents in Wisconsin; H. K. Jennings, secretary Federal Farm Loan Bank, St. Paul, Minn.; J. A. Waldron, Extension Dairy Specialist, Michigan Agricultural College; D. D. Buell, president Michigan Potato Growers' Association; I. R. Waterbury, and Jason Woodman, of the Michigan State Board of Agriculture; D. C. McMillan, superintendent Upper Peninsula Experiment Station; G. W. Putman, Upper Peninsula Crop Specialist, Upper Peninsula Experiment Station, and many others identified with state and county agricultural work, and several experts from leading concerns whose business pertains to agriculture and the live stock industry.

A separate section will be maintained during the entire session for women. Some of the most noted experts in home economics in the state have been engaged for addresses, and there will be many demonstrations to enliven these sessions and add to the value of the series of the lectures.

There will be a number of displays of farm machinery and implements, and a grain show that will excel any in either state outside of the state fairs. A number of handsomely engraved silver cups will be awarded to prize winners in various classes.

Ample arrangements are being made for entertainment of visitors. During the day light lunches will be served at the agricultural school at very reasonable prices. As the crowds will exceed the hotel capacity of Menominee and Marinette a committee is now listing homes where visitors may be entertained during the institutes.

AGRICULTURAL APPROPRIATIONS.

CONGRESS, by slashing the appropriation for agricultural work, has condemned the American farmer to a loss of millions of dollars, Secretary of Agriculture Edwin T. Meredith charged in a recent address before the Bankers' Club of Chicago.

He caused another stir when he declared, regarding the coming general election, "I think I know whom I would bet my money on," and again when he said: "But I am going to leave my position March 4 of next year regardless of the election."

The new cabinet member had made his first public appearance in Chicago earlier in the day at a noonday address before the Chicago Association of Commerce.

Secretary Meredith told the bankers that the farmer has not decreased his labor, but has increased his production, and is entitled to the generous aid of the government. He pointed out that the value of farm products last year was \$25,000,000,000, or equal to the entire war debt of the United States, and that the capital invested in farms is equal to that of all other industries and business combined.

"Everyone is calling for economy of government," he said. "That is all right. But parsimony which saves a few dollars at the loss of many is an-

other matter. Congress should not slash every appropriation, but should spend money wisely.

"The farmer has kept production of cereals up to the increase in population, increasing it from thirty-eight to fifty-two bushels per capita between 1880 and 1914.

"The motto of the Department of Agriculture is service, but we have to lay it on the shelf for lack of money. Congress has slashed our appropriation and we can't send out as many men to help the farmer combat animal and crop diseases. That means the loss of millions to the farmer and to the consumer.

"There is no politics in the Department of Agriculture. I'm going out of office on March 4 next year. But I hope to change the attitude of the American public toward the department and to leave with it the question of funds to support the work."

INDIAN CORN, BROOM CORN, AND OTHER PLANTS BARRED.

BROOM corn for manufacturing purposes may be imported hereafter only under permit and when its condition is such that it can be satisfactorily disinfected at port of entry, under a quarantine placed by the Secretary of Agriculture, effective February 21, 1920. Indian corn and certain related plants from all foreign countries are denied entry into the United States in the raw or unmanufactured state, except sorghum hay from Canada and the shelled or threshed grain, from any country, of the plants included in the quarantine. The quarantine applies, in addition to broom corn and Indian corn, to such related plants as sweet sorghums, grain sorghums, sugar cane, Sudan grass, Johnson grass, pearl millet, Napier grass, Teosinte, and Job's tears.

The necessity for such a quarantine was demonstrated recently by the discovery of living larvae of the corn borer in some ninety-seven bales of broom corn shipped from Italy to New York, the first considerable shipment of foreign broom corn since the war period. It has been definitely determined that the European corn borer, now known to exist in Massachusetts, New Hampshire, New York, and Pennsylvania, originally reached this country through the medium of imported broom corn.

REDUCED FOOD PRODUCTION.

WARNING that serious risk of reduced food production impends because of high wages demanded by farm laborers, high cost of farm equipment and supplies, and pronounced movements of people from the farms to the cities, was given by the Department of Agriculture.

"The most definite of these reports come from New York state," the department's announcement said, where records of the population on 3,775 representative farms on February 1 this year and February 1 a year ago were made by federal and state workers.

"It was disclosed that during the last year the number of people on these farms decreased nearly three per cent, and the number of hired men decreased more than seventeen per cent.

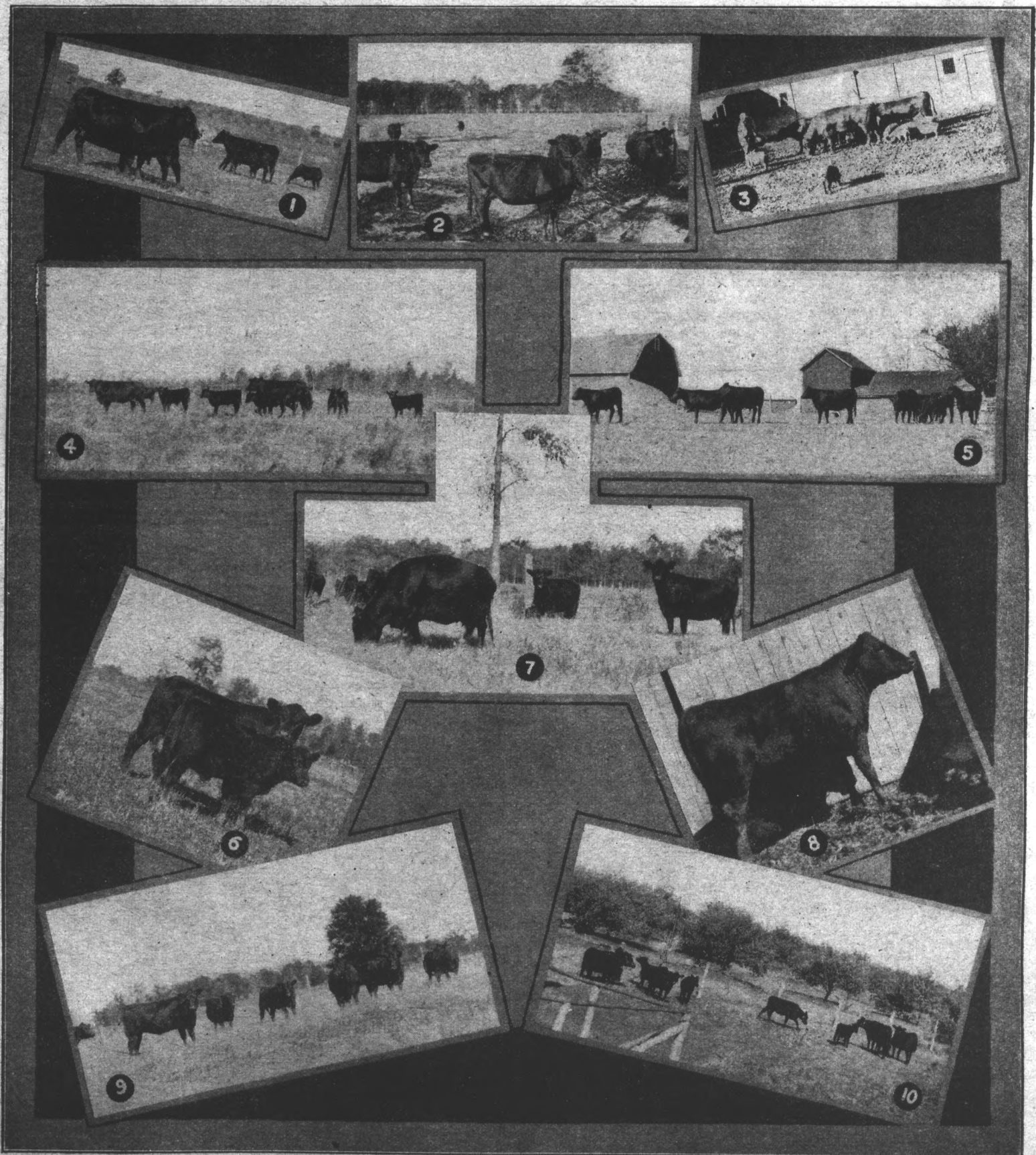
"If the same ratio holds for all farms in the state, about 35,000 men and boys left farming to go into other industries, while only about 11,000 have changed from other industries to farming. This is a more rapid movement from the farms to other industries than took place in the early part of the war. The same conditions in varying degrees exist in all sections, according to the Federal Bureau of Crop Estimates."

Better Beef For Michigan

LAND is cheap, grass good enough, High prices for beef, the building of make farming less of a gamble than it After years of experience, which we markets are convenient, and ev- silos and the healthy readjustment has been in recent years. There is a have had neither the time nor inclina- everything is favorable—except! which are marking our industrial life fair market for all the beef we can tion to interpret, we are agreed that This exception is the farmer who mean opportunities for farmers and produce and the demand is developing beef cattle fed and handled in the old should invest in good cattle. breeders who have the judgment and so rapidly that we are assured of fu way cannot be made to pay satisfac- tory profits. Many men are going

In the face of present conditions ability to develop herds of good beef cattle. Men who know the value of and care. Feeding cattle for beef, if about the problem in a different way; there should be no want of encourage- good cattle in converting grasses, for- some are doomed to failure; others ment or faith on the part of farmers age crops and grain into money and are finding year by year that they are who have a desire to invest in pure- soil fertility should not be slow to take ing to make good on Michigan land. on the road to success. Experience bred beef cattle. The present price is advantage of the present economic Conditions have been established shows, and technical observation is in itself an inducement. Lower prices and indirectly. They are a safe invest- many farmers to attempt the introduc- proves, that most of the successful systems of handling beef cattle on our for beef cattle cannot reasonably be and insurance tion of systems of farming calculated Michigan farms have been developed looked for in this country. An extra- to restore the fertility of the soil. It around the feeding of silage and the ordinary trinity of circumstances fav- is understood in an unscientific, but growing of grasses and legume crops orable to buyers of breeding stock policy covering the fertility of the of merit. It is only natural, then, that should invest thousands of men with the country is far below what it should be the silo should find its greatest popu- a lively interest. According to all the to meet economic requirements and cattle breeding and feeding depends. (Continued on next page).

Angus Cattle are Making Michigan's Beef Better



Scenes from Herds Contributing to Aberdeen-Angus Sale at Saginaw

Champion The Storm-Proof Silo With the Rot-Proof Staves

The Champion Silo is indestructible. The oil-filled staves—impregnated with creosote oil by the heat-and-pressure method until they average a gallon of oil to the cubic foot—will not rot, warp or swell.

These oil-filled staves are planted in a solid concrete foundation from two to four feet deep. An interlocking anchoring system connected to steel rods planted in the concrete foundation, runs to the top of the silo where it is fastened to channel steel hoops, both inside and outside the staves, making one solid unit of the entire silo.

Backed by a 50 Year Guarantee

Every Champion is backed by an iron-clad fifty year guarantee against rotting, swelling or warping. It protects you absolutely.

Send For The Facts

Write today for a piece of Champion oil-filled stave and see for yourself why Champion staves won't rot, warp or swell. Get the Champion catalog. It's full of facts about silage and silo construction. They are both FREE—yours for the asking. Write today.

The E.W. Ross Co.

Box 214
Springfield,
Ohio



Warranted to Give Satisfaction

Gombault's Caustic Balsam



Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

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

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

WHO AM I?



I am the fellow that milks with
"Mehring's Milkiers"

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 \$30 cash or \$35 on trial. Also engine power milkers.
W. M. MEHRING, Keymar, Maryland.

larity on farms where it can preserve the bulk of the corn crop for winter feeding.

More good beef cattle are the first essential to greater profits from feeding out farm crops. At present prices farmers in Michigan can afford to grow feeders on their farms. Buyers are now showing greater discrimination in favor of well-bred beef steers than they ever have before. They are willing to pay a premium for quality and the general belief in marketing and feeding circles is that the demand will take the supply of the best feeders at good prices.

Pedigreed sires and adequate feed and care are necessary in producing good feeder cattle. These are factors

which have made it possible for the British farmers to hold their own in face of far stronger competition than our farmers have ever known. The appetite for choice cuts of prime beef is as ingrained a characteristic of the American people today as it is of the British. We can grow the right kind of feeds in Michigan and we can get higher prices for beef of prime quality than we are getting today. Some farmers who do not want to feed cattle can get good prices for all of the good animals they can breed. Michigan farmers can make no mistake in breeding good beef cattle.

Silage has changed the breeding and feeding of beef cattle from a gamble to a source of certain profit. The in-

stances that cause the losses from drouth and partial failure of the grass crop are eliminated from the accounts of the farmer who has an abundance of silage at hand. With silage at his disposal he can rely upon pasture simply to supply its crop of feed as a contribution to the ration which is completed whenever necessary by silage. Uniformly rapid gains are thus secured in spite of the eccentricities of the weather. Like the certainty of a harvest on irrigated lands, beef cattle given this fully extended feed supply make a uniformly large return for the season's care. With good silage the weather is set at naught, summer losses are eliminated and every pound of feed is utilized.

Late News from Washington

HEARINGS on the meat packer legislation before the House Agriculture Committee have been largely attended. The packer representatives are shrewd, intelligent men always on their job and ready to take advantage of every opportunity to defend their clients, and they have an able helper in Congressman John W. Rainey, of the fourth Illinois, the packing house district in Chicago. If the packers fail in their efforts to defeat government regulation of their business it will be owing to their case being hopelessly bad, not through any lack of talent on the part of their representatives.

And it is equally true that the friends of packer legislation have staunch supporters in congress and other departments of the government. Those western representatives who are promoting the packer control bill are men who have rubbed up against many serious propositions, and the man who can worst Federal Trade Commissioner Colver in a debate or inquiry hasn't made his appearance at any of these hearings.

In connection with the present hearings on the Anderson bill, which is the same as the Kenyon bill, the Institute of American Meat Packers, having an office in Washington, issued a summary of the testimony on the Kenyon-Kendrick bill showing that one hundred and ninety-five persons appeared before the senate committee, of whom farmers or ranchmen were represented more numerous, than any other group, eighty-two being present, and all except twelve testified on the side of the packers.

Commissioner Colver brought out the fact that most of these witnesses appearing in defense of the packers, testified that they did not know how much their tickets that brought them to Washington cost, or what their hotel expenses were. When they came to Washington they were directed to the office of the Institute of American Meat Packers, and it is alleged by Mr. Colver that the testimony they gave was handed out to the press before it was heard by the committee. These men were referred to by Mr. Colver as "mimeograph witnesses."

Representative J. N. Tinscher, of Medicine Lodge, Kansas, said he knew one of these "mimeograph witnesses," a Kansas man who came to Washington and testified that he was a leading cattle raiser of his county, and in favor of the packers. Mr. Tinscher asserted that he was at a loss to know how this man who had no cattle and had not owned any in a good many years could develop into an extensive cattle raiser by the time he reached Washington.

It was shown at the hearing and admitted by the packer representatives that for many years three of the Big Five packers owned jointly in Texas and elsewhere a large number of cotton oil mills operated by subsidiary

companies in which they held all or a majority of the capital stock. It was also brought out that since the government began its investigations about a year ago, this joint ownership in the cotton oil mills has ceased, and the mills are now held by the packers individually.

Thomas C. Atkeson, Washington representative of the National Grange, testified before the committee as to the attitude of the grangers on packer legislation. He said he represented the solid, sane producing farmers. His arguments were based on these two legislative recommendations of the National Grange.

"The right of government control of all trusts and corporations is fundamental and the Grange demands that such organizations shall be subordinated to the interest of the public and operated without extortion or discrimination. We insist that profiteers, speculators, and corporations unjustly controlling prices and supply of necessities of life, should be severely punished; not by fine alone but by imprisonment as well.

"The instrumentalities for the distribution of food are matters of public concern. The Grange demands that they shall be brought under government registration and be made subject to government control with means provided to judicially investigate all operations and to correct abuses by such legally enforceable rules and regulations as public interest may dictate."

The real attitude of farmers, Mr. Atkeson said, is expressed in these resolutions. All are agreed that the big packers possess a monopolistic power. Live stock raisers believe that packers have a stranglehold on the meat producing industry, and consumers are of the same opinion. We do not need to see their books to know that they are not in business for their health or for the public good. Probably they are taxing the public all it will bear. Whether the packers use their power of exploitation or not, the public should be protected by legislation from the possibility of their exercising this power.

Mr. Atkeson said he was inclined to believe that the solution of the stock yards problem is railroad ownership, making them a part of the transportation machinery. He advocated a commission having the power of a court to settle all disputes between the producers of live stock and the packers or commission men, and he believed the Anderson bill or one of the other bills would remedy the situation. He has little confidence in the present court action as a remedy for the evils arising from the packing house monopoly, and cited the Standard Oil Company dissolution as an example of the court's experience in handling the trust monopoly problem.

The President has signed the rail bill turning the railroads back to their owners, but the railroad problem is far from being settled. The railroad em-

ployes are going to continue their demand for increased wages. If they do not get it indications are that they will be more persistent than ever in their advocacy of government operation. If they are successful in having their demands granted, it means a marked increase in transportation rates, which will bear heavily upon both producer and consumer, and the resultant dissatisfaction fanned by the propaganda of certain radical farm leaders and parlor socialists will develop into a widespread demand for government ownership.

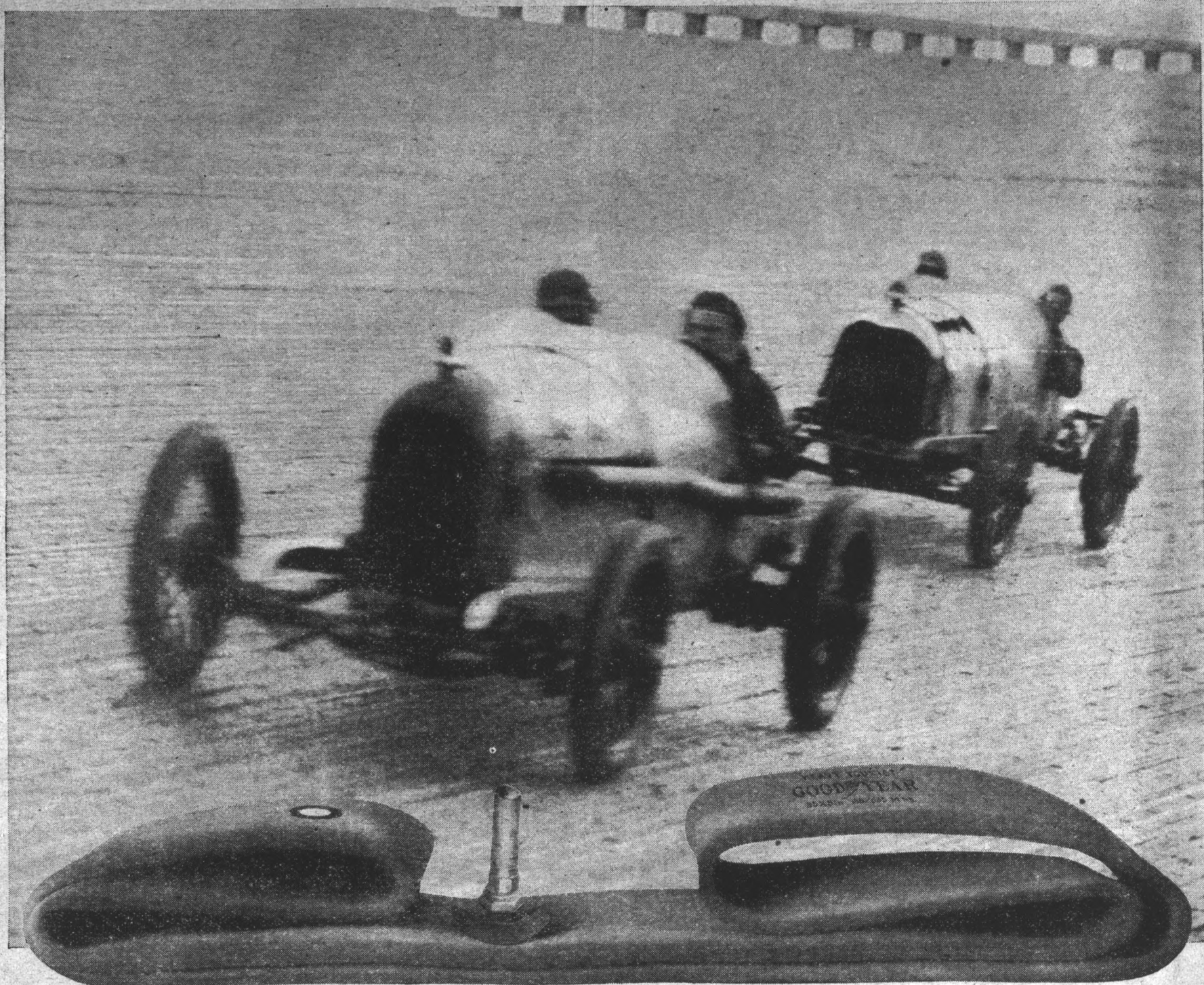
Judging from the attitude of their representatives in Washington the farmer's sentiment is divided on rail control. The National Grange is emphatically opposed to government ownership. The International Farm Congress, American Farm Bureau Federation, National Grange, National Farmers' Union, Farmers' National Congress, National Milk Producers' Federation, American Cotton Association, and the Dairymen's League signed a letter to the President, asking his approval of the bill to return the railroads to their owners. The Farmers' National Council and American Society of Equity representatives called on the President for the purpose of voicing their opposition to the bill and in favor of continued government operation of railroads. And the spokesman for these organizations told Mr. Tumulty that he represented four times as many farmers as the men who represented the other farm organizations.

Whether these radical farm leaders are misrepresenting the farmers or not, it is evident that the railroad managers will find it best as a matter of policy and for their own interest, to exercise great wisdom and care for the public welfare in operating the roads. If they use the clause in the new law which asserts that security holders are entitled to five and a half per cent on the aggregate valuation of the properties as an excuse for gouging the public they will be efficient aids of the radical propagandists in developing a public sentiment in this country which may lead to an irrepressible demand for government ownership.

Considering the railway situation as it appears from a Washington viewpoint I am inclined to the opinion that farmers will do well to keep their heads pretty level on this particular matter during the coming twelve months, basing their conclusions on a broad and liberal standpoint, and above all insisting that the men at the national capital who claim to be their representatives shall actually represent them. This is no time for wild, irresponsible radicalism or narrow minded selfishness in the handling of questions of great public concern.

The federal grand jury at Spokane, Washington, has created quite a stir in congress by its report on the grain situation, in which it charges high officials of the United States Grain Corporation with fraud.

(Continued on page 412).



Copyright 1920, by The Goodyear Tire & Rubber Co.

Think What Punishment They Stand

HAVE you ever considered how much depends upon the tubes in the tires of a racing car?

No matter how staunch a casing may be, it cannot withstand the punishment inflicted by the track unless the tube, also, is flawless.

During the American racing season of 1919, every important race of fifty miles or more, on speedway and road, was won on Goodyear Cord Tires.

While that is splendid tribute to the Goodyear Cord Tire, it is also proof conclusive of the superior quality of Goodyear Tubes.

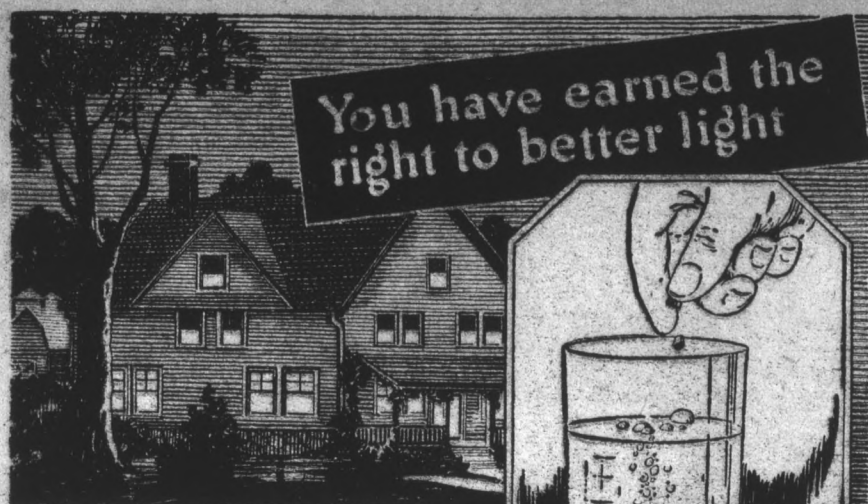
As you know, Goodyear Heavy Tourist Tubes, just as the Goodyear Tubes so favored by racers, are made of pure gum strips, *built up layer-upon-layer*.

Their cost is but little more (an average of seventy cents) than the cost of tubes of lesser merit. Do you consider it economy to risk a costly casing to save so small a sum?

Goodyear Heavy Tourist Tubes come in a water-proof and oil-proof bag. Get them from your Goodyear Service Station Dealer. More of them are used than any other kind.

GOODYEAR

HEAVY TOURIST TUBES



COMPARE your farm today with the way it looked ten years ago. Figure the value of your implements now and the worth of those you owned five years back. Look how well you've provided for your horses, cows, chickens and other stock.

What have you done for yourself? For your own comfort, convenience and health?

You owe yourself and your family a Colt Carbide Lighting and Cooking Plant. You deserve the clear, white flickerless light. You have earned the right to sit and read in comfort without eye-strain after having worked like a nailer from sun-up to sun-down. You owe yourself the convenience of having instant light in every room at the snap of your finger. No matches needed; no carrying of light from room to room.

Your wife has earned the right to freedom from oil-lamp drudgery. She can use to better advantage the time she spends daily cleaning and refilling the lamps.

Carbide Lighting *COLT* and Cooking Plant

are more popular today than ever. Never were there so many in use. Never before did so many farmers appreciate their many real advantages. These plants are simplicity itself. Easily installed. A few minutes a month is all the care they need. Thousands have been in operation for years without requiring one cent for repairs.

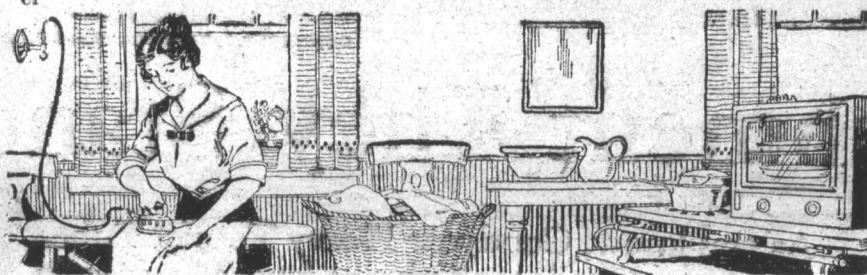
Light and cook from the same plant.

Flood your house with artificial sunshine in the long dark hours of the night. Do this at a cost so low that it will surprise you.

J. B. COLT CO.

228 Fourth Avenue

New York City



Passing of the Oil Lamp

When man invented the glass chimney the open torch became a lamp. Now the oil lamp is rapidly disappearing from the farmhouses of America. The daily drudgery and mess of cleaning and refilling lamps is fast becoming but a memory to farmwives; the pale light of the lamp is moving to obscurity before the clear, white, dependable light from Colt Carbide Lighting and Cooking Plants.

As paint improves the appearance and increases the value of a house from the outside, so does a Colt Carbide Lighting and Cooking Plant add more than its cost to the value of a house on the inside. And the comfort, convenience and cleanliness of the plant are advantages which add immeasurably to the joy of living.

"You're Right B'Gosh"

We told this dairyman that the action of the Empire Teat Cup simulated exactly the action of the calf's mouth. Being a "doubting Thomas" he had to be shown, so he visited a neighboring dairy. The cameragot his expression as we got his remark. Testing the action of the Empire Teat Cup is one way of proving to yourself the superiority of the Empire milker. It explains why the Empire makes such remarkable records on fine herds. To find out all of the Empire advantages write for catalog 23-M—or see our nearest dealer.

"The Standard of the Better Dairies"
EMPIRE CREAM SEPARATOR CO.
150 Nassau Street, New York
Chicago, Denver, Atlanta, Toledo, Syracuse, Minneapolis,
San Francisco, Montreal and Toronto

EMPIRE
MILKING MACHINES

Also manufacturers of the Separator with the MILLION DOLLAR BOWL

Mention The Michigan Farmer When Writing to Advertisers.

What is the Most Profitable Form of Lime to Use?

By Prof. M. M. McCool

RAPID strides have been made in the science of soils during the past five years. One phase of this subject that has received much attention is that of liming the land. It is notably true that the practice of liming the land is as old as agriculture itself, yet much still remains to be learned about the relationships that exist between the soil plant and various forms of lime. The question before us, however, is this. If hydrated lime can be placed on the land for

Treatment.	Total Value of Increase Four Years.	Cost of Liming.	Net Value of Increase.
Coarse limestone, two tons.....	\$15.78	\$ 7.00	\$ 8.78
Coarse limestone, four tons.....	23.60	14.00	9.60
Fine limestone, two tons.....	24.16	11.50	12.66
Fine limestone, four tons.....	33.38	23.00	10.38
Hydrated lime, 1½ tons.....	28.52	24.75	3.77

\$16.50 a ton, and finely ground limestone for \$5.75, which will return the greater profit on the investment of time and money? In order to answer this question it is necessary that I consider the results of field and other trials by several soils men working in different states.

The immediate efficiency of limestone depends much upon its mechanical condition or fineness of grinding. German workers by means of pot tests brought out that for several crops marl and limestone are most active when finely ground. Voelcker in England obtained a higher yield of grain with finer limestone.

This has been extensively investigated in this country. Frear and Thomas of the Pennsylvania Agricultural Experiment Station in 1911 conducted elaborate studies, using a very acid soil in pots and growing clover therein. They found that: One hundred mesh limestone produced 27.8 percent of total yield; eighty mesh 26.4; sixty mesh 23.7; forty mesh 18.5; twenty mesh 3.6.

At the Rhode Island Agricultural Experiment Station it was found that mangels respond most vigorously to the fine material and that the next year carrots grown on the same plots do likewise as:

No lime, mangels 107, carrots 175; 10-20 mesh limestone, mangels 138, carrots 314; 20-40 mesh limestone, mangels 204, carrots 469; 40-80 mesh limestone, mangels 389, carrots 563; limestone unsifted, mangels 279, carrots 470.

J. W. White, of Pennsylvania, compared quicklime with limestone and found little difference in the effect of the pulverized stone and the quicklime:

Burned lime produced thirty-five plus of total crop; 100 mesh limestone thirty-four plus; sixty mesh limestone twenty-two; twenty mesh limestone seven; and eight mesh limestone one.

We have found by means of pot cultures that pulverized limestone or high-grade marl are practically as effective in assisting the growth of clover as the agricultural hydrate. This is exemplified by the accompanying table.

Field trials in general verify these findings. A letter of inquiry to Prof. C. G. Williams, of the famous Ohio Ex-

periment Station brought this reply: "With eighty mesh limestone costing A similar letter addressed to Prof. E. L. Worthen, Pennsylvania, brought this reply:

"In summarizing these results, Gardner writes, (Pa. Bul. 131 page 203): 'All of the field tests are more favorable to the finely crushed limestone than to equivalent amounts of burnt lime. While these tests are favorable to the finely pulverized limestone, they are not all sufficiently decisive to justify the use of ground limestone at a disproportionate price.'

As to the choice between ground limestone and hydrated lime at the prices you quote, \$3.25 and \$14 respectively, I certainly would advise the use of limestone. I know of no experimental results that would justify our recommending hydrated lime in preference to ground limestone at these prices. We find that at prevailing prices in New York state ground limestone is to be recommended in preference to hydrated lime, though in some special instances, we have advised the purchase of burnt lime.

"As a general policy, I may say that we are basing our lime recommendation upon the cost of a unit of lime (CaO) delivered at the farm. In the light of present experimental results this seems to me the only justified basis to use in recommending sources of lime."

Our field trials thus far conducted are of value. At the Cass county farm the pulverized marl and limestone have given about the same yields as the hydrate and on the basis of cost per unit of lime have proved to be far the more profitable. Our Bulletin 91 on lime contains suggestions concerning the use of lime and may be obtained by writing to Dean R. S. Shaw, East Lansing, Michigan.

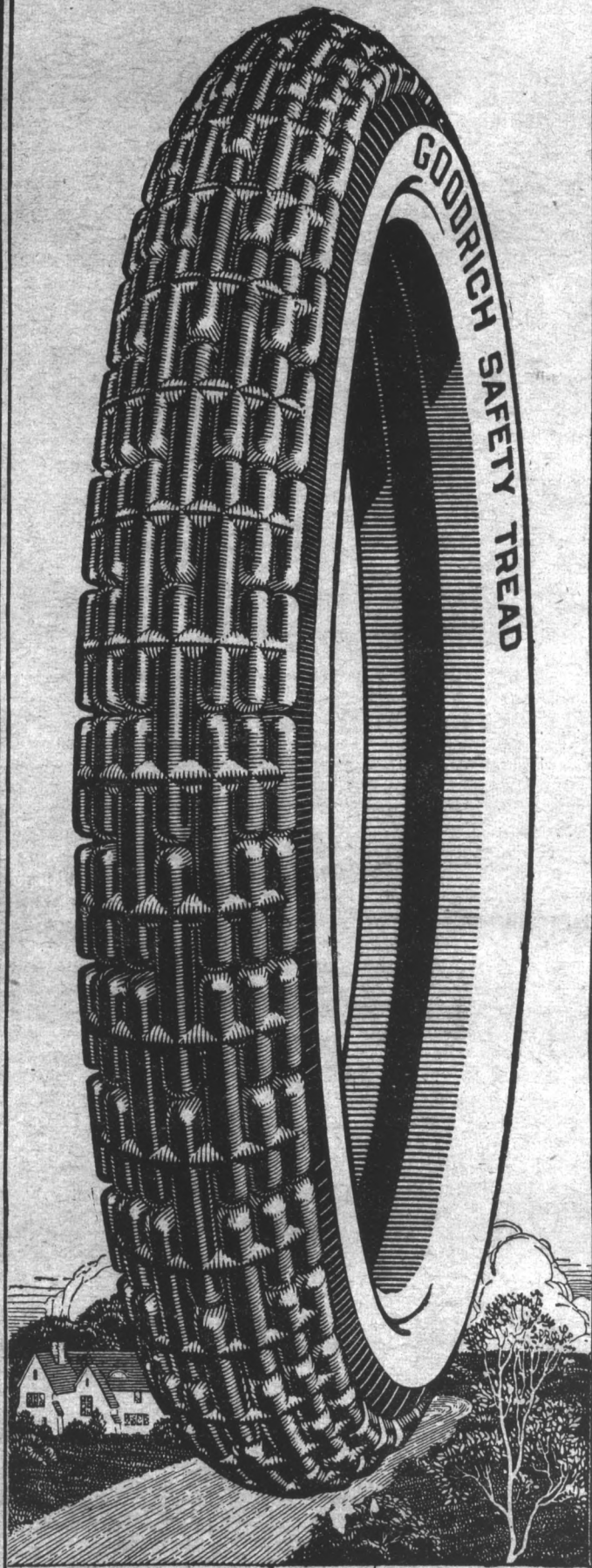
The Illinois Agricultural Experiment Station has for a number of years advocated the use of the somewhat coarser grades of limestone, preferring them to either the hydrate or the pulverized stone. A recent press article by Professor Robert Stewart follows:

"The effect of ground limestone, of varying degrees of fineness, upon the destruction of soil acids on the Newton field was discussed in a previous article. The Newton field is located on C. G. Williams, of the famous Ohio Ex-

(Continued on page 410).

Effect of Limestone on Yields of Corn, Wheat and Soy Beans.

Crop.	No stone. Lime.	¼-inch down.	¼ to 1-10 inch.	1-10-inch down.	1-50-inch down.	Burnt Lime.
Corn	8.2	12.5	11.3	10.2	8.4	7.9
Wheat	9.1	13.7	16.3	11.0	16.8	17.4
Soy beans	4.9	5.9	6.4	7.4	6.3	6.1



The Goodrich Adjustment Basis:
 Silvertown Cords, 8000 Miles
 Fabric Tires, 6000 Miles



Why 50,000 Dealers Sell Goodrich Tires

"The other day I signed up your, or should I say 'our' 1920 agreement, and it occurred to me that you would be interested in my reason for arranging to handle Goodrich on a much larger scale than last year.

"It is this: I was recently asked why I handled Goodrich tires practically to the exclusion of all others, and my answer was;

"Because I have not had a Goodrich tire come back, and because I believe they are the best proposition on the market today."

Very sincerely yours,

John E. Dennis.

3083 Main St., Buffalo, N. Y."

IT IS THIS FAITH in Goodrich Tires, Goodrich methods, and Goodrich help, that has caused more than 50,000 dealers to feature Goodrich Tires.

John E. Dennis says, *"I have not had a Goodrich Tire come back."*

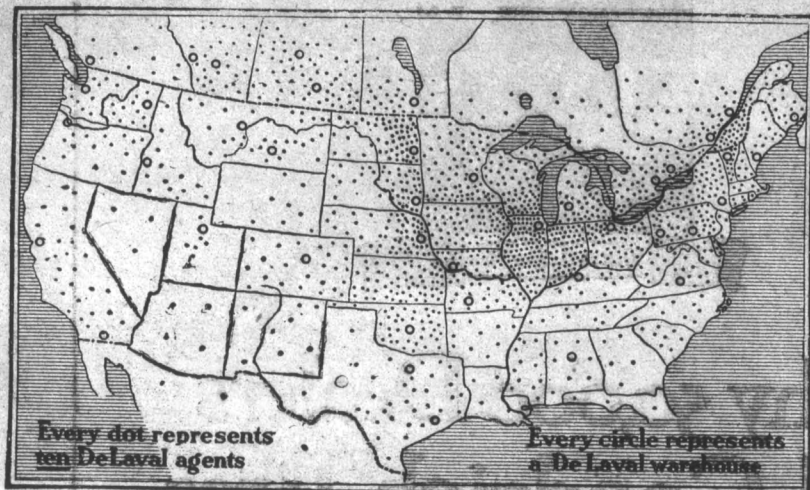
If a tire had come back, he knew from Goodrich's clear statement of certified service that his customer had full protection in the Definite Adjustment Basis—8000 miles for Silvertown Cords and 6000 miles for Fabric Tires.

The nation-wide demand for Goodrich Tires is proof positive of the soundness and fairness of the Goodrich merchandising policy.

But more important, the economic right of this policy, and the outspoken, open-handed declaration of it, have put the purchase of a tire on a firmer foundation for dealer and user.

Goodrich Tires

DE LAVAL SERVICE covers the continent



This map shows how completely the service of the De Laval organization reaches every community

Every separator user realizes the importance of having his separator in use every day. Delays waiting for parts, with a separator out of use, mean great inconvenience and loss of product.

Every dot on the map represents ten De Laval agents, and every De Laval agent is individually trained to assist his customers in setting up and operating their machines, to furnish and put in place repair parts, and to insure prompt service and satisfaction to De Laval users.

Not only is the De Laval Cream Separator superior in all points of separator efficiency, but every user of a De Laval is assured of prompt and competent service for all the years to come.

It is therefore not surprising that there are more De Laval Separators in use than all other makes combined. Now is a good time to begin saving time and product by securing a De Laval.

The nearest De Laval agent will be glad to demonstrate a De Laval. If you do not know his name, write to nearest De Laval Office.

THE DE LAVAL SEPARATOR CO.

165 Broadway
NEW YORK

29 East Madison Street
CHICAGO

61 Beale Street
SAN FRANCISCO

50,000 Branches and Local Agencies the World Over

Feed Prices and Prospects

Market Outlook is a Little Bearish

FEEDSTUFFS are working lower. The status of the market in this respect? The Michigan dairymen and cattle and hog producers who use cake and meal in various forms recently have been tempted to make purchases because of talk of possible exhaustion of stocks. It is true that crushing operations in the south have fallen off sharply, owing to dwindling supplies of seed, this having been hastened by the heavy damage to seed by rains early in the gathering season. Figures of the Department of Commerce show stocks of seed on hand at mills at the close of January, amounting to 473,181 tons, compared with 846,142 tons on the corresponding day a year ago. Though the amount of seed received at mills during the crop period was slightly smaller than in 1918, still the amount crushed was more than 100,000 tons greater. But there is much more cake and meal on hand at crushing plants than a year ago, the government figures estimating the total on January 31 at 264,579 tons, compared with 136,938 a year ago. The holdings of hulls also are much larger than a year ago. In addition, it is safe to consider the stocks of cake and meal in domestic market channels at well above a year ago, owing to restricted demand and liberal shipments by crushers. There is marked unwillingness to hold cake for summer demand, owing to the prevailing high level of prices, but crushers are forced to accumulate stocks because of a lack of buying strength. In view of the reluctance to buy at current prices, and the liberal reserves on hand, it is doubtful if a tight situation, such as developed in the spring and summer a year ago, will again be witnessed this year.

The fact that both cattle and hogs are approximately \$4.00 per hundred-weight lower than the prevailing market level at this time a year ago, while market values for feedstuffs almost generally are higher, is an argument very favorable to the bearish side. Live stock prices provide an excellent barometer of the fluctuations in feedstuffs, though only in a very general way. In order to operate at a profit, the meat animal producer must consider the market values for his stock; also, the dairyman must consider the prices for the commodities he sells, in purchases of corn, oats, other grains, cottonseed and linseed feed, alfalfa, clover and other feeds from which he "manufactures" his products. In the case of the dairyman, the situation is somewhat different, milk products commanding a comparatively higher figure.

Cottonseed cake and meal, which not many weeks ago was displaying greatest strength in the feed group, is probably in the weakest position on the current market. Purchases of cottonseed feed by meat producers continues having little effect in stimulating consumptive buying. The only important sales which the crushers of the south are making represent the purchases by manufacturers of commercial fertilizer and feed mixers. Sales of off-grade meal, the product manufactured from damaged seed, have been made recently around \$7.50 to \$7.75 per ammonia unit, or approximately \$62 a ton, basis the Memphis market. But the off-grade meal is not particularly desired by beef cattle feeders and dairy interests, this class of trade being accustomed to the meal of yellow color. The fertilizer demand is an important factor in the trade, however, its purchasing power being enormous. One of the bullish motives among the cottonseed crushing interests of the south is the belief that fertilizer manufacturers continue their purchases to the extent that little feed will be available for producing interests, though this is seriously doubted by a majority of market handlers.

Cake and meal of forty-three per cent content is being offered around \$62 a ton, basis crushing points in Texas and Oklahoma, or around \$66 to \$68 a ton in the important feeding sections of the country. This represents a decline of approximately \$15 a ton from the high level of prices. The forty-one per cent protein feed is at a discount of about \$2.00 a ton, and the 38.5 per cent about \$5.50 under the forty-three per cent. Quotations in the southeast are on practically the same basis as in the southwestern territory. Little demand prevails from rangemen in the crushing sections, owing to the large crops of sorghum grains and other roughage available there. This, of course, allows more feed available for markets.

Much is heard concerning the probable shortage of cake and meal for summer feeding operations. What is

(Continued on page 443).

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Cow, Calf and Bull Pens

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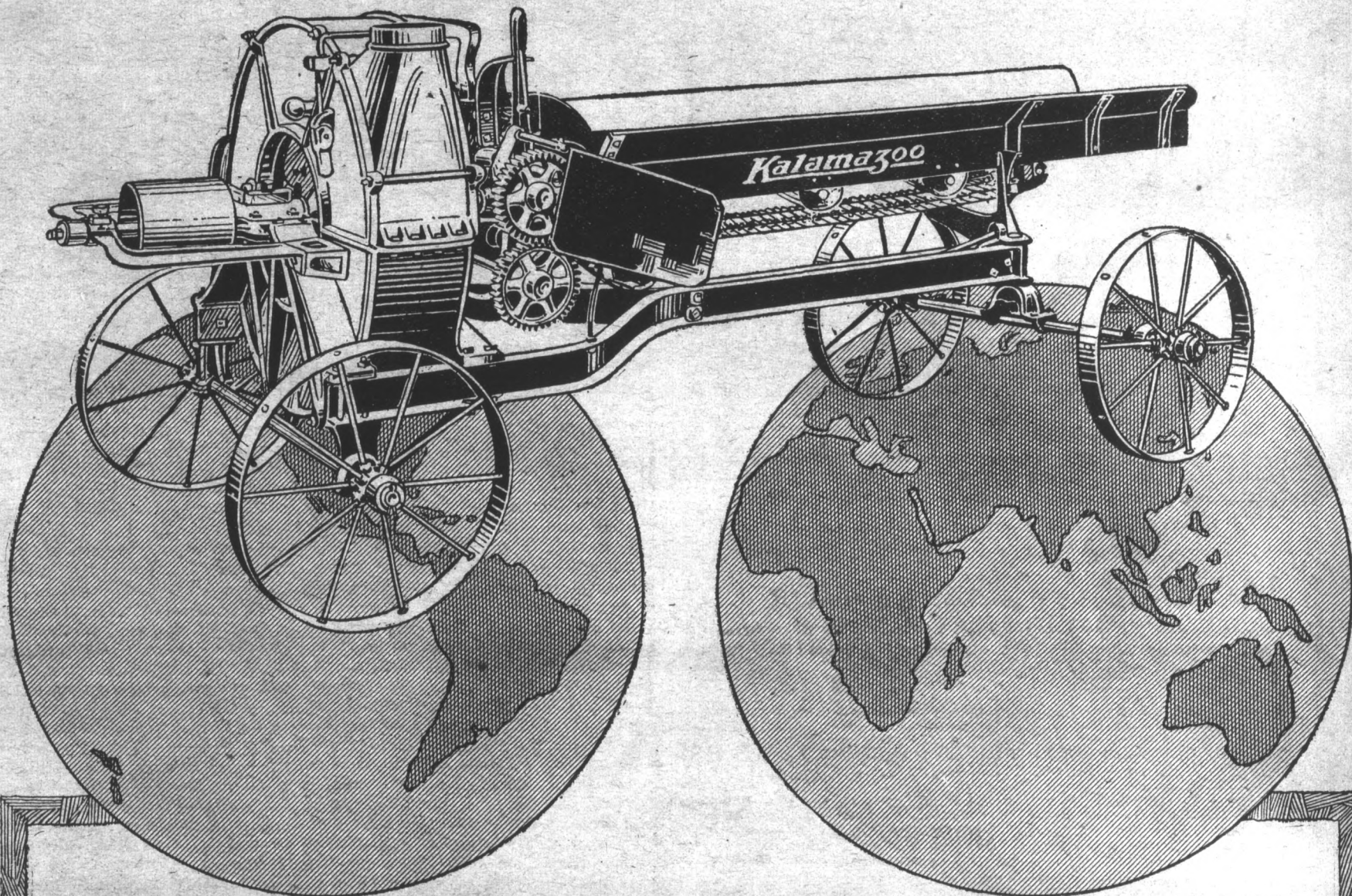
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A cutter made so thoroughly strong and reliable that it is your best insurance against loss of time in silo filling days, when every moment is worth dollars to you. A speedy, trouble-proof, easy running machine, with a continuous record of success dating back over a third of a century. As a silo owner, you are interested in the filler that will best serve you. Will you accept the word and guarantee of the House of *Kalamazoo*? You will make no mistake if you do. Investigate this today.



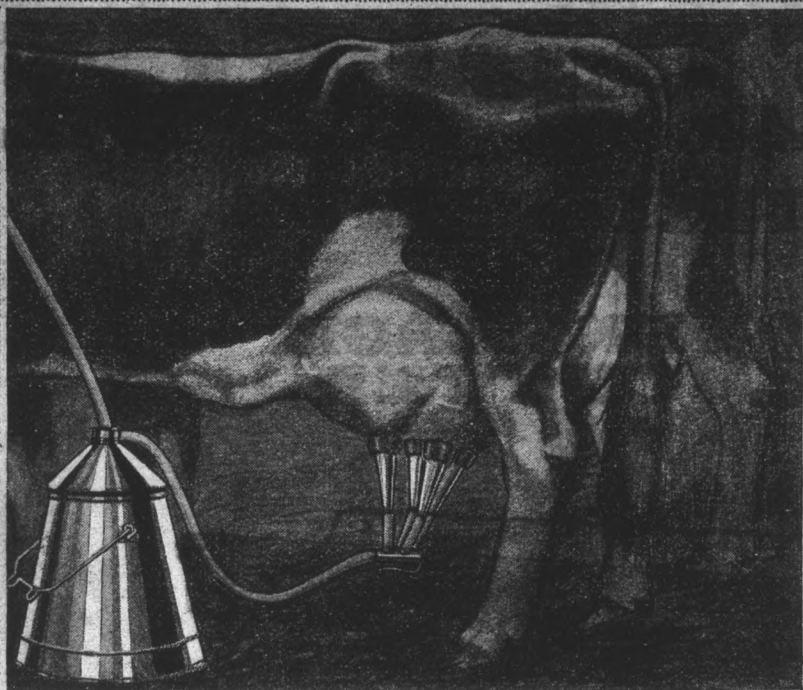
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Build YOUR OWN SILO SAVE HALF
FREIGHT PREPAID. Stronger, safer, better than Silos costing three times our price. \$6, \$8, \$10 and \$12 sizes at the lowest prices ever made on reliable silos. Our patented construction makes expensive foundations unnecessary. Makes perfect ensilage. Storm Proof. Easily, quickly erected. Strongly endorsed by thousands of users. **TERMS IF DESIRED:** Write for free illustrated catalog. **JONES SILO CO.** 214 North 2nd St., Kansas City, Mo.

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Registered Spring Seeds

Colosso Success Oats Reg. No. 981. \$3.50 bu.
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Regular Association Prices. Can fill orders at once.
EARL O. McCARTY, Bad Axe, Huron Co. Mich.

"Truth in Fabric" Bill

(Continued from first page).

There shall be stamped in a manner that shall be legible the contents of the fabric, specifying the four following ingredients: Virgin wool, shoddy, cotton and silk, and the relative proportion of each, together with the registration number of the person, firm or corporation making the fabric. In addition to having the woven fabric stamped with its contents, there shall be sewn on each garment or article of apparel in a manner plainly discernible a white cotton strip of cloth on which shall be indelibly written or printed the precise information contained in the stamp on the back of the fabric or cloth from which such garment was manufactured.

Every manufacturer of yarn purporting to contain wool, is required to furnish the purchaser a statement in writing setting forth the content of such yarn, whether it contains virgin wool, shoddy, cotton or silk, and the percentage of each.

The term "virgin wool" is described as meaning wool that has never previously been spun or woven into cloth; the term "shoddy" includes any material obtained from clippings of cloth or material that has been spun or woven into cloth.

The secretary of the treasury, the secretary of agriculture and the secretary of commerce may cancel the registration number of any manufacturer of yarn, woven fabric or garments purporting to contain wool, who neglects to comply with any of the provisions of the act. Provisions are also made for condemning quantities of yarn, fabric or garments that are found to be misbranded, and disposing of them through the process of law.

This "Truth in Fabric" bill may not be the best measure of the kind that can be drawn, but it has evidently been very carefully drafted with the idea of covering every possible loophole that might render it ineffective in its purpose of preventing adulterated fabrics from being sold as pure virgin wool. Its provisions do not certify as to the quality of the fabrics. They merely require a true statement of their contents. The bill does not protect the purchaser as to the quality of the wool, but it does protect him against the imposition of buying shoddy under the belief that he is getting wool. There is no discrimination against shoddy, cotton, or any other material that enters into the production of fabrics. The man who wants goods made from these materials can buy them and will know what he is getting. It interferes with no one who desires to conduct an honest business. It will enable the honest manufacturer and retailer to give their customers a square deal.

Shoddy is the curse of the woolen industry. The treasurer of the Ohio Wool Growers' Association is quoted as saying that it is "the arch enemy of sheep." It enables the clothiers to sell clothes as all wool which are not made from virgin wool, and its use deprives the purchasers of the privilege of knowing whether they are purchasing clothing made from old woolen rags, or from pure wool. The term "virgin wool," as used in the bill, prevents any misunderstanding as to the meaning of pure wool. It is even more comprehensive in its meaning to the general public than the old synonymous term, "fleece wool," which is probably more familiar to growers of wool.

The bill is economically sound. It applies the same principle to fabrics that governs the labeling of commercial fertilizers, seeds and other commodities. One question not clearly defined is to whether the stamping can be done at an expense which will not add perceptibly to the cost of the ma-

terial; another is whether it might be possible for the big organized woolen manufacturers to gain possession of the patents covering the machinery necessary to do the stamping economically, and thereby have an advantage over the small independent concerns. These questions and others will no doubt be comprehensively explained at the hearings on the bill.

The National Sheep and Wool Bureau of America, of which F. J. Hagbarth, C. A. Tyler, F. S. King and other well known sheep breeders are leading officials, endorses the "Truth in Fabric" bill by saying that it "protects sound economic principles by ensuring that it will be the law of supply and demand, and not a group of fabric manufacturers that determine the extent of the demand of both shoddy and virgin wool, and the price at which each will sell. With this law it is the people who will decide, and an unfair price cannot be charged for either virgin wool or shoddy because if too great a price is charged for virgin wool the people will purchase shoddy, and if an unfair price is charged for shoddy, they will, of course, purchase virgin wool."

The bill has been referred to the Committee on Interstate and Foreign Commerce of the House and to the Senate Committee on Commerce. Representative French tells me that he expects hearings to be held upon it within a few weeks. The congressional committee having the bill in charge has also had the railroad bill in which the members have been so engrossed that it has not been able to have hearings upon the "Truth in Fabric" measure.

Representative French also tells me that his bill has the very generous support of the public, of the growers of wool and live stock throughout the country, and of many retailers and manufacturers who believe in putting their business upon a straightforward basis.

It is now up to the sheep raisers to help Representative French and Senator Capper put this bill through. I am satisfied that these true friends of the farmers will do the best they can for its success. But it will no doubt, have opposition. Every state and county sheep and wool growers' association will do well to give the bill their immediate attention. If after careful investigation it appeals to them as worthy of their support they should get into touch with their congressmen and senators in regard to it, and especially with the men on the committees that have the bill in charge. Representatives Edward L. Hamilton and Thomas W. Sims, of Michigan; John G. Cooper, of Ohio, and Evan J. Jones of Pennsylvania, are members of the House Interstate and Foreign Commerce Committee. Individual sheep raisers can write their representatives in congress. A large delegation of representative sheepmen at the hearings with a well defined program of action, will be an effective help in promoting the fortunes of the bill. My wool growing friends can depend upon it that the other fellows will be out in full force if there is anything at stake that is going to affect their business.

E. E. REYNOLDS.

BANKERS ENDORSE FABRIC LAW.

AT the recent meeting of the Agricultural Commission of the Michigan State Bankers' Association, they unanimously endorsed the pure fabric law, and also endorsed the proposition to finance purebred lamb clubs in the state of Michigan, and approved of assisting the new Wool Growers' Association of the state by advancing individual farmers seventy-five per cent of the estimated value of the wool on the association warehouse receipts.

Columbia Records

Exclusive Columbia Artists Headliners All!

Are Columbia's exclusive popular artists the real headliners?—*We'll say they are!*

Could Al Jolson sing the alphabet and make it a scream?—*We'll say he could!*

Does Nora Bayes make a musical skylark out of every song she sings?—*We'll say she does!*

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Can Bert Williams get a laugh-a-line out of any song he talks?—*We'll say he can!*



Has Harry Fox got fox-trots in his voice?—*We'll say he has!*

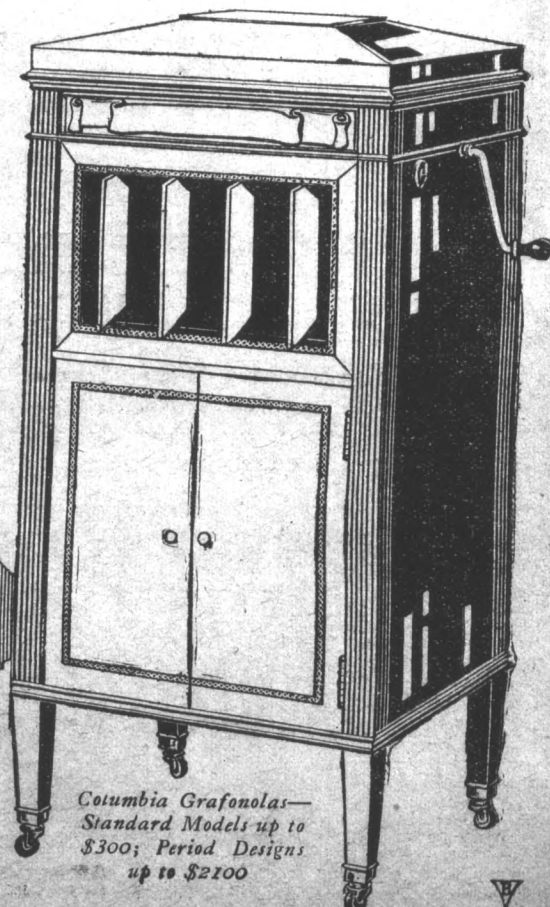
Does the Columbia Grafonola play these artists' records just the way they want them played?—*They say it does!*

To make a good record great, play it on the Columbia Grafonola

COLUMBIA GRAPHOPHONE COMPANY, New York

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Get the New Columbia
NOVELTY Record Booklet.
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"I Cleared \$3700 Last Year With Your Ditcher"

Joseph Rivard

JOSEPH RIVARD is but one of hundreds of men who have taken up this big-money business of ditching. And many others are making even more with a **Buckeye Traction Ditcher**.

"We made \$3500 last year with our Buckeye," writes Herr Bros., Piper City, Ill. "We have just ordered two more machines, making five in all, which we own."

\$6500 for J. E. Griffith

"My Buckeye made me \$6500 during the 1918 season," writes J. E. Griffith, London, Ontario. "I averaged 175 rods a day while working."

Made \$71 In One Day

R. W. Sherman, Rochester, Ind., writes, "In one day's work with my Buckeye, I cut 117 rods of ditch 42 inches deep, for which I received \$71. I have had my machine for three years, but run it only half the time as I have other work to attend to. It is still in A-1 condition."

We Will Show YOU How To Make Big Money

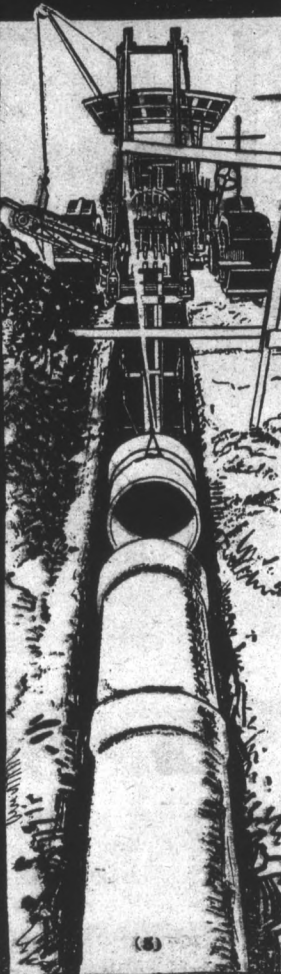
These are average letters from a few Buckeye owners. We have started hundreds of others—farmers, farmers' sons, contractors—in this high-profit business of ditching. Right in your own locality, spare time or full time, you too, can easily make thousands of dollars a year in this big-money work. No experience necessary. Our service engineers start you right and stand behind you.

For the ability to dig through the toughest jobs, through hardpan or frost; for built-in ruggedness and durability; for the utmost service through season-after-season continuous work, the **Buckeye Ditcher** is without an equal!

Drop us a line today. Let us talk over with you the ditching possibilities in your section. We will give you our unbiased advice about starting in this large-paying business in your locality. Write today.

The Buckeye Traction Ditcher Co.
365 Crystal Ave., Findlay, Ohio

I cleared \$3700 above all expenses last year with a Buckeye. I dug 23,431 rods of trench during the 1918 season—high as 325 rods in one day. Will be glad to write anyone who is thinking of going into the ditching business.
—JOSEPH RIVARD, Tilbury, Ont.



"A Perfect Trench at One Cut"

BUCKEYE

Traction Ditcher



More Profit From Your Live Stock

IT'S mostly a matter of *digestion and health*. Your horses will do more work, your cows give more milk, your pigs grow faster if you give them

Pratts Animal Regulator

It makes their feed go to work, increases the health of your stock, and that means more profit to you. Used by farmers and veterinarians the world over because it pays them. Always sold with this guarantee:

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Muck Farmers Get Results

AT the regular meeting of the farm management, or "making the Michigan muck farmers held at muck pay." By observations and studies of the best practices which are being carried out on successful muck farms in the state, certain fundamentals can be established which will help the prospective muck farmer get started properly.

The large development of the swamp land of Michigan cannot possibly come with the growing of special crops, as onions, celery and mint, but rather by general stock farming, hay and pasture, silage and beets; perhaps grains. More work is necessary, such as has been carried out by European investigators in developing the proper varieties for our muck lands in all types of farm crops. Such work would make muck lands highly productive soils. What the muck lands need more than anything else is a stable, profitable system of truck farm management, and it is to this end that the college is working. Mr. Levin announced that a pamphlet on muck farm management will be available soon.

Mr. Joel C. Merriman, president of the Michigan Muck Farmers' Association, discussed briefly the relation of the farmer to drainage legislation. He pointed out that drainage legislation is too important a matter to entrust in the hands of politicians. He urged that the association take an active interest in the protection of the farmer during the next session of the legislature.

Mr. L. L. Drake, former farm manager of the Traverse City Hospital Farm, gave the results of work on muck in Grand Traverse county. This was a cedar muck, "raw," and poorly decomposed. Properly managed muck gave splendid results. He considers rolling of especial importance and so a light application of manure, supplemented with acid phosphate, a good practice, the manure inoculating the muck with the bacteria, which hastened the release of the nitrogen for plant use. He also mentioned the work which is being done in composting muck and manure at the Traverse City Hospital, by which they are increasing the tons of manure to be applied on the upland. He called attention to the value of soy beans and the excellent growth they make on muck; it was noted that soy beans make a good growth without the formation of nodules, presumably using the nitrogen directly from the muck.

Dean Alfred Vivian, Ohio State University, gave an interesting talk on "Composting in China and Japan." The care with which the oriental peoples conserve organic matter and the importance of the compost heap in this relation, were emphasized.

The large purpose of the Muck Farmers' Association was not only to determine what could be grown on muck lands and methods of culture, it improves the water-holding capacity but rather, the big problem of muck of the soil, and (2) it has a tendency



County Agent Lurkins, of Berrien, finds the farmers ready to utilize the rich stores of plant food from swamps when they have intelligent direction as to its proper use. The picture shows Mr. Lurkins and a pile of muck that is to be used for fertilizing high land.

True Value DAIRY FEED

Keeps the Cans Full All Winter

"A heavy flow of winter milk means good profit. The feed that gets large yields of this high priced winter milk, must be of highest quality—every pound.

"I keep the milk yield right up to the mark all through the winter. If cows once begin to shrink in milk production it is impossible to bring them back to normal.

"To keep them milking steadily in cold weather I must have.

True Value DAIRY FEED

"This is the most valuable winter milk ration that I ever have used. It is all good honest feed. Cows like it, and it is a sure milk maker." So says the practical milker, for he realizes that if he had all materials on the granary floor he could not mix and proportion such a ration himself.

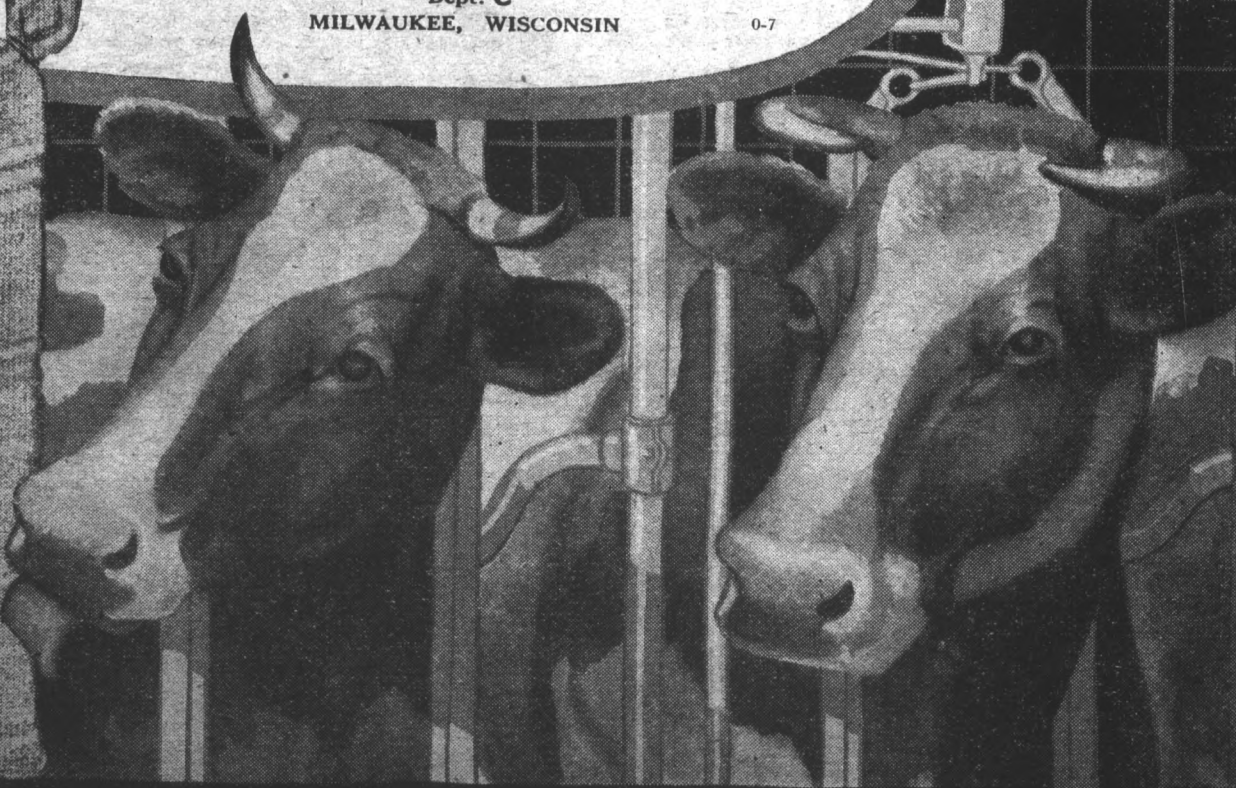
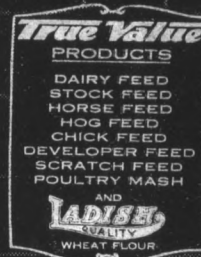
TRUE VALUE DAIRY FEED is correctly blended and thoroughly mixed from clean pure grain products; cotton seed meal, linseed meal, corn gluten feed, ground oats, wheat bran and coconut meal.

The TRUE VALUE MILLERS have the equipment that enables them to furnish this economical TRUE VALUE DAIRY FEED that keeps your milk cans full till grass grows again. And it pays to feed some of it even when cows are on pasture.

Ask your feed dealer. If he hasn't this feed yet, write for full information about how to get your supply now.

LADISH MILLING COMPANY,

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MILWAUKEE, WISCONSIN



"I Plow now where I was never able to use horses"

"My LAUSON Tractor has been a paying investment. I have plowed with it in a good many places where I was never able to plow with horses. I used the Tractor for running feed cutter, clover huller and pulling out stumps. It is an all-around labor-saver. Another place where the LAUSON has come in especially handy is pulling manure spreader."

New Holstein, Wisconsin
August 28, 1935.

The John Lauson Mfg. Co.,
New Holstein, Wisconsin.

Gentlemen:-

My tractor has been a paying investment. I have plowed with it in a good many places where I was never able to plow with horses. I used the tractor for running Feed Cutter, Clover Huller, Feeding Machine and pulling out stumps.

It is an all around labor saver. Another place where the Lauson has come in especially handy, is pulling Manure Spreader.

Yours truly,

(Signed)

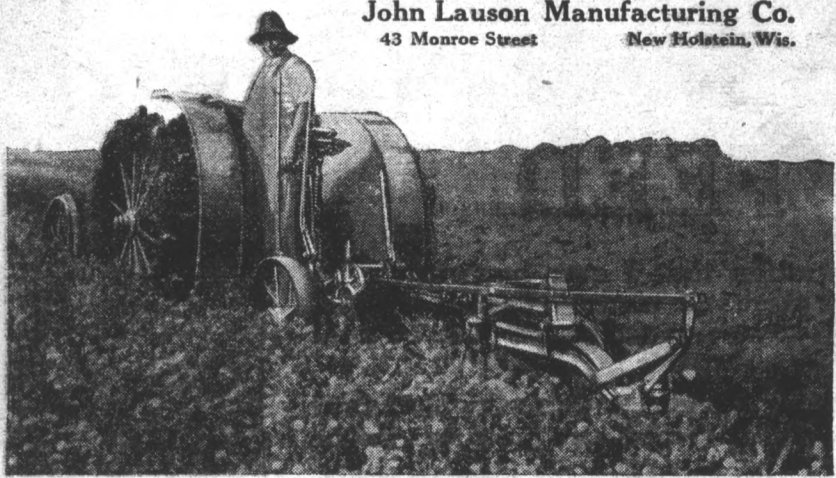
Joe Pauls.

The LAUSON is built by an old established farm engine manufacturer—backed by years of skill and manufacturing resources. Not low in price, despite favorable labor conditions and efficient production—but lowest in point of service and satisfaction.

The LAUSON does what you would expect a high-quality tractor to do.

Write for more information before you buy any-kind of a tractor. It will pay.

John Lauson Manufacturing Co.
43 Monroe Street New Holstein, Wis.



ANCONAS Now is the time to place your order for HATCHING EGGS. Write for prices C. & M. WHITTIER Hand Station, Michigan

ANCONAS Eggs ANCONAS

OVIE'S BABY CHICKS

Big, Strong, Vigorous Chicks that will live and grow and be a pleasure and satisfaction to you.

Make Poultry Profitable

with a thoroughbred flock of Ovie's Day Old Chicks. Hatched in a Mammoth Hatchery under care of expert operators.

14 Leading Varieties

Safe delivery guaranteed by P. P. prepaid. Send for free catalogue today.

OVIE'S HATCHERY CO.
24 State Street MARION, IND.

BABY CHICKS S. C. W. Leghorns, White, Buff Barred Rocks, S. C. B. I. Red, Anconas, White Wyandottes, Buff and Brown Leghorns, 25 for \$3.25, 50 for \$6.00 for \$10.00 for \$20.00. Fenton Chicken Hatchery, Fenton, Mich. Box 24.

Baby Chicks S. C. W. and Brown Leghorns and S. C. B. I. Red, Anconas, White Wyandottes, Buff and Brown Leghorns, 25 for \$3.25, 50 for \$6.00 for \$10.00 for \$20.00. Fenton Chicken Hatchery and Poultry Yard, E. S. Holland, Mich.

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KENDAL'S SUPERIOR STRAINS BABY CHIX Famous for P. High Standard, Utility, Quality 35 varieties Leghorns, Rocks, Reds, Wyandottes, Anconas, Minorcas, Brahmas, Langshans, Orpingtons, Ducks. Circular free. A. C. Kendal, 210 Prospect Ave., Cleveland, Ohio.

Buff Leghorn and White Leghorn Cocks, from 200 egg strains. Booking orders for eggs and chicks. DR. WILLIAM SMITH, Petersburg, Mich.

BABY CHICKS Crescent White Leghorns; also, Brown Leghorns, Black Minorcas, Reds, Rocks, and Wyandottes. Send for circular and Price List. CRESCENT EGG COMPANY, Allegan, Mich.

Baby Chicks The fluffy lively kind, the kind that live and grow. Hatched in the most modern incubators built, all eggs are from pure blood farm stock. Catalogue and price list mailed upon request. NORWALK CHICK HATCHERY, Norwalk, O.

Additional Poultry Ads. on Page 410

WAIT! LOOK at MY PRICE

My 1920 offer is the sensation of the incubator industry. Others can't understand how I can sell such a superbly built, scientifically correct hatching machine at such an astonishing price. My answer is that I have smashed all records for big production—built in such huge quantities that I can afford to sell at this almost unbelievable price—and still make an honest profit. Furthermore, there is no "Profit" about the

DETROIT \$12.45

Incubators and Brooders

All sold under Unconditional Guarantee of Satisfaction or Your Money Back. You're safe to order direct from this ad.

140-Egg Capacity Sent Complete Ready to Use Freight Station

BOTH Incubator and Brooder

\$7.30 For DETROIT BROODER

140-chick capacity—a triumph of mechanical ingenuity. Sent prepaid to your freight station. Order direct from this ad.

Send for Special Descriptive Circular Given full and interesting facts regarding both machines. Write for Free Copy today.

Detroit Incubator Company Dept. 11 Merritt St., Detroit, Mich.

\$12.95 Buys 140-Egg Champion Belle City Incubator

Prize Winning Model—Hot-Water, Copper Tank, Double Wall Fibre Board, Self Regulated, Thermometer Holder, Nursery. With \$7.55 Hot-Water 140-Chick Brooder—Both only \$18.50

Freight Prepaid East of Rockies Towards Express

With this Guaranteed Hatching Unit and my Guide Book for setting up and operating your success is sure.

My Special Offers provide ways to earn extra money. Save time—Order Now, or write for Free Catalog, "Hatching Facts"—It tells all—Jim Rohan, Pres.

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

Bee Keeping An Avocation

By N. M. Pairpoint

BUSY people, women as well as men, should always have an avocation as well as a vocation. In other words, cultivate a hobby. Hobbies are commercial assets to people who know how to use them, and to everybody they are health assets.

We are all familiar with the advice to forget business when you leave the day's work, and think no more about it till the next day, but to most people such advice is about as useful as being told to be "careful" so as not to take cold. "How do you do it?" in reply quite crushes the advice-giver.

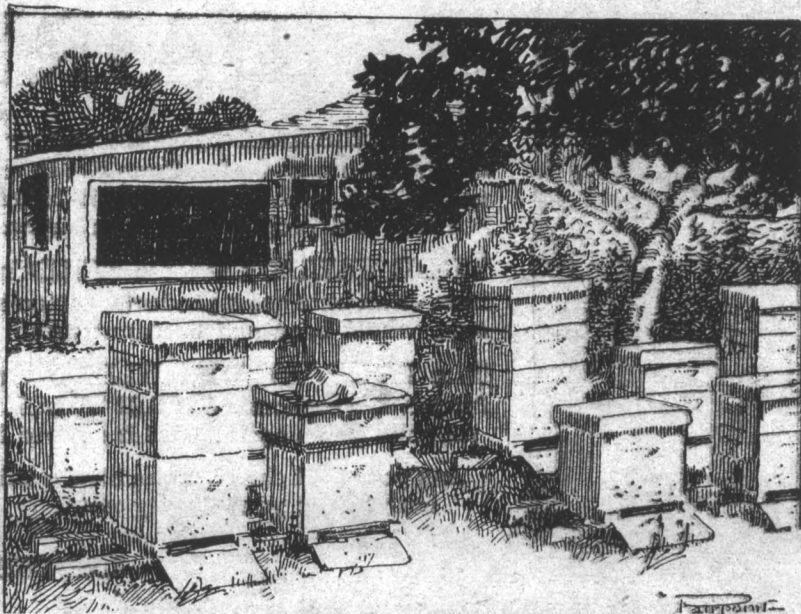
One way to stop thinking of business is to have a second interest to turn to. Business holds our attention usually because it means bread and butter, with or without jam, according to circumstances, but the second interest should claim our attention because we really like the subject. Too many people do not have any definite likes and dislikes, but to have them adds a good deal of vividness to life. If there is no guiding choice, select the opposite of the regular employment, and the thing that supplies the most wanted conditions. For the person whose regular occupation keeps them out of doors all day, often in noisy cars and streets, select some second interest that can be developed at home in quiet and rest; for those whose work means confinement in a building, make some outdoor occupation the second interest; and remember that we are always

and two or three extracting supers with full sheets of foundation. Have the hive set, just where it is intended to stand, and partly open the entrance. Have something in the entrance that they must crawl over, or through for the first day, so they will pause and locate their new position; after that they never get lost.

If a hive is secured in the early spring, when the fruit trees are beginning to bloom, and it is not known whether they have much food in the hive or not, it is well to give them a pound cube of sugar which will insure food till the honey flow comes.

When the honey flow does come they will need one or two supers with shallow extracting frames, set on top of the hive, and it is one of the surprising things to see how quickly they will draw out the wax foundation into their wonderful six-sided cells, and fill them with the thin, greenish nectar, which is honey in the making.

No one knows exactly what goes on inside those mysterious hives, though the bees have been kept for their honey and wax, as far back as history gives us any records. It certainly is not honey as we know it, when the bees bring it into the hive, but a thin, greenish liquid, with a rather unpleasant flavor. The bees often spread it out in shallow cells when it is first brought in, and stand over it and fan it with their wings, apparently to evaporate it, and make it the right consist-



A Source of Profit as Well as Pleasure.

stronger when we rely upon ourselves for our pleasures as well as for our business.

A second interest that may be made a source of profit as well as pleasure, is to keep one or two hives of bees. There is an unreasoning fear among many people of bees, that the creature itself does not warrant. If they are not handled with some consideration they will sting, and like all living things they must be understood, and it must be fully realized that we simply guide their natural instincts to our own ends, and do not attempt to force them to our point of view. When we realize this, and supply their needs, they are excellent neighbors, even in a city and will repay the care they get many times over.

They can be kept anywhere there is room to set a hive; many are kept on roofs of buildings in large cities; sometimes in attics, with runways to an open window; in the smallest of yards surrounded with neighbors. When they are treated kindly and quietly, they molest no one, but if they are worried or neglected they may defend themselves.

The best way to begin, but possibly not the cheapest, is to buy a full colony of bees, in a new, modern hive,

They seem to rather enjoy moving it about in the hive from one cell to another, possibly manipulating it in some way we do not understand, and it is certainly allowed to thicken, and change color, before the bees are satisfied that it is ready to cap with wax. Bee-keepers speak of this series of operations as, "ripening the honey," which seems to express the idea well.

Some little skill on the part of the bee-keeper is sometimes needed to induce the bees to enter the small section boxes that comb honey is made in, and it is well not to attempt it the first season bees are kept, but the shallow extracting frames, holding about three pounds of honey each, are just as desirable for the home comb-honey supply. If it is wished to sell some of the honey in the comb, or to make up boxes of it for gifts, it may be cut from the frames, and drained over night, so that the cells that are cut will become quite dry, then the pieces of capped honey wrapped in paraffin paper, and packed into attractive boxes.

It may be cut into small squares, and drained, then each little square wrapped separately, and packed in candy boxes, when it becomes the purest form of bon-bon obtainable.



A Pistol In Your Home Equal To Its Responsibility

The New Remington .380 Automatic Pistol is
backed by over 100 years of skill and experience

MANY folks feel that they ought to have a pistol in the house. But when they come to select one they are not quite sure about which to buy.

For years the sportsmen of this country have been asking Remington for a pistol which would meet *all* the requirements of protection, touring and hunting—a pistol to take the same dominating position among pistols that Remington rifles and shot-guns have occupied among the larger arms.

Here is the pistol—Remington .380 caliber, eight shots. Those who have used it concede that in its all round fitness for the needs of the American citizen and his family, it goes further than any other pistol or revolver produced.

**Remington
UMC
for Shooting Right**

It is the automatic pistol you and your folks can depend upon because it is not only powerful but **COMPLETELY SAFE**. Built to shoot and shoot straight and hard—light and compact—just the sort of "gun" you need around the place and feel comfortable in having.

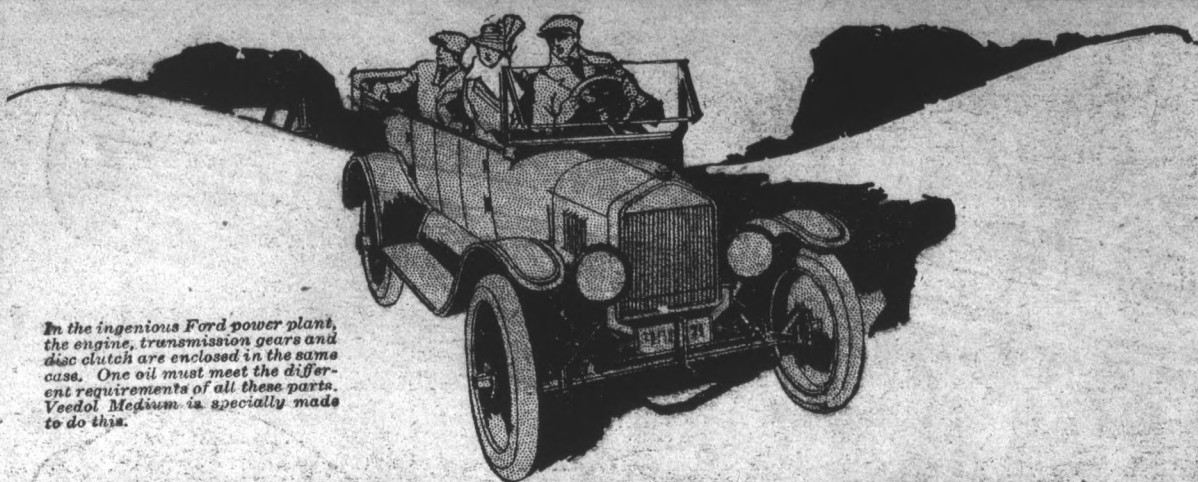
Three safety features make the Remington pistol especially desirable for the home: Automatic grip safety, thumb-operated safety lever, and an exclusive Remington patent which prevents discharge of arm if the magazine is withdrawn and a cartridge is left in the chamber.

The Remington .380 is a general purpose arm—for home protection, touring, hunting and fishing. It is a pistol which you may buy with the knowledge that over a century of experience, skill and craftsmanship have gone into its manufacture.

Your nearest Remington dealer—"Sportsmen's Headquarters"—will be glad to show and explain this pistol to you. There are over 88,000 Remington dealers in this country who sell Remington products and give Remington service.

For detailed description write us for "Model 51 Pistol Folder"

The Remington Arms Union Metallic Cartridge Company, Inc.
Largest Manufacturers of Firearms and Ammunition in the World
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In the ingenious Ford power plant, the engine, transmission gears and disc clutch are enclosed in the same case. One oil must meet the different requirements of all these parts. Veedol Medium is specially made to do this.

Protects your Ford against this abuse

If poor oil or oil of wrong body is used, 97 parts are damaged

JUST as with the engine in the most expensive car, every moving part of the Ford engine must be perfectly lubricated.

The Ford engine is a wonderful piece of mechanism, compact and accurately made, but, like any other finely adjusted machine, it requires absolutely correct lubrication to develop its fullest efficiency.

Thousands of motorists and tractor owners have found that 90% of Ford engine troubles are caused by inferior oil.

The hidden toll taken by sediment in ordinary oil

Ordinary oil breaks down under the terrific heat of the engine—200° to 1000° F. A great quantity of sediment forms which has no lubricating value, and which thins out the remaining oil.

The oil film is destroyed. Metal-to-metal contact results. Friction and wear begin. The engine over-heats. Bearings burn out. Carbon forms rapidly. Serious trouble inevitably follows.

How Veedol reduces sediment

Veedol reduces the amount of sediment formed in the engine by 86%. Notice the sediment test at the left. Veedol is specially made to maintain proper lubrication. Common engine troubles are almost eliminated. Evaporation is reduced between 30% and 70%—giving high mileage per gallon of oil.

Veedol Medium is specially recommended for Ford automobiles. Veedol Special Heavy is recommended by many Fordson Tractor and International Harvester Company dealers.

Leading dealers have Veedol in stock. Every Veedol dealer has a chart which shows the correct grade of Veedol for every car.

The new 100-page Veedol book on scientific lubrication will save you many dollars and help you to keep your car running at minimum cost. Send 10c for copy.

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Sales Corporation

1825 Bowling Green Building New York City

Branches and distributors in all principal cities of the United States and Canada

VEEDOL
LUBRICANTS
RESIST HEAT

BEST LIME TO USE.

(Continued from page 400).

gray silt loam on tight clay. It is very flat and does not have good surface drainage, consequently there is little loss of rainfall by run off or under-drainage. It is too wet in spring for planting at the right time and the crops grown become easily susceptible to moisture conditions, during the summer, if there is a prolonged drought. These physical conditions of the soil, fully appreciated by those who have had anything to do with this type of soil, are frequently the limiting factors in the production of crops on this farm. While all the plots, including the checks, are fully treated with potassium, phosphorus and organic matter, nevertheless there have been several complete crop failures during the six years since the establishment of the farm, due to the presence of the tight clay subsoil.

The crops which have been produced during the better years have not been very good, due to the same cause. Yet the limestone when applied in addition to potassium, phosphorus and legume nitrogen has produced some increase, since the limed plots, no matter what the form, have increased the crop yields over the unlimed plots. A rotation of corn, soy beans and wheat, with a sweet clover cover crop is followed and a summary of the yields of corn, soy beans and wheat obtained by the various treatments when the application of limestone was at the rate of one thousand pounds calcium carbonate equivalent per acre per year, is recorded on preceding page.

The data in this table is quite instructive. The yields are poor in every case, due to factors beyond control as already explained. The limestone materials have had some effect in increasing crop yields. Soy beans have been only slightly affected by the limestone treatment and show no influence in favor of either grade of material. The yield of wheat is slightly better on the plot receiving burnt lime, although the yield from the plot receiving only the very coarse material is nearly as good. The yield of corn is better by 4.3 bushels from the plots receiving the quarter-inch mill run. The plot receiving burnt lime produces actually less corn than the unlimed plot. There is no conclusive evidence from this data in favor of any of the several forms. The coarser ground material is apparently fully as effective in the production of crops as in the destruction of soil acidity, as the finer material or burnt lime and when the relative cost of material is considered it is clearly the better form to use.

An interesting and fundamental point in this connection is the effect of the applied limestone on the growth of sweet clover which is planted in the wheat as a cover crop and which, of course, is not harvested, but plowed under as a green legume manure crop. The plots which do not receive limestone materials do not produce as would be expected any sweet clover at all. Where the heavy application of limestone, one ton per acre per year, has been applied, there is a luxuriant growth of clover on all the plots receiving limestone. Even the plot receiving the specially prepared limestone, one-quarter to one-tenth-inch material, containing no fine material, produces, so far as the eye can detect, as good a crop of sweet clover as where the finer materials have been added.

The field work in which comparisons are made of limestone of different sized particles has not been continued long enough in Michigan to justify definite statements concerning which would be the most economical form over a period of years. It is only fair to state the intermediate grades may (Continued on page 412).

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Lay 40 to 50 eggs each per year—Raised as easily as chickens—Only eat half as much—Very profitable—Bring \$2.00 per pound alive.

Genuine Wild Mallard ducks

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Better Produced Day Old Chicks are the kind you want—17 leading breeds at reasonable prices. Our free cat. tells all about them. Send for it today. Springfield Hatcheries & Poultry Farms, Box K, Springfield, O.

Additional Poultry Ads. on Page 437

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130 Eggs 130 Chicks

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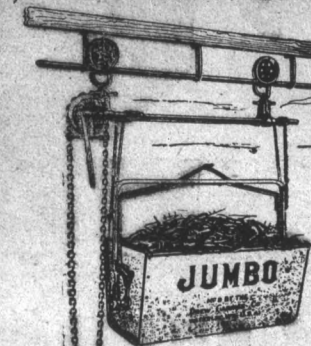


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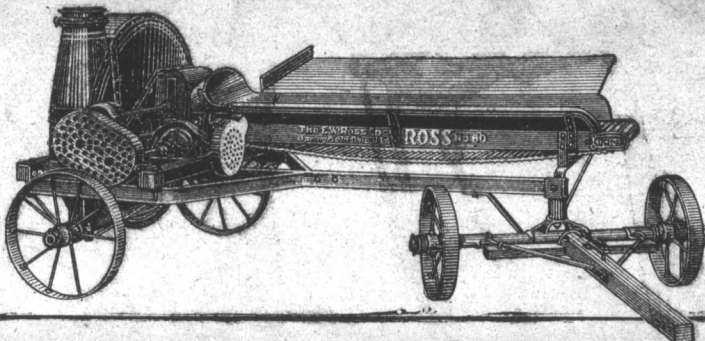
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BETTER silage—at lower cost! That's what you get with the Ross Ensilage Cutter. *Clean-cut silage*—from the first hour's operation right straight through the heaviest silo-filling job, and year after year of the same high-class low-cost service.

Better Silage—at lower cost. Do you want to know why? Walk into the store of the dealer who sells

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and ask him to show you the special *Ross Ball-Bearing End Thrust and Extra Knife Adjustment* which forces the knives right up against the shear bar and holds them there—absolutely preventing shredded silage or "chewed" silage—and keeping the rich juices in the corn, where they belong—by cutting every piece slick and clean.

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Note that Ross Flywheel Cutters are equipped with genuine Rockwood Drive Pulleys. These pulleys grip the belt perfectly and absolutely prevent slippage. No wasted power and no jerking—no matter how heavy the load.

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Study the Ross carefully. Compare it—part by part—with any other cutter on the market, selling at any price. Ask about the Ross Warranty which guarantees absolutely satisfactory service.

We Match Your Power

Ross Ensilage Cutters are especially designed for use with gasoline and kerosene engines. You don't need a special engine. There is a Ross to match your present power—from four horse-power up.

BEST LIME TO USE.

(Continued from page 410).

prove to be best, due to the rate at which they break down in the soil, but there seems to be no question as to whether limestone or marl are more economical to use on most soils than the hydrate.

In the light of our present knowledge we are safe in stating that one ton of limestone one-eighth of an inch or finer is equal to approximately one thousand five hundred pounds of the hydrate. This means that the latter should be purchased for twenty-five per cent more than the former.

Observations by the writer in many places in Michigan lead him to conclude that where the hydrate is used there is a tendency to apply it in too small amounts, especially is this the case where alfalfa is to be seeded.

(Having in mind the fact that there is a place for both limestone and burnt lime, and realizing the difficulties many of our readers have had in securing deliveries of orders for both forms of lime, the editors of this paper decided it would be the part of wisdom to have Mr. E. O. Fippin present the full merits of each material to our readers. Mr. McCool's article is worthy of careful reading. We still believe, however, that there is a place for burnt lime on many farms in Michigan where there is a long haul or at times when other forms of lime are not available. If any of our readers wish information and data concerning the relative merits of various forms of lime our soil men, Messrs. Weir and Ullsperger, are at their service.—Eds.)

WASHINGTON LETTER.

(Continued from page 398).

poration with being involved in the forming of a big wheat pool which has used the credit of the nation to profiteer in wheat. The grand jury asserts that the speculators, aided by the United States Grain Corporation have been able to boost the price of hard wheat from around \$2.07 received by the growers, to \$3.30 per bushel; that these speculators and the mills they control are demanding exorbitant prices for the by-products of flour used in cattle feeding and are thereby crippling the dairy industry.

The jury also asserts that as the wheat is now in the hands of the speculators, "and in some cases by interests directly and indirectly connected with some of the officers of the United States Grain Corporation," the \$150,000,000 appropriation recommended to congress by Treasurer Glass to finance the sales of wheat, flour and by-products to foreign countries, will benefit only the profiteers, and the consumers will pay the bills."

The attitude of congress is such that we may expect a thorough investigation of the United States Grain Corporation activities to be made soon.

E. E. REYNOLDS.

LIVE STOCK PRICES REVIEWED.

J. G. IMBODEN, president of the Illinois Live Stock Association, calls attention to the present uncertainty of the times which is causing stockmen to hesitate about stock feeding. He points to the past year which saw high record prices for cattle and hogs, which made their production extremely profitable for a short period, but during that year there were such violent depreciations in prices for both cattle and hogs, which made their production extremely profitable for a short period, but during that year there were such violent depreciations in prices for both cattle and hogs that production was part of the time unprofitable. He adds that we are now witnessing a market on both fat cattle and hogs which, if long continued, will mean millions of dollars losses to producers. The fact is that the cost of production of beef and pork is greater this winter than last, yet fat cattle have been selling \$8 to \$4 lower.

SPARK STRONGEST LAST LONGEST

Ask your dealer

Under every condition, regardless of weather and no matter how rough the going

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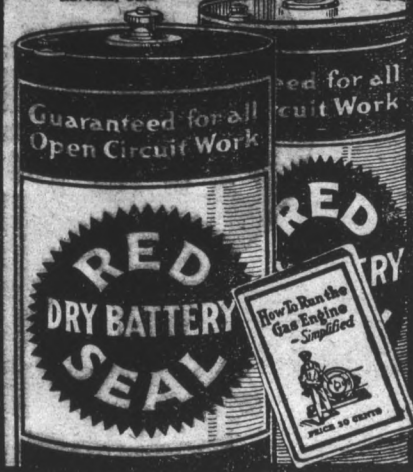
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This patented Teaf Cup is an exclusive United feature. Clear as glass—you always know which teats are milking. Simple and sanitary—easiest to clean. Lowest upkeep cost. The only transparent cup on the market. The only cup that massages the udder.

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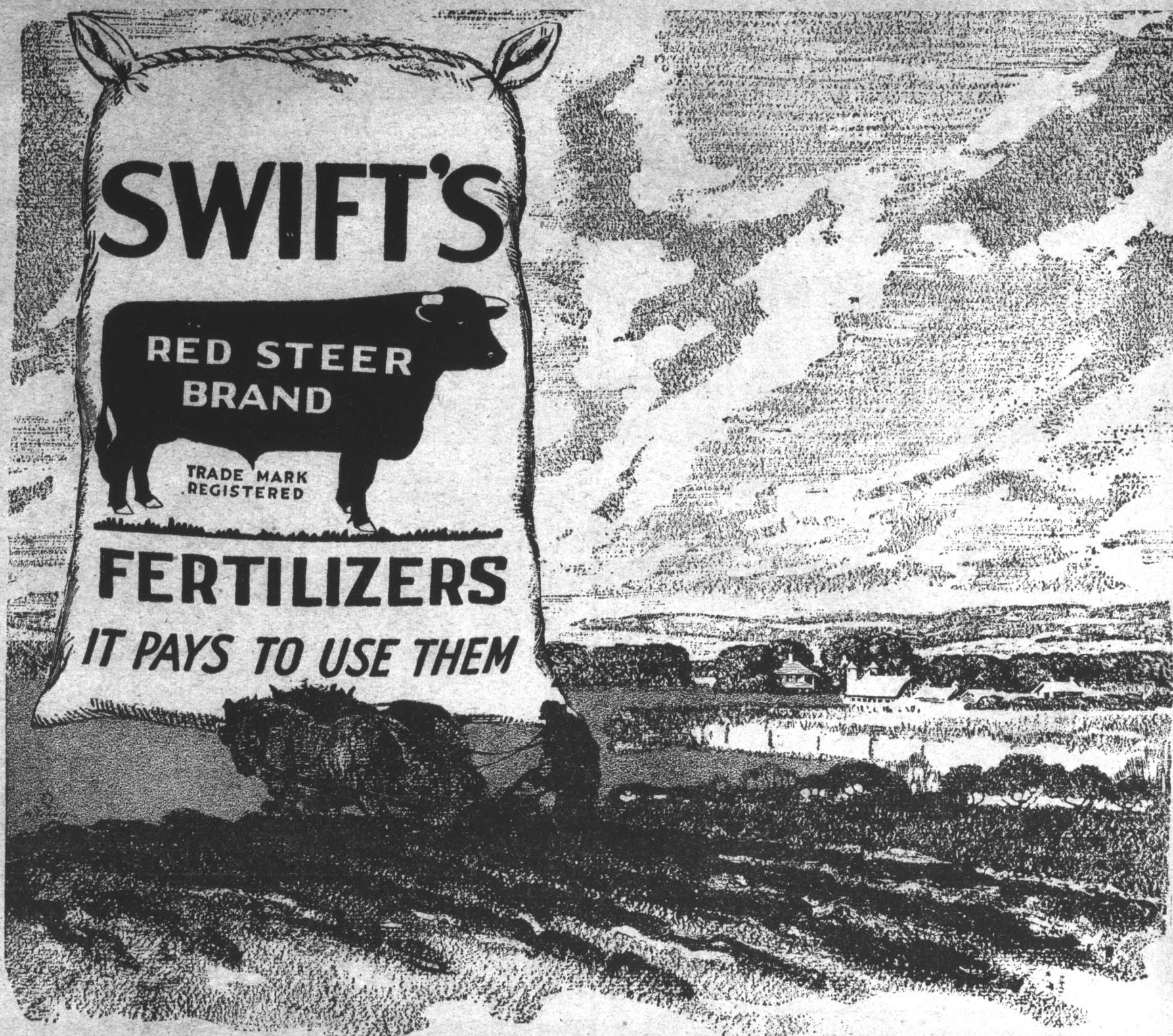
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Ammonia to promote a quick start, produce leaves and stalks and give vigor to the plants.

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Potash to stiffen straw and stalk and promote cellular growth.

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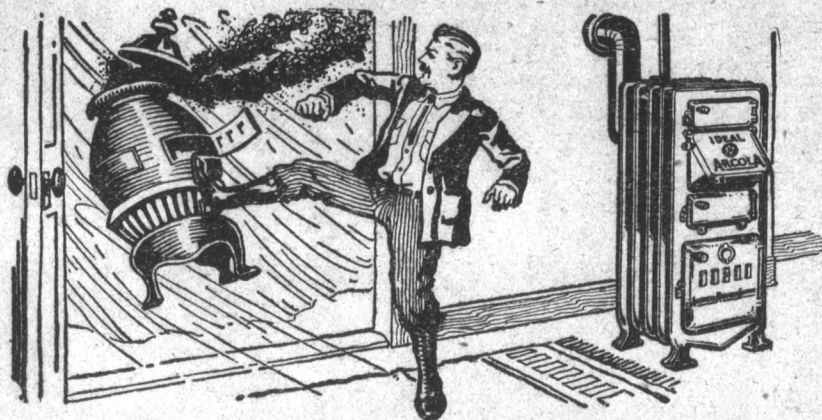
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Solves the Heat Question for Farm Homes



Throw out the old, dirty, wasteful methods of heating and install the modern, clean and efficient hot water radiator heating with an IDEAL-Arcola Radiator-Boiler

Make your farm home a haven of comfort. Warm every corner and drafty hallway. Give your good wife and yourself the comfort of an evenly warmed home with the healthful cleanliness and the great fuel saving of IDEAL - AMERICAN heating.

The IDEAL-Arcola Radiator Boiler

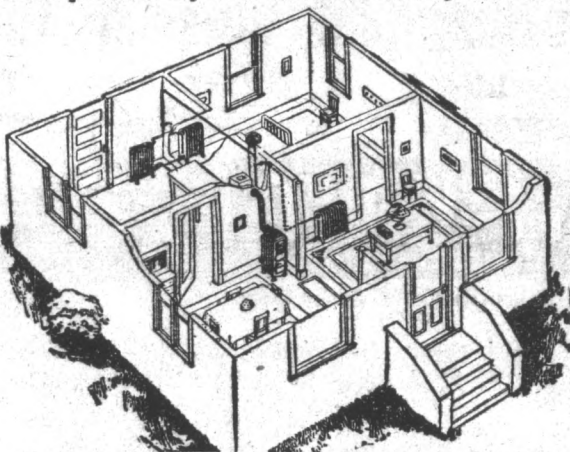
Gives the small farm house the complete comfort of a city mansion. The IDEAL-Arcola heats the room in which it is placed and circulates its surplus heat to the AMERICAN Radiators in adjoining rooms. It heats the whole house with one fire and lasts as long as the building stands.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years.

Cleanly heating—healthful heating—free from fire risks!

Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal. Brings cost of heating down to the lowest notch—and gives IDEAL comfort.



Simple way of heating a four-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and three AMERICAN Radiators

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

AMERICAN RADIATOR COMPANY

Write to Department F-3 Chicago

GRASS SEED Works Like a Hoe

Deal direct with our big cleaning mills in Chicago. Let us show you how our location in the big mail order center enables us to save you money on your seeds. We sell you the finest grade at a saving worth while. For the best quality on the market today, get our

WURTHMORE BRAND SEEDS

the grade that meets all state law requirements. Clover, Timothy, Sweet Clover, Alfalfa. Very fine quality. Insures big yields. Satisfaction or money back. See samples and prices of Wurthmore seeds before you buy elsewhere. They are the best crop producers and biggest profit makers known. Samples will convince you. FREE. Write today. American Mutual Seed Co. Dept. 1431 Chicago, Ill.

SCOTT'S FIELD SEEDS

Seed to be worth planting at all must not only grow, but must grow a profitable crop. For years we have been supplying seed practically free from weed seeds and dead grains, the only kind that will show a profit. Samples and our Field Seed Book, which tells exactly "How to Know Good Seed," are free. To save losses from weeds, you need this information. Write today.

O. M. Scott & Sons Co. 74 Main St., Marysville, Ohio.

Woodwards Yellow Early Dent SEED CORN

Michigan grown, Shelled and Graded, \$5.00 per bu. 56 lbs. Extra selected Butted Tipped and Graded, \$8.00 per bu 56 lbs. Also best Ensilage Corn. Prices same as above. Supply limited. Booking orders now.

D. WOODWARD & SON, Clinton, Mich.



Free Catalog in colors explains how you can save money on Farm Truck or Road Wagon, also steel or wood wheels to fit your running gear. Send for it today. Electric Wheel Co. 35 Elm St., Quincy, Ill.



Works Like a Hoe

Covers 8 Acres a Day

It does as good work as you can do with a hoe—it cuts every weed—None can dodge it—Keeps the surface in condition to readily absorb rain and produces a mulch of fine soil which prevents the escape of moisture. One trip to the row—narrow or wide.



With one horse The Fowler does as much work as you can do with a two-horse cultivator—and better work—because it cultivates shallow, and has no teeth to destroy crop roots. By removing plow foot you can cultivate astride the row. Can also be adjusted to cultivate crops planted either above or below the level without destroying the sloping sides of the ridges.

It's the cultivator for corn, cotton, tobacco, peanuts, beets and truck crops. It is unexcelled also as a bean harvester. Carried in carload lots at leading distributing points. Write today for catalog which fully explains The Fowler—IT'S FREE!

Harriman Mfg. Co., Box 514 Harriman, Tenn.

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Our Service Department

SUNFLOWER AND CORN SILAGE.

Early last spring C. C. L. told us through the Michigan Farmer that he was going to plant sunflower seeds in with his ensilage corn to increase the tonnage per acre. Now I am sure I would like to hear what Mr. Lillie has to say in regard to his experiment with the sunflowers. I would like to know whether horses eat this corn sunflower ensilage readily or not. And is it easily cut with the corn binder? I have always enjoyed reading Mr. Lillie's articles in the past. If he has a failure with any particular crop he frankly says so. Will clover chaff do to pack ice in or not. That is, the clover straw as it comes from the huller. It is fine.

Arenac Co.

L. R.

Some little time ago I stated in the Michigan Farmer, my experience with this sunflower silage. Undoubtedly, the inquirer missed this.

The sunflowers made a wonderful growth. Some of them were more than ten feet high, with stalks as large as your forearm, and it would bother to get some of the heads into a bushel basket. They stood way above the sweet corn and, of course, were very noticeable to passersby. There were many inquiries as to the reason for planting them, what we were to do with them, etc.

This combination of plants does not work very well in harvesting. The heads of the sunflowers were so heavy and the stalks were so long in comparison with the corn that they did not handle nicely when being bound into bundles. The men insisted that the corn harvester would not cut them, but it did without any difficulty. The great trouble was in loading them on the wagon and unloading to the ensilage cutter. I anticipated that there would be some trouble in getting these large heads through the ensilage cutter, but, fortunately, we had a large size cutter and the feed rollers would crush the heads and flatten them out so that no difficulty was experienced at all.

I am frank to say that I am in doubt about planting more sunflowers with the corn just because of the difficulty in handling them. However, they increase the bulk of the silage very materially and the cows eat the silage with an apparent relish. Everything is eaten up.

We are not feeding this silage to horses and so I cannot answer that question.

Clover Chaff for Packing Ice.

One year it was difficult to get sawdust and having a lot of clover chaff we packed the ice with this material, just as suggested by L. R.

If you use clover chaff for this purpose you must use more of it. You will have to leave the ice farther away from the walls and take great pains in packing the chaff in compactly. Otherwise it will not give good insulation. Also, a much thicker layer must be put on top of the ice than sawdust. Besides, it is not as convenient in getting the ice out when you want to use it, because a portion of the clover chaff will get wet and won't handle nicely like sawdust, but by using plenty of it, you can keep the ice all right.

C. C. L.

ABORTION RESULTING FROM AN INJURY.

I have a cow eight or nine years old that has aborted. She was about six months along. There has never anything of the kind happened before. I don't think it is from disease, it may have been caused by strain in getting up, it seemed hard for her. She is

giving a little milk. Do you think she can be brought to her milk? Will it be worth while to keep her? Would she be easily bred again, and would she be likely to do the same thing over again?

Mecosta Co.

D. M.

If you have reason to believe that your cow aborted as a result of injury I believe that you will find it worth while to try and bring her up to normal milk flow. If she is a good producer she will undoubtedly give enough milk during her milking period to more than pay the cost of her feed. It is a case where one must consider the value of the cow against the chances of the same thing occurring again.

W. M. K.

DEVITALIZED CHICKS.

Last spring at hatching time my hens were in fine condition. Eggs hatched fine. Chicks seemed strong until about eight weeks old, when their eyes looked wild and they could not go far without resting, but were most always ready for their feed. After about two weeks they would die with full crops. Please advise me what to do to prevent this ailment.

Ottawa Co.

A. M. R.

We would think that the trouble with the chicks was due to weak vitality in the breeding stock, as the chicks you raised from the other stock proved satisfactory. Plenty of exercise and green food are needed by breeders. Inbreeding sometimes results in a weak vitality in the young stock. We would advise culling out all of the old breeders which have produced poor chicks and only using breeders from the new stock which grew rapidly and developed into vigorous birds. Then buy a cockerel occasionally and introduce new blood to improve the vigor of the flock. Weak chicks are often produced by overfat breeders confined on a small range.

R. G. K.

BALANCING A RATION.

Will you please give us a balanced ration for milch cows? We have good silage with lots of corn in it, timothy hay, corn and cob meal, oats, barley and rye, and wheat straw. Cottonseed meal is \$4 per hundred. Will it pay to buy high-priced feed to balance the ration?

Tuscola Co.

A. H. S.

You could not compound an economical ration out of the foodstuffs you have on hand and furnish a sufficient amount of protein so the cows would produce a maximum flow of milk. It would be impossible. Of course, your cows will keep in good flesh and will do fairly well on this ration if you feed them liberally but you can avoid the necessity of feeding so much ensilage, timothy hay, etc. If you will procure a high protein food like oil meal or cottonseed meal, to mix with them. All of your roughage foods are deficient in protein. If you had clover hay or alfalfa hay, it would make a big difference. My advice would be to feed the equivalent of three pounds of cottonseed meal per day to each cow. I would prefer not to feed but two pounds of cottonseed meal to each cow and, say, one and a half pounds of oil meal, but by carefully increasing, you can feed that much cottonseed meal, or even more, without injurious results. In addition to this three pounds of cottonseed meal, I would feed a sufficient amount of corn and-cob meal, mixed equal parts with oats so that each cow would receive one pound of grain per day for every four pounds of milk produced in a day.

C. C. L.

PEAS AND OATS FOR HAY.

I have just moved onto a 160-acre sandy gravelly farm, and I believe, pretty badly run. I wish to sow oats and Canada peas this spring for quick hay. Are the peas sowed first, plowed in, and then oats broadcasted, or can I broadcast together and harrow in? Tell me just how to get the best results. What can I put in an old orchard sowed to June grass and used as a pasture? Don't wish to plow it, not this year.

Cass Co.

T. S. M.

On sandy land especially you stand a much better chance to get a crop of peas if they are planted deeply. A splendid way is, as you suggest, to sow the peas and plow them down, plowing about four inches deep. Then immediately sow oats broadcast and cover with a harrow or prepare the land and drill them in with a grain drill.

I am not sure that I understand your question about the old orchard, but you surely can get no crop in this orchard which is in June grass pasture, without plowing it. If it is a fairly good orchard it probably would not pay to plow it in an attempt to grow a crop. Many people would leave the orchard in grass, perhaps pasturing hogs that were fed a good grain ration so as to fertilize the orchard. It is a question whether an old orchard which has lain in sod for a number of years should be plowed because you are going to do some very severe root pruning, and I would prefer to consult an orchard specialist. Of course, if you are not figuring upon getting a crop of apples it might change the whole plan.

C. C. L.

MAPLE SYRUP FOR EVERYBODY.

BY WM. T. LANGLEY.

MOST of the articles on the making of maple syrup are of interest only to those who have a large number of trees. A great majority do not belong to that class. Any family having from eight to fifty trees should save money by making maple syrup every year.

The outfit is not expensive. Mine cost less than three dollars, and from fifty trees the past two years we made twenty-one and seventeen gallons respectively of fine syrup for which we could have taken three dollars per gallon.

The first essential is a good sap spout. Ours are made of steel, with hooks on which to hang the sap cans. Insert these in holes bored on the south side of the trees about two feet from the ground. Our sap pans were secured from the local bakery, they being gallon cans in which pie material is packed. Near the top edge of each of these we punched a hole with a ten-penny nail to enable us to hang the pails on the spouts. This kept the receptacle up where the wind would not blow the sap outside and waste it.

For boiling we use a sheet steel pan five inches deep by 22x22 inches for our four-hole stove. If one has a six-hole stove a pan 22x32 inches is the proper size. Remove the lids and the other parts and set the pan on, filling it about one-third full of sap. At the same time clean out the reservoir and fill it with sap to be heating for replenishing the supply in the pan as it boils down.

Each morning strain the contents of the pan in a preserving kettle to finish off by carefully boiling to the right consistency after clarifying by the addition of a small amount of sweet milk. Can the syrup in glass cans or jugs while it is still hot.

This whole outfit will not cost to exceed three dollars, and a single cord of wood will boil down about eleven gallons of syrup. Furthermore one can do this at a time when there is very little else to do. The time spent not only brings good returns but the product adds to the satisfaction of living.

"I Am Going To Buy This Spreader This Spring!"



- ① Low Down
 - ② Light Draft
 - ③ Extra Strong
 - ④ Chain Drive
 - ⑤ Steel Distributer
 - ⑥ Solid Bottom
- The Original Wide Spreading Spreader.

Say this to yourself--
and then do it. Decide
to pay up your debt to
your soil. Decide now
to spread with the
New Idea--this year--
this spring!

MAKE this statement--and plan now to carry it out. At least, get all the facts at once. Not next year, but *this year--this spring!* For now is the time to prepare for heavier crops this year. And regular, even spreading with the New Idea will do this. It will put new blood--new life--into your land. It will ripen your soil for this spring's seed.

Why The New Idea?

Not simply because the New Idea is the original wide-spreading spreader do we urge you to buy it, now. Yet that leadership does mean much to you. It gives you valuable patented features that can be had only in this machine.

And not because it is the best known and the largest-selling spreader in the world today. Though this fact protects you. It confirms your judgment--backs it with approval of thousands.

The real big reason is this: *You want the New Idea because it spreads manure, straw and lime most quickly, most thoroughly and most profitably.*

You want it because of the labor it saves--because of the extra years it lasts--and because of the light haul it gives with a heaped-up load.

Spread Straw, Lime, Manure With One Machine

The New Idea is strongly built. It has no gears to break. No complicated parts to get out of order. A simple, low-cost attachment makes it a big-capacity straw spreader. This and its wide spread, its perfect shredding and its adaptability to every type of farm everywhere, mark it *the spreader for you--this spring.*

A network of New Idea branches covers the country. If needed, spare parts service is given quickly. And in every community there is a progressive dealer who handles New Idea Spreaders and has machines on hand for early spring delivery.

To make certain of bigger crops through better soil fertility, order a New Idea. To make certain of getting your New Idea this spring, order it now--today.

Built by Spreader Specialists

The New Idea Spreader was not built on the spur of the moment to meet competition. It is the result of 20 years constant improvement by Spreader Specialists. Untiring effort on the part of the men who have specialized on this one vitally important farm implement for a business lifetime--accounts for the present prestige of the New Idea.

Be sure to ask your dealer for a free copy of our valuable book, "Feeding the Farm." It is filled with vital facts on fertilizing that you will want to know.

The New Idea Spreader Co. "Spreader Specialists" COLDWATER, O.

Branches in:

Harrisburg Pa. Chicago, Ill. Omaha, Neb. Syracuse, N. Y. Kansas City, Mo. Waterloo, Ia.
Indianapolis, Ind. Minneapolis, Minn. Peoria, Ill. Columbus, Ohio. Jackson, Mich. St. Louis, Mo.



Dairyland Tales

By R. G. Kirby

SEE that beautiful field of tasseled corn? Hear the cool rustle and swish of the blade-like leaves and the sturdy stalks as the breeze roves through the even-standing forest of green and gold?

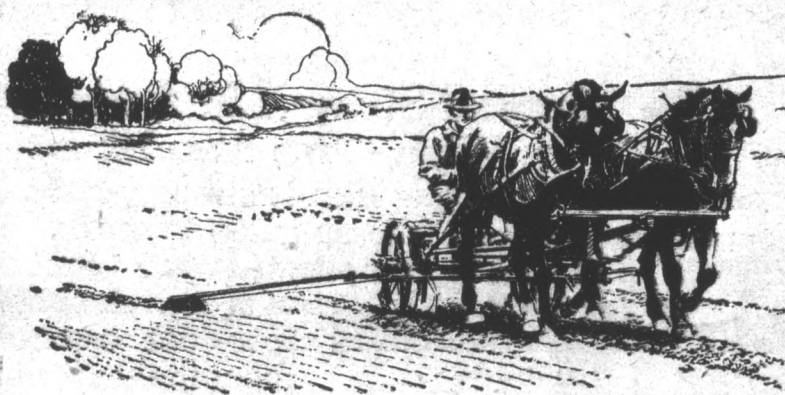
Bright prospects for some one! That field of corn may belong to you. If the stand is regular and heavy it is just the kind that grows where an **International Corn Planter** has been at work earlier in the season. Bright crop prospects go hand in hand with these planters because—

The variable drop clutch will deposit 2, 3, or 4 kernels to the hill, as desired, and it works with a high degree of accuracy. Correct planting is an essential to good crops.

The tongue is adjustable to height of team and, together with the quick action check spring, results in an evenly checked field that can be cross cultivated without digging up any of the hills. Insures healthy, even stand of corn.

A foot drop lever is provided for planting head rows or dropping hills without wire. Makes a nicely completed, full field when used the first way and enables you to make use of every foot of ground in "patchy" fields.

If you are interested in bright corn prospects it will pay you to scribble your name and address along the margin of this advertisement and mail to us so that we can send you an illustrated pamphlet telling all about International Corn Planters. Later—see the International dealer.



INTERNATIONAL HARVESTER COMPANY
CHICAGO OF AMERICA INC. U S A

AT the college they have a herd of milked three times per day if he could purebred dairy cattle which is an obtain the necessary labor. However, example of the chances of building up he cannot hire the labor and his herd a purebred cattle business with a small is only milked twice each day.

investment. There are fourteen cows in the herd and all of them are direct descendants of one cow purchased in 1910 for \$150. Ten years looks like a long time to plan ahead in the live stock business, but there many farmers can make starts this year which will be a great source of profit and satisfaction to them ten years from now.

The writer recently visited in the home of a dairy farmer and another neighbor who also keeps cows happened to be present. If a national lodge called the Loyal Order of Cow Keepers might be organized it could surely develop a substantial membership and the members would never lack for subjects to talk about. Hen fanciers, base ball bugs and tin lizzie owners are leaders among the conversational champions, but they can never beat the cow keepers when it comes to interesting talk about a very worthy subject. It surely pays dairymen to get together. It seems to do them lots of good.

One dairyman in our section says it pays to let the cows out twice each day and give them warm water to drink. Then they drink more water and it increases the flow of milk. He says that his cows drink better after eating but before they have had a chance to lie down and rest.

Individual drinking cups have proven practical on some dairy farms, the owners claiming that the cows drink more water when it is always before them. They take smaller drinks at more frequent intervals and in the aggregate the increased amount of water consumed causes an increase in the amount of milk.

How many times each day do you milk the cows? Probably twice, and most farmers consider that is enough to keep them busy when combined with the remainder of the farm work. We know one dairyman who says that it often pays to milk the cows three times each day for a short time after the freshening if they are heavy milkers.

Another farmer who went to the National Dairy Show at Chicago claims to have met an Illinois farmer who said he would always have his cows uses caustic potash and does a smooth

When finishing the barn always save any panes of surplus glass and store them for future use. A fine looking dairy barn can be seriously marred by one broken pane of glass, and it pays to always have the repairs ready for such work.

Dairymen who have not received the last quarterly bulletin of the college experiment station, should drop a line to Dean Shaw at East Lansing. Here are some of the good articles in that bulletin that are worth reading: "Records of Dairy Production," "Silage Incubation," "The Bull as a Carrier of Abortion Disease," "Cooling Milk on the Farm," "Cost of Milk Production in Livingston and Macomb Counties," and "Suggestions for Handling Cows on Yearly Tests."

One Guernsey breeder has found that a couple of barrels placed in the barnyard are fine exercising machines for the cattle during the winter. They enjoy shoving and rolling them around. There ought to be plenty of barrels in the country now that might be put to this laudable use where it is found practical.

We recently met a breeder of purebred stock who started in with one heifer, twenty acres of land, plenty of debts and a good disposition. He now has one hundred acres of land, and a fine herd of cattle. He has earned it all by farming and is satisfied with the business.

This breeder believes that dehorning of dairy cattle has caused him to lose money whenever it has been done. He uses caustic potash and does a smooth

It puts the grain in the sack—does not waste it in the stack



Supplied by the best threshing machine manufacturers Demanded by the best farmers and threshermen

All the Grain Is Coming to You

Every kernel of the grain you have raised is yours. Then why let any of it go into the straw stack? You don't have to any more. The Grain-Saving Stacker returns to the separator and into the sack or wagon the grain that is blown to the

The Grain-Saving Stacker Delivers It

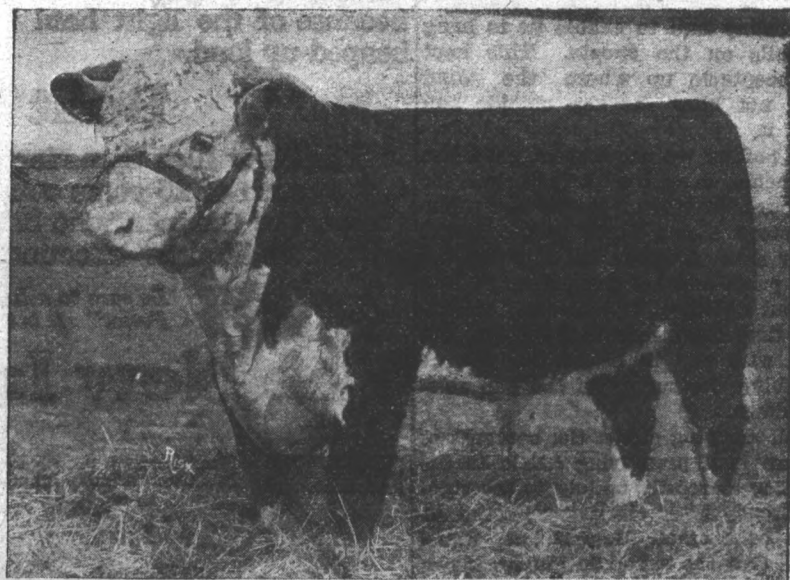
stack in the ordinary process. Demand the Grain-Saving Stacker on the machine for your next job. See that above trade-mark (in colors) is on each side. Write to any of the list below for full information about this sterling profit-saver.

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Aultman & Taylor Machinery Co., Mansfield, Ohio	Robt. Bell Engine & Thresher Co., Ltd., Seaford, Ont.
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Harrison Machine Works, Belleville, Ill.	
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Port Huron Engine & Thresher Co., Port Huron, Mich.	
The Russell & Co., Massillon, O.	
Russell Wind Stacker Co., Indianapolis, Ind.	
Sawyer-Massey Co., Ltd. (U. S. Agency), Moline, Ill.	
Southwest Mfg. Co., Oklahoma City, Okla.	
Swayne, Robinson & Company, Richmond, Ind.	
The Westinghouse Company, Schenectady, N. Y.	

The Grain-Saving Stacker Originated With the Indiana Manufacturing Company, Indianapolis, Ind., Who Also Originated the Wind Stacker.

High Class Bull Comes to Michigan



Repeater 173d, purchased by Allen Bros., Paw Paw, Michigan, of O. Harris & Sons, Harris, Missouri, at their recent sale, for \$5,200. He was sired by Repeater, who was Champion and Grand Champion at American Royal and The International the two years he was shown, and as a sire of Grand Champion bulls he has no equal. Repeater and his sons have won fourteen championships and seven Grand Championships in the last ten years at the American Royal and The International. The dam of Repeater 173d was sired by Bright Stanway, the last great Anxiety bred bull selected by Gudgeon & Simpson for use in their herd.

job of removing the horns from the calves. He finds that it pays and the cows have a more gentle disposition and there is less danger of injury.

WINTER PIGS.

AS a general rule, there is less to be made from winter or fall pigs than from those farrowed in the spring. If the spring pigs can be brought to a marketable weight before the market declines the best profit can be realized; however, this is more or less a gamble. There is a good deal of high-priced feed fed to the spring litters during the spring and early summer and when the prices fall there is in many cases a loss or a very narrow margin of profit.

With the fall litters it is best for the pigs to come in September, but those that come later, even into the winter, can be profitably fitted for the market in the spring or later, while the prices are still high.

One of the main points is to have good sows. They must be of the meat-producing type as well as the sire, not necessarily anything fancy, but of good, strong, robust constitutions, as near the perfect type as can be obtained. The sows should be kept in the best of condition from the time they are bred until the pigs are weaned, then the pigs will have a good start when they are born.

The pigs must have a warm, dry place to sleep. Boards can be fastened up on their edges to enclose a pen six or eight inches deep in which the bedding can be placed. There should always be a good supply of bedding furnished and it should be changed frequently. Plenty of these nests should be made so that the pigs will not crowd too much and get overwarm. It is a very good plan to have an oiler, but a small amount of oil poured along their backs occasionally will keep their skin in good condition, as well as destroy any lice which may be present.

It is by far the best plan to let the pigs feed themselves from self-feeders, the object being to keep them full of the right feeds at all times. As soon as the pigs begin to travel around before they are weaned they should have access to a feeder with shelled corn, tankage and a mineral mixture, they will begin to eat these while they are quite young. If skim-milk is available it will help materially to give them a good start. Water should be before them at all times. With this feed they will grow fast and will be nice and fat when they are weaned, practically weaning themselves. With this layer of fat on their bodies they are able to withstand the cold and will continue to make good gains throughout the winter and can be put on the market in the spring or early summer while the prices are still high.

It costs more per hundredweight to raise fall pigs than spring pigs, due to the lack of pastures. However, this is offset by the higher prices. If careful attention is paid to all details, it is, in my estimation, profitable to raise fall pigs. During the winter one's time is less expensive and more care and attention can be given.

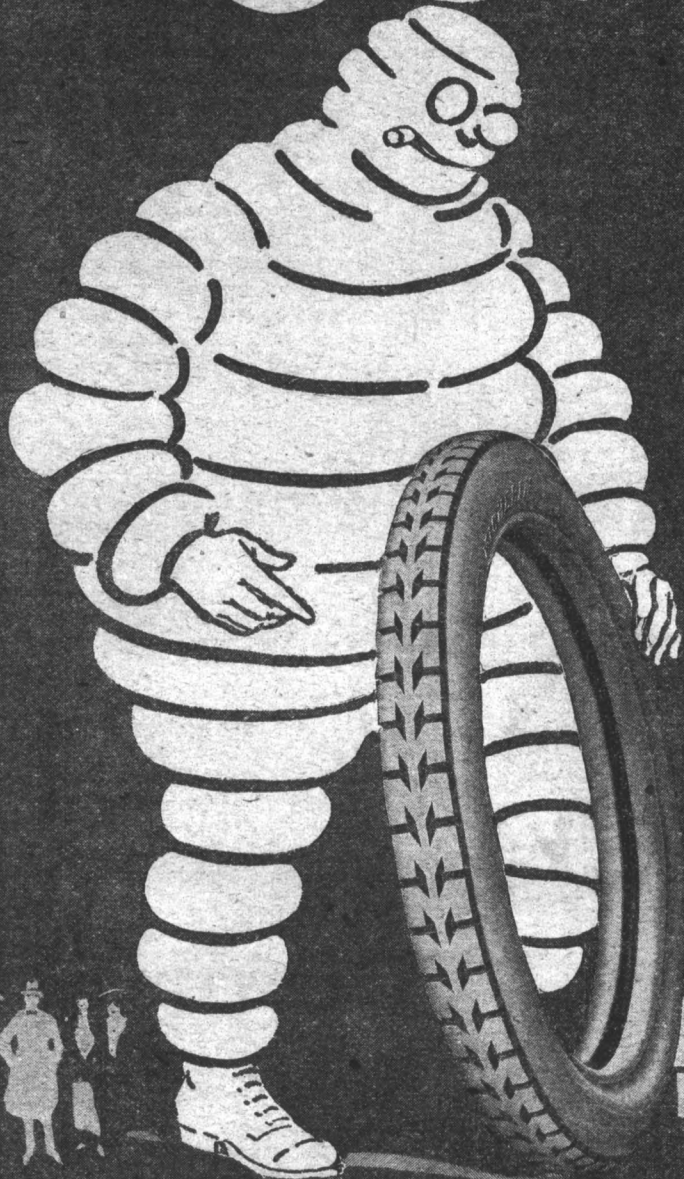
Barry Co.

A. WINDES.

Sheep as a side line for dairy farmers 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 the 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. The man who has plenty of time, and has a natural love for the business, may raise fancy winter lambs and secure greater profits, and he may be justified in keeping a larger flock. The average dairy farmer, however, may keep about thirty well-bred mutton ewes on a 150-acre farm.

MICHELIN

30X3½



The small car is moderately priced because it is a small car—not because poor materials are used in its construction. Maintain its efficiency and economy by using Michelin Tires.

Small size Michelins are made of the same quality materials, by the same careful workmen, in the same modern factory that have made Michelin Ring-shaped Tubes and other Michelin products famous.

Michelin Tire Company, Milltown, N. J.

Other factories: Clermont-Ferrand, France; London, England; Turin, Italy.
Dealers in all parts of the world



Eureka Potato Planter

Pays for Itself in Labor and Time Saved

One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. Furrow opens and seed drops in plain sight—an equal distance apart, at uniform depth, with absolutely no injury to seed. Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for free catalog on this great line of potato planters—the largest line made. Sizes for 1 or 2 rows, with or without fertilizer attachment. In Stock Near You. A success for over 20 years. Whether you are a large or small grower—write today.

EUREKA MOWER CO. Box 932 UTICA, N. Y.



CLOVER SEED

Send us your samples of clover seed, vetch, garden beans, red kidneys, white beans, etc. Name lowest price or ask us for bids.
W. L. IRELAND & CO.

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Seed Corn Selected seed of the following varieties testing 90 percent or better. Early Butler, Pride of the North, Leaming, White Cap, Yellow Dent, Mammoth White Dent. Price \$3.00 per bushel. Bags extra at 60 cents each. Sample ears at 25 cents each.
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And the Cletrac not only plows—it's a mighty big help in preparing the seed bed and harvesting. In winter when the horses are laid up, eating expensive feed and getting daily care, the Cletrac is busy clearing roads, sawing wood and doing odd jobs.

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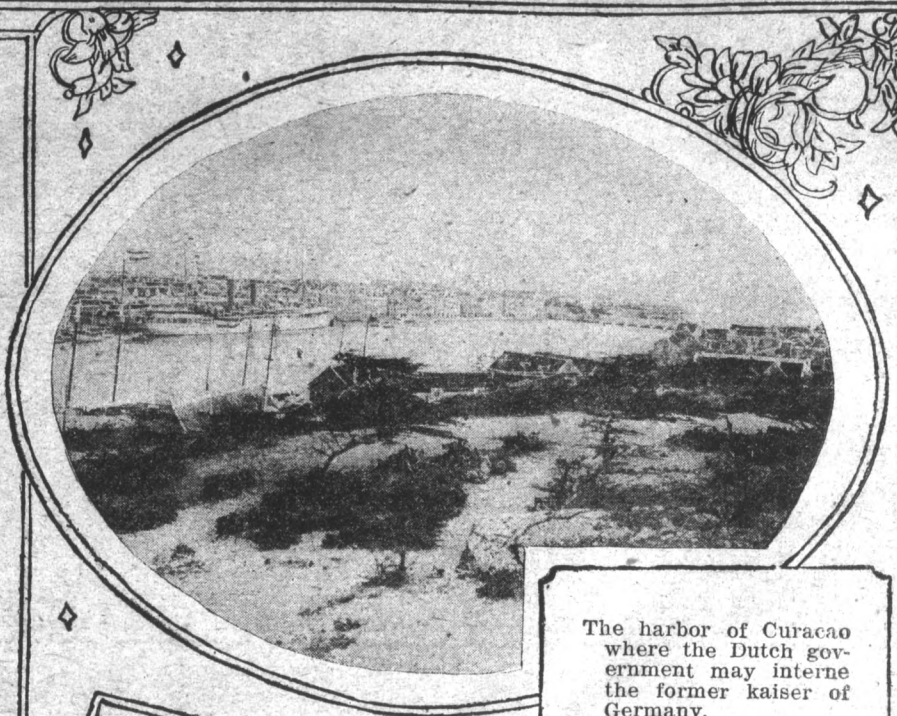
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WORLD EVENTS IN PICTURES



Charles M. Schwab declares that the new processes of steel making claimed to have been discovered by the French and Belgians are nothing more than what we have followed for years.



The harbor of Curacao where the Dutch government may intern the former kaiser of Germany.



Members of farmers' organization representing 36 states in session at Washington, D. C.



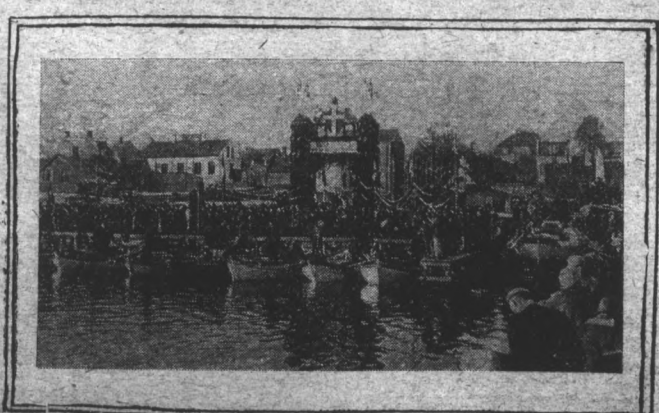
Evart McGowan, world's champion.



Europe's doll craze starts the walking doll epidemic in New York City.



Fashion predicts that the sports skirt will again be popular this season.

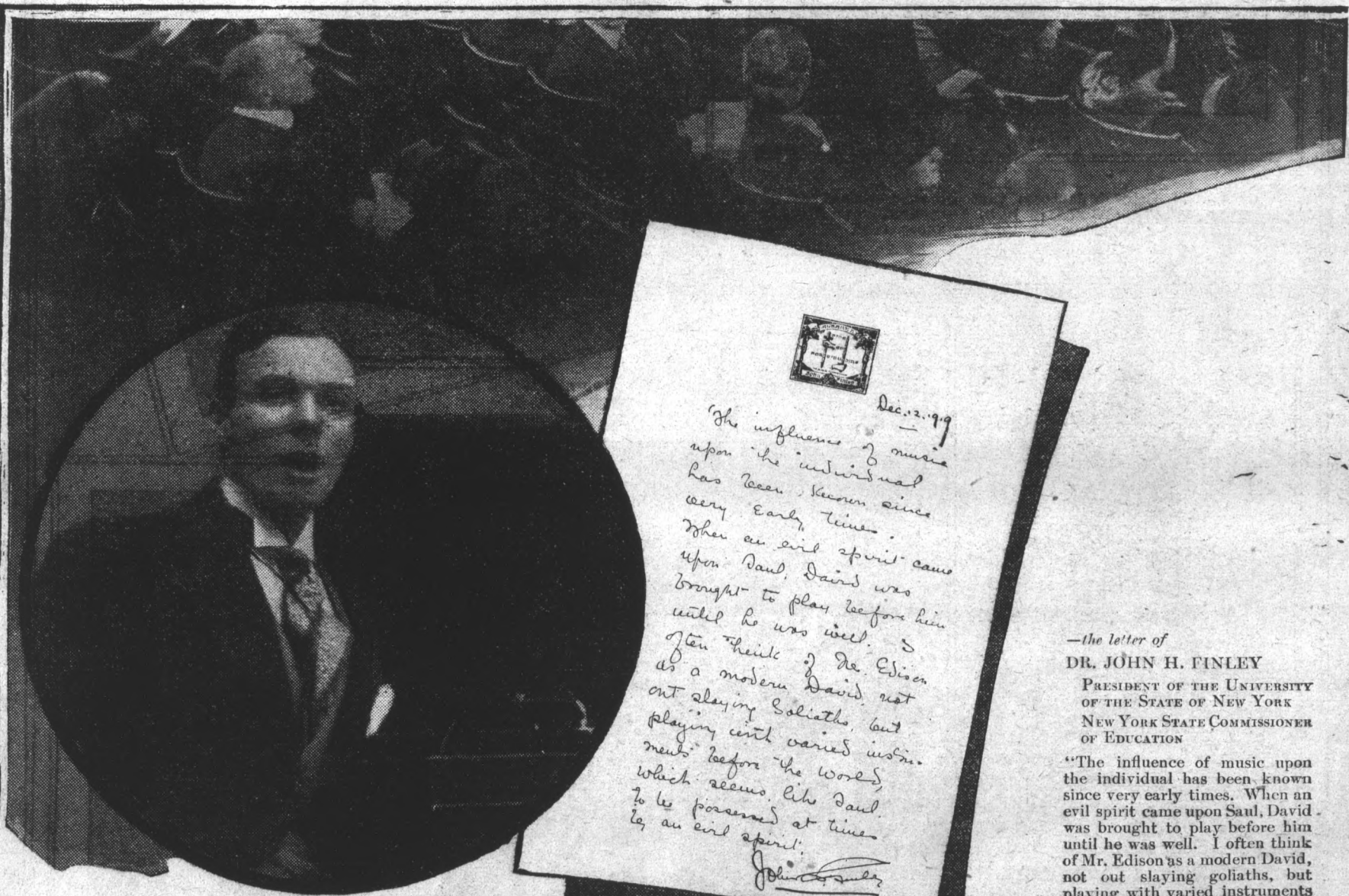


Denmark celebrates return of Schleswig-Holstein.



*"The Phonograph
with a Soul"*

The NEW



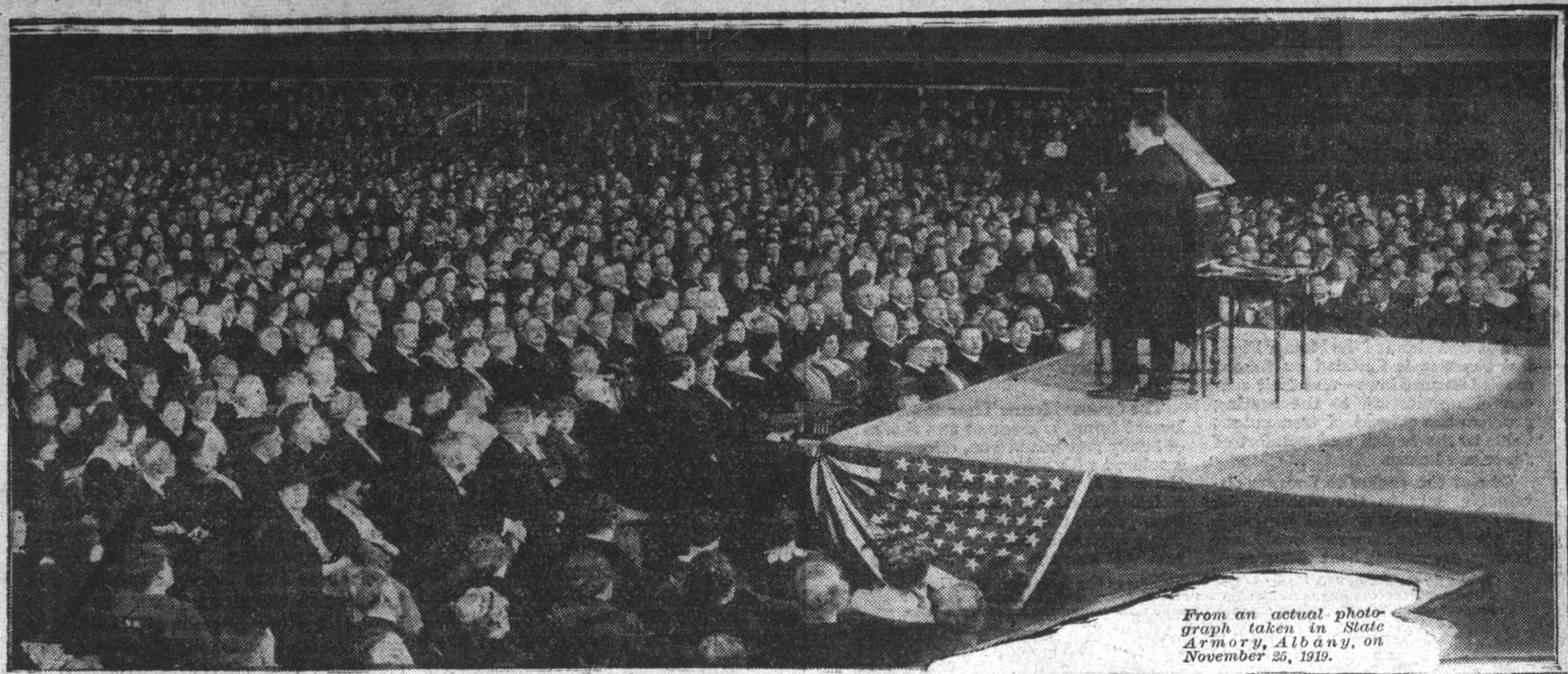
Close-up of Mario Laurenti comparing his voice with its RE-CREATION by the New Edison.

—the letter of

DR. JOHN H. FINLEY

PRESIDENT OF THE UNIVERSITY
OF THE STATE OF NEW YORK
NEW YORK STATE COMMISSIONER
OF EDUCATION

"The influence of music upon the individual has been known since very early times. When an evil spirit came upon Saul, David was brought to play before him until he was well. I often think of Mr. Edison as a modern David, not out slaying Goliaths, but playing with varied instruments before the world, which seems, like Saul, to be possessed at times by an evil spirit."



From an actual photograph taken in State Armory, Albany, on November 25, 1919.

EDISON

"The Phonograph with a Soul"

6,000 Teachers Hear Astounding Triumph of Phonograph's New Art

In daring comparison made with Mario Laurenti, famous baritone of Metropolitan Opera Company, Mr. Edison's Official Laboratory Model perfectly matches Laurenti's voice

WOULDN'T it be wonderful to entertain your friends with the phonograph whose realism held these 6,000 teachers spellbound and caused Dr. Finley to write his beautiful tribute to Mr. Edison.

As you read the amazing story which follows, remember that you can have in your own home an exact duplicate of the Official Laboratory Model which made music-history at Albany on November 25, 1919.

* * *

November 25, 1919, was the memorable evening when Mr. Edison made his now-famous test in the State Armory, Albany, New York, before an audience of 6,000 people.

The audience was one that truly represented you and the rest of the great American public. The entire 6,000 consisted of teachers, principals and superintendents of the public schools of New York State—the fine, intelligent kind of men and women to whom you have entrusted the education of your children.

The singer was a distinguished artist—

member of the famous Metropolitan Opera Company, New York—Mario Laurenti, the glorious-voiced baritone, one of the truly great voices of the world.

* * *

With the help of the illustration, drawn from an actual photograph, you can follow in your mind's eye the whole marvelous thing that happened.

Laurenti stood beside a graceful William and Mary cabinet. He started to sing. His glorious voice filled the auditorium. The audience, which had been a-buzz with curiosity throughout preliminaries, now settled back in its chairs, and surrendered itself to the exquisite artistry of Laurenti's voice. Suddenly the audience sat up in abrupt surprise. A low, wondering whisper ran through the auditorium. Folks rubbed their eyes. Laurenti's lips were absolutely still, but his voice continued to reach them with undiminished beauty. The New Edison had taken up Laurenti's song and was RE-CREATING his voice with such perfect realism that the human ear could not tell that he had ceased to sing.

As plainly and simply as we can tell it, such is what happened. We wish you could have heard those 6,000 teachers express their amazement and delight. As Dr. Finley so finely suggests in his letter, it seemed that Mr. Edison had ushered in a new epoch in music.

The Official Laboratory Model stands today as the only phonograph which can meet the human voice in competition—the only phonograph which has proved its right to stand in your home and bring you the joys of the world's great music and represent to your friends the culture of your home.

* * *

Look in your local papers for the Edison Dealer's announcement. He has an exact duplicate of the instrument with which Mr. Edison originally developed the RE-CREATION of music at a cost of 3 million dollars for research work. He will guarantee this Official Laboratory Model to do everything which was achieved by the instrument used at Albany, and he'll be glad to give you Mr. Edison's unique Realism Test, so that you can experience for yourself the magic power of the New Edison's RE-CREATION of music.

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District Number Three Changes Its Name and Standards

By Alta Lawson Littell

SILENCE reigned in Burton Twp. Dist. No. 3. For once no sound save the ticking of the clock and the occasional rustling of a leaf disturbed the tortured air. Teacher was bending over her desk, absorbed in a leaflet she had received that morning from the county commissioner, her forehead slightly wrinkled as she wrestled with its import, her lips pursed up occasionally as sentence after sentence unfolded itself. It was one of those rare moments which come to every school when, classes suspended for the moment, teacher and pupils alike seem loathe to break the calm. Even Master Willy Merry, son of the director, and leader in all deeds of darkness, seemed busy. But whether he was busy, or like the celebrated busy man of old, simple "Seemed busier than he was," teacher was too much engrossed to find out.

The subject of raising the standard of Burton Twp. Dist. No. 3 had occupied her mind for several weeks, but so far she had made little progress. The pamphlet from her examiner seemed to give her the clue. It was labeled, "Requirements for a Standard School," and proceeded to set forth in such concise form that even a child could grasp it, the things necessary to give them the right to call their school "Standard."

They had a fair start as it was, with grounds and building. The standard only required a half acre, while the early settlers had set aside two acres for their building and put out trees, lilacs and snowballs which had attained to a goodly size. The schoolhouse was well built, though in a bad shape, and certainly the "interior decorations" were far from "attractive." The desks, too, were all of a size. They were intended for twelve-year-old children, and left six-year-old Isabelle Jaynes with dangling legs, while nineteen-year-old Jim Samson who just came winters, could scarcely squeeze his big six-foot frame between desk and seat.

The organization wasn't so bad. There was a definite program, a fairly regular attendance, the discipline—

A hard, small paper ball hit teacher fairly between the eyes and the question of discipline came squarely forward for settlement. The subdued titter which started quieted as teacher, very red as to face, and decidedly snapping as to eyes, straightened up.

"Who threw that paper ball?" All the dignity of seventeen years couldn't quite keep the quiver of small girl mad out of her voice.

The expectant hush was broken by Master Willy.

"Please, Miss Martin, I didn't mean to hit you," the righteous innocence in his voice could not have been surpassed by angels. "I got my tenth problem all wrong, and I was just throwing it at the wastebasket."

The wastebasket was fully six feet

from teacher's head as she sat at her

desk, and Master Willy's boast was

that he never missed his aim. But as

every man is considered innocent until

he is proven guilty, and no one has yet

found a way to X-ray motives, teacher

was forced to accept the explanation.

The discipline in Burton Twp. Dist.

No. 3 must remain a mooted question

two or three committees, but not all

until she found a way to "get" Willy

Merry. She already knew the one sure

someone to curb his soaring genius at

way to interest him, start the school

times. So Jim Samson, whose size

to singing. Plans which had been

counted for much he lacked otherwise,

formulating for bettering the school

and Martha Merry, who managed Wil-

sonce Willy and a group of his sate-

ly very well for a sister, were named

lites serenaded her, suddenly crystal-

ized as she turned to her desk and her

eyes fell on the little paper. Why not

Martin tried to be very impressive.

let that last class go, and tell the chil-

dren about the standard schools?

"How many of you would like to

have your mother's sitting-room look

like this schoolroom?" she suddenly

asked. Shivers of disgust ran over the

girls, while the boys looked curiously

about, for the first time really seeing

what the room looked like. Discolored

plaster and patches with no plaster at

all, proclaimed where sundry leaks in

the roof had done their work. The

walls were streaked and grimy, show-

ing where various teachers in an effort

to remove surface dirt had swept some

off and ground some in. Two windows

were minus panes of glass, and board-

ed up temporarily. The stove, though

as clean as Miss Martin could make it,

had known too many years' service to

look altogether homelike. Blackboards

were cracked and gouged; desks were

scratched and carved, the soft wood

floors were rough and splintery; the

teacher's desk had long ago lost its

early coating of varnish, and her chair

was held together with strong wires,

twisted on by a forgotten predecessor.

"My mother says she'd just die if

she had to stay a day in this old barn,"

daintily clad Gwendolyn Currie volun-

teered with upturned nose.

"Yet she thinks it's good enough for

you to pass five days a week eight

months of the year in," Miss Martin

thought. But what she said was,

"Well, then, how many of you would

like to help fix it up so, we would be

proud of it?"

Hands waved wildly and eyes shone

expectantly. If they could do some-

thing besides study, school wouldn't

be so bad after all.

"But where'll we get the money?"

Martha Merry, Willy's older sister,

had a practical turn of mind. "Every-

thing is awful high now, and I know

the district won't spend any money it

doesn't have to."

"Yes, pa says school taxes are too

tarnation high now for all the good we

get out of 'em." Twelve-year-old Sam

Kennedy who was still in the third

reader volunteered.

"We might earn it ourselves," Miss

Martin suggested. "There's a number

of ways to earn money, if we want it

badly enough."

"Box social," "Cake sale," "Chicken-

pie supper," "Minstrel show," sugges-

tions came thick and fast, and objec-

tions were almost as numerous.

"The church always has a cake sale

just before Easter and our mothers

wouldn't let us." Socials would mean

the mothers had to do all the work, we

want something where we can work

ourselves."

"A show is too much work, you have

to be practicing all the time."

It took an extra hard tap of the bell

to quiet the babel and put the thing to

vote in an orderly manner. When the

tellers announced that the show "had

it," applause mingled with groans

greeted the verdict.

"We'll have to have a committee to

take charge," Miss Martin suggested.

"Willy Merry," a dozen voices call-

ed out. "He can be the whole com-

mittee."

Willy was plainly willing to accept

the committee, but Miss Martin

was wise. Willy had ideas enough for

No. 3 must remain a mooted question

two or three committees, but not all

until she found a way to "get" Willy

Merry. She already knew the one sure

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sonce Willy and a group of his sate-

ly very well for a sister, were named

lites serenaded her, suddenly crystal-

ized as she turned to her desk and her

eyes fell on the little paper. Why not

Martin tried to be very impressive.

"Only those boys and girls who have good marks in their classes and in deportment as well, can take part in the show."

Hands reached under desk for books which had never before been carried home for study, though teacher had often suggested it.

"A standard school means something more than a well-kept building," Miss Martin went on. "It means well-behaved pupils, well-prepared lessons, good recitations and real study instead of half play. Don't you think we can have that here, if The Eton school just two miles away can boast that they are standard?"

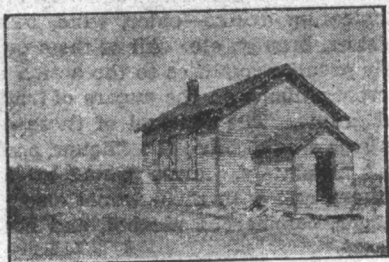
A vigorous nodding of heads answered her.

"Why can't we have a name, too, instead of just 'Dist. No. 3?'" Martha Merry asked suddenly. "That doesn't mean anything at all."

"Let's call it 'Willowdale,'" Gwendolyn Currie waved her hand toward the willows bordering the brook.

And so Willowdale School began its career.

(The requirements for a Standard School may be obtained by writing your county commissioner.—Eds.)



SPRING JOYOUSNESS.

BY MARTHA S. LIPPINCOTT.

Spring is coming, yes I know,
For the birdies tell me so,
They are singing in the trees,
My delighted heart to please.

All of nature, everywhere,
In their joyousness will share.
Nodding, blooming flowers say,
Spring is coming back our way.

They will make the world so gay,
In her floral, spring array.
All my heart is singing, too,
In this joyous time to woo.

Love is creeping in our hearts,
As old winter now departs,
And the warmer days will seem
Making us so sweetly dream.

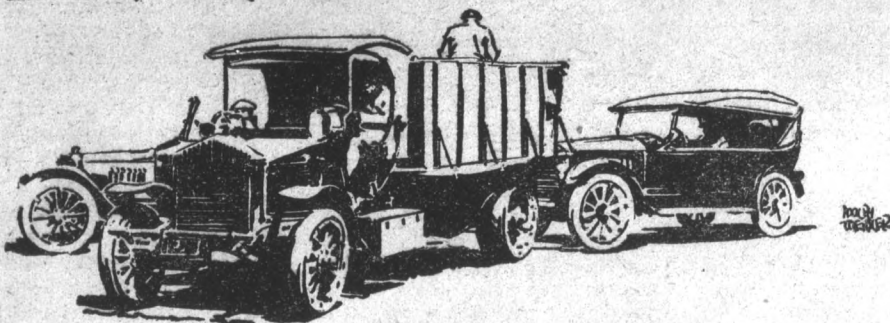
Thrilling spring is in the air,
Making life all seem so fair
That our hearts all long to sing
With the joyousness of spring.

WHEN STORIES WERE BAKED.

"T'S in the oven!" That was the ancient Babylonian version of the modern printer's "It's on the press." When a native of Babylon or Egypt wanted to "write," he shaped soft clay into little bricks. On these bricks he which stood for letters, words or scratched signs, sometimes pictures, ideas. His "pencil" was an oyster shell or a piece of broken pot. After he finished his story, he had it baked in an oven or dried in the sun. Later the Egyptians found that the pith of the papyrus—a plant growing in the Nile Valley—made a good foundation for writing; so they scratched "papyrus letters," using a reed pen and ink made from gall-nuts and sulphate of iron. For hundreds of years papyrus was the world's "writing paper." But when Mohammed conquered Egypt, Europeans could not get papyrus; so they used a fine leather instead. Even today leather is sometimes used—only we call it parchment.—Everyland.



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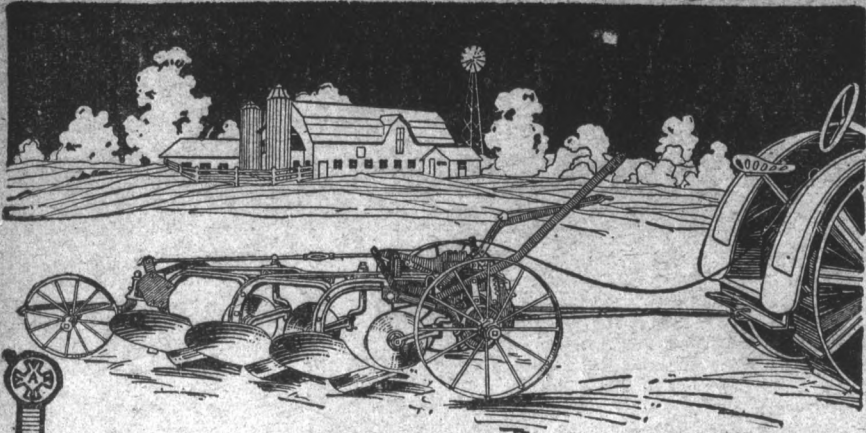
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excel in all these respects. Axles, beams, beam braces and coulter stems are of extra size. Power lift device consists of a strong, simple clutch mounted on the furrow axle and directly connected with furrow lever—no chains or sprockets. The wheel box forms the moving part of the clutch, reducing the number of wearing parts.

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1877

Life Without Bacteria

By Edward J. Leenhouts

ONE of the most interesting facts foods and popular drinks. It is true that a study of science reveals that these foods owe their appetizing qualities entirely to the activities of the close relationship which exists between the welfare of man and the fermentation bacteria. As examples, we might mention butter, cheese, pickles, sauerkraut, etc. Even bread, the staff of life, is made digestible and palatable through the work of the "yeasts," usually classed with microbes. The death of all these organisms would, indeed, be a calamity. Can you imagine the depth of feeling which would be called out if we were compelled to bid farewell to our old standbys—the spicy dill-pickle, the savory sauerkraut, and the odoriferous Limburger cheese? For many people, life would no longer be worth living. Finding a satisfactory substitute for bread and butter would be a big task.

The cause for this misconception is found in the fact that most people do not recognize different classes of microbes. They call them all "germs," or, more, colloquially still, "bugs," and they hold the entire group responsible for the misconduct of a few of their members. Obviously, that is as unfair to the rest of the species as it would be to us, if we were blamed for the crimes of the Bolsheviks.

The story of the relation that exists between the activities of microorganisms and the rest of the universe reads like a romance. Let us point out briefly, and in a very elementary way, those activities of the bacteria which have a direct bearing on our lives, and then show how their cessation would affect our existence. For our purposes, we may divide these organisms, arbitrarily, into five large classes.

The first of these to be considered are the pathogenic bacteria. It is this class that has brought the entire group into ill-repute. It is because of these organisms that the man of the streets shudders whenever he hears the word "bacteria." That this class is worthy of our wholesome respect and fear, is not to be denied, for they are the cause of all of our infectious diseases and most of our dreaded maladies. Among these are typhoid, diphtheria, anthrax, glanders, leprosy, smallpox, tuberculosis, yellow fever, malaria, pneumonia, influenza, erysipelas, infantile paralysis, all forms of septicemia and pyemia, etc. These diseases take a tremendous toll of human lives every year, and if their casual agents could be destroyed, the average life-time of a man would, no doubt, be increased considerably. In fact, with no infectious disease to help him out, he might find it more and more necessary to linger in this "vale of tears" until old age beckoned, unless, perchance, an organic weakness or accident came to his rescue. But, of the many thousands of species of microbes found, only a relatively few species act as casual agents in the pathogenic processes of man and animals. The others serve a much higher and more important purpose in the scheme of life. Removing man from the land of the living could be taken care of by almost any bolshevik.

The second class of bacteria which we shall consider in this connection is that class which is taking part in our industries. Man has employed them to do work that he himself can not do. As examples of these, we might mention the tanning and "retting" industries. In the transformation of the "green" hides to presentable leather there is a process that can be accomplished by microbes only. The same thing is true in the processes whereby flax is changed into linen. If these little laborers should cease to exist, man would have to find substitutes for leather and linen, which would be no mean task.

The mighty army of fermentation of them, all our plants would wilt and bacteria constitutes the third class. They are busily engaged in the task of preparing some of our most delicious use the material found in the soil, un-

In the minds of some people, the work which these fermentation microbes do in the preparation of our beverages is of still greater importance. It is true that they are directly responsible for all of our alcoholic and intoxicating drinks—cider, wine, beer, whiskey, brandy, etc. All of them owe their peculiar qualities to the action of microorganisms on the sugars of fruits and grains. The removal of these organisms would solve the "liquor problem" absolutely. Away would go all of them, and with them would also go vinegar, commercial alcohol, and acetic acid.

The fourth class is made up of the putrefactive bacteria. These little "fellows" act as the scavengers for the entire universe. They attack and destroy, and restore to its original elements, all the waste matter which is found on the earth. They prevent the accumulation of undesirable waste plant and animal matter and the releasing of reprehensible odors and gases. In our large filtration plants, where sewage is disposed of, the greatest care is exercised in making conditions as favorable as possible for the growth of the bacteria.

If all these putrefactive microbes should cease to exist there would be such an accumulation of undesirable matter that life would soon become unpleasant and finally impossible. And moreover, the elements that are used to make up this matter are limited in quantity, and there would soon be a shortage of material with which to carry on the constructive processes of life, if these elements were not restored to the cycle.

Now we come to the largest and most important class of bacteria, according to our arbitrary classification—the soil bacteria. Several of the species of putrefactive bacteria might be included in this division. The members of this division are the K. P.'s of the universe. The soil is their kitchen and storehouse, and they labor incessantly in the gathering and preparation of food for the plants. Some are engaged in the mining of minerals, such as potash, phosphorus, sulphur, iron, etc., and in the dissolving of them in order that the plant may be able to take them up. Others are busily at work in the task of reducing plant and animal tissue to such simple elements that the plant can use them to manufacture new plant tissue. They break the cellulose substances up into carbon dioxide, hydrogen, and methane gases. They seize the proteid combinations and change them, through intricate processes, to simple nitrate elements. Still others reach out into the air, capture the free nitrogen, bring it home, and store it up for the plant. Without the efforts of these soil organisms, and there are myriads of them, all our plants would die at once—death due to starvation. It is just as impossible for the plant to use the material found in the soil, un-

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til it has been prepared by the bacteria, as it is for us to live on wood. The plants are directly dependent on the microbes, and we are directly and indirectly dependent on the plants for our food. Destroying the bacteria, we would destroy the plant world at the same time. Where would that leave us? We would soon cease to exist—nor would we linger till old age called us. Such a condition would, indeed, be intolerable.

To sum up the entire matter, let us see what would happen if the wish of the majority of people were realized and all bacteria would disappear from the universe. Simultaneously with this disappearance, there would disappear all the infectious diseases which serve as excellent excuses for man's dying young. Several of our leading industries would likewise disappear. Substitutes for linen and leather would have to be devised, unless our habits of clothing underwent a very radical change. Bread and butter, various kinds of cheese, pickles, and saurkraut would no longer grace our tables. They would exist only as fond memories of the past. The earth would become a vast dumping-ground, heaped high with waste material. But, worse than all this, life would be utterly impossible because the elements that are necessary for constructive activities would soon be exhausted, and, moreover, there would be no agencies in existence that could prepare these elements in order that they could be used. Is it not fortunate that, in this case, the majority does not rule, but that it is left in the hands of the One who devised and created this universe?

What is life without bacteria? Life without bacteria is an absolute impossibility. Let us, therefore, discriminate between the different classes of micro-organisms and not hold all responsible for the evil deeds of one. Let us do all in our power to help eliminate the class of pathogenic microbes and encourage the growth of the others. Occasionally, we may have to limit their activities a little, but let us give credit to those that deserve it—our benefactors.

VIEWPOINTS.

BY L. M. THORNTON.

Little Lad, Little Lad, it is hard sometimes

To get your viewpoint of wish and plan;
The things that are vital to you, so oft

Seem the merest trifles to me, a man.
And I vex you oft by my thoughtless way

My disregard of your right and play.

Little Lad, Little Lad, I have but one hope,

Though I have older and sterner grown;
I can still slip back to my boyhood days

And see in my hopes and dreams your own.
And thus through my own lost youth can touch

Your present, loving you boy, so much.

Little Lad, Little Lad, it is hard sometimes

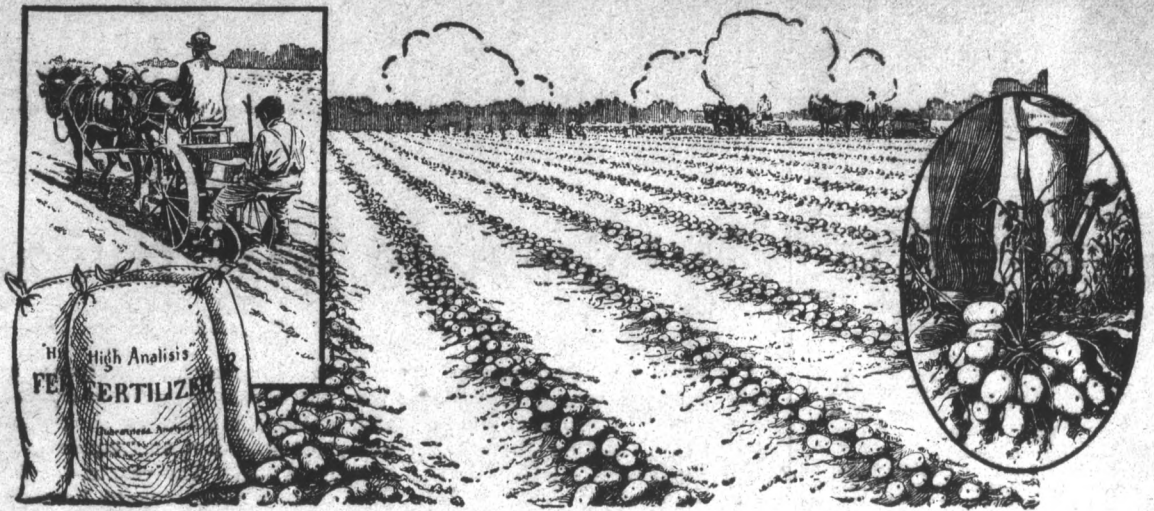
To see as you see the games you play,

But take my hand, for I want to go

With you, my son, on a common way,
Perhaps I may bring you little joy,
But help me to be again a boy.

A TEA COLLEGE.

A BUSINESS college, a college of law or medicine, even a college of agriculture, yes!—but did you ever hear of a tea college? They are going to have one in China. This is because Ceylon and India have taken away nearly all China's foreign commerce in tea, and the intelligent men of this wise country have decided to form a college to study how to get this commerce back again, and also how to produce a better product.



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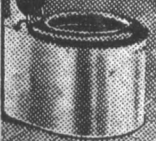
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Woman's Interests

What Ails My Bread?

By Alta Lawson Littell

WAS your bread sour? Was it the Pharaohs. Yet today bread-making is still a "catch-as-catch-can," with heavy? Was it of a coarse texture? Were the loaves higher on one side than on the other, cracked, covered with blisters, or run over on both sides?

If your bread had any of these faults do you know what caused them? If you don't know, this article may help you to see what was wrong and put you on the road to good bread-making.

The art of bread-making is one of the oldest of household tasks. The Chinese ate leavened bread long before

the Pharaohs. Yet today bread-making is still a "catch-as-catch-can," with a large number of cooks, and a poor loaf is almost as frequent a sight as a good loaf. The reason for this is that so few cooks regard bread-making as a science. They do not know that a good loaf depends upon certain set rules connected with chemical changes, and that if you learn a few simple rules and follow them faithfully each time you can't fail to have good bread.

Then again, a great many people do not know what good bread means. If

The condition of the yeast, whether it is active or lifeless, and the way it is treated during the bread-making, are the important things.

While sugar, salt and fat are not absolutely essential, they are added to the loaf as they all give certain characteristics which most of us like in bread. Sugar is a food for the yeast, and hastens its development, so it is added for that reason as well as to improve the flavor. Too much has a tendency to toughen both crumb and crust, however, as well as to make the crust darker. One level tablespoon to a loaf is sufficient, some authorities say two teaspoons is enough.

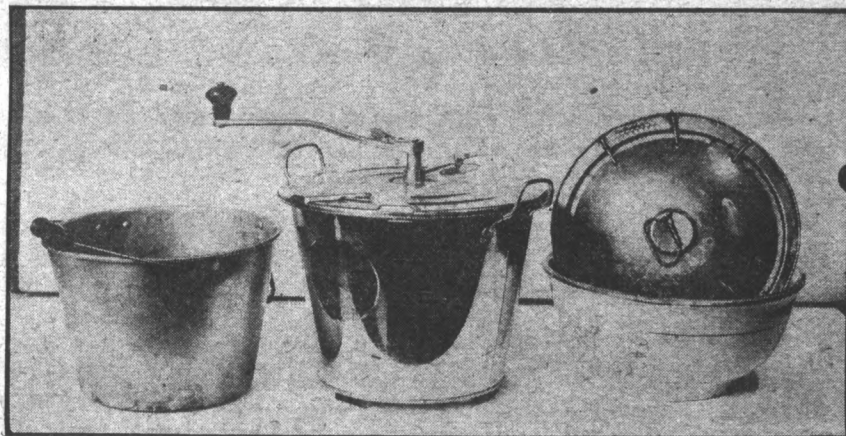
Salt retards the action of the yeast, and while it is desired for flavor, must not be used too lavishly. It also has a tendency to make the crust a lighter color, and detracts some of the tenderness, flavor and texture of the crumb if too much is used. One teaspoon to the loaf is sufficient.

Fat is omitted by many cooks, but most people prefer the use of some. If just enough is used it makes a more tender crumb, but too much gives a loaf that is heavy. One level tablespoon to the loaf is a good proportion; some use only one or two teaspoons. Since the war we have learned that this need not be lard nor butter, but that any of the vegetable or nut oil substitutes give good results.

The liquid may be either milk or water, or half and half. If the bread is to stand over night, water is better than milk. In any case, where milk is used it should be scalded and allowed to cool before using. Bread made entirely with milk is more nutritious than that made entirely with water, but is claimed by some to dry out more quickly. A good French bread is made with water, without shortening. This has a tough crust and a nutty flavor. Bread made with water has a good flavor and texture, but is lighter in color than milk bread. Half and half is a good combination.

While any of the cereals may be used in bread-making, wheat is the best according to standard notions, as it contains gluten in the right proportion and of the right quality to give a light, porous, digestible and palatable loaf. Best results are obtained if we use bread flour—made from hard spring wheat. Pastry flour may be occasionally used if one desires, as it gives a sweeter loaf.

A few simple tests help to determine whether we have bread flour or pastry



If You Haven't a Breadmixer Use an Earthenware Bowl or a Pail.

the days of Moses, and the Israelites were probably thinking of it when they munched manna in the wilderness and "sighed for the flesh pots of Egypt," for leavened bread had been included in their dietary in the land of

they were asked to score bread at a fair they would be at a total loss as to what points to look for, while even among those who claim to know, there is some diversity of opinion as to what constitutes a good bread. Some think the crumb should be moist and crust tender, while others say no bread is good unless the crust is hard and the crumb dry. However, all agree that bread should be light and porous, the grain fine and even, the crust of an even thickness over the entire loaf, the crumb of a pale, creamy tint, without streaks, the loaf, with a smooth, unbroken crust, no cracks nor bulges, and elastic to the touch so that if it is pressed between the hands it will spring back again into shape, and that the crust should be a golden brown over the entire loaf. Several specifications, but none of them too hard to secure if one is painstaking and has good ingredients.

Only four things are necessary to make a good loaf, absolute cleanliness of person, utensils and ingredients, we use bread flour—made from hard good "live years," a good bread flour, and liquid. Salt, fat and sugar, while they are usually added, could all be dispensed with, and still a good loaf secured.



Flour Sieve, Measuring Cup and Scoop Are Inexpensive and Are Useful in Bread Making.

Yeast, as everybody knows, is a plant which grows under proper conditions of food and warmth. When squeezed in the hand it keeps its shape, it does not pass so readily under which it comes is not so important, it may be compressed yeast, dry yeast cakes, or home-made "starter." Bread flour, on the other hand, is drier

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to the touch, does not have the same tendency to retain its shape when squeezed in the hand, and passes readily through a sieve. It takes up a great deal of liquid when making a dough as compared to pastry flour.

Whether you make a sponge and let it stand over night, or start your bread in the morning and mix directly into a hard loaf depends upon the sort of yeast used. The first method, called the "Long" or "Sponge and dough" process, is followed when you use dry yeast cakes, or "starter" which is slow. For the "Short" or "Straight dough" process, you need compressed yeast or very active, fresh starter. In compressed yeast the plants are in a living, growing stage, while in dry yeast the plants are living but not growing. That is why we must use the long process to give the plants time to start growth. In the short process—with compressed or active yeast—all the ingredients are mixed together at once into a stiff dough which is allowed to stand over night, and the bread is finished next day.

Both ways of bread-making are claimed by their followers to be the best. Those who use the long method claim that bread made in this way is lighter to handle, more crumbly, more porous and better flavored—that the long fermentation produces a distinctive taste and odor not obtained by the quicker method. On the other hand, those who use the short, straight-dough method of bread-making, claim that the long fermentation takes away the sweet, nutty flavor of the wheat, and weakens the gluten, and that the labor of bread-making is lessened by the short process.

The dish in which the bread is mixed should be reserved for that use only if possible. A round-bottomed earthenware bowl is thought best as it is easy to clean, has no seams to hold the dough, and retains heat better than other wares. However, if you use a bread mixer earthen ware is out of the question. An aluminum kettle or pail shaped like a bread-mixer is satisfactory, if the bread is kept in a warm place, but aluminum does not long retain heat, and the bread should not be set anywhere where the pail can be chilled.

Whatever dish is used it should have a close-fitting tin cover with a few holes at the side. If covered closely in this way a crust will not form over the top while the bread is rising. Lacking the closely-fitting cover, the bread should be brushed with melted fat when it is set to rise, to prevent the formation of a crust. A long-handled spoon, a good strong, broad-bladed knife, measuring cup, flour-sifter, pan for sifted flour, and seamless mixing board are greatly to be desired, though without a doubt many good bread-makers get along without some of these things. In stirring, use the spoon at first, but as more flour is added and the dough becomes stiffer, better results may be obtained by mixing with a knife.

For a pound loaf of bread the following proportions are used:

One cup liquid, three to four cups flour, one level teaspoon fat, one tablespoon sugar, one teaspoon salt, one-fourth cake compressed yeast, or one-fourth cake dry yeast, or one-fourth cup liquid yeast.

Scald the liquid, add salt, sugar and fat, and set to cool while the yeast cake dissolves in one-fourth cup of lukewarm water. When the liquid has cooled to about ninety-eight degrees, or when a drop on the wrist seems neither hot nor cold, add the yeast. If the short process is to be used, sift in the flour a little at a time, stirring thoroughly as it is added, until it is stiff enough to turn out on the mixing board. It should then be kneaded until the dough is smooth and elastic and can be handled without sticking either to the board or hands. When suffi-

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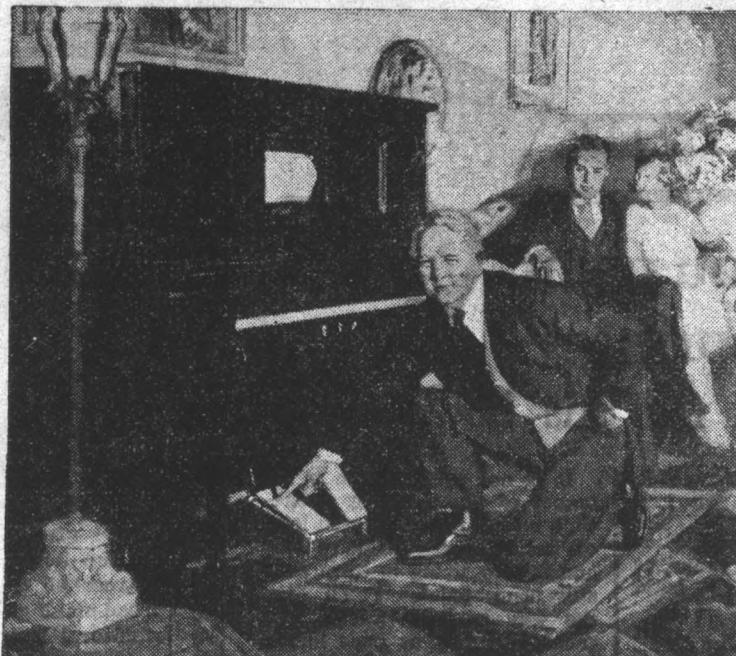
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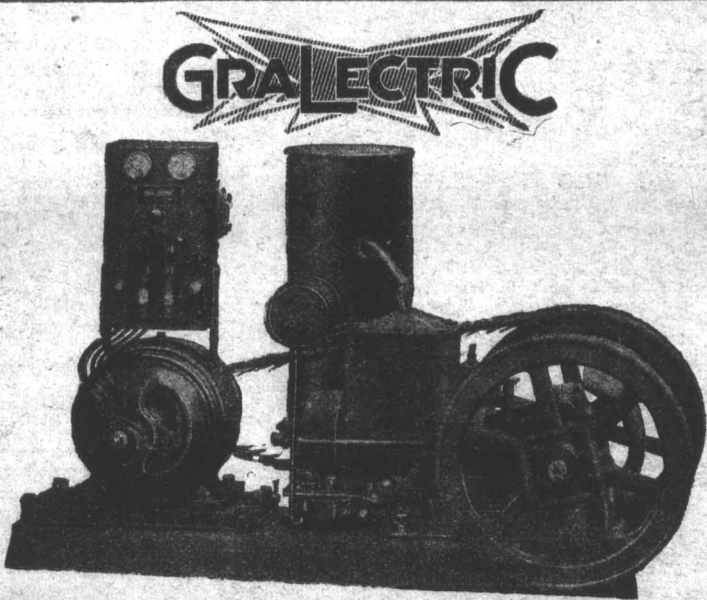
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ciently kneaded, bubbles will appear beneath the surface.

Bread insufficiently kneaded is never good. Thorough kneading is necessary to scatter the yeast plants through the dough and distribute the gas bubbles which the yeast plants form. Big bubbles of air are also broken up in this way, and the bread will not have large holes. If kneaded just the right length of time, the bread is more elastic, but too long kneading destroys this elasticity. Just enough, or until bubbles appear beneath the surface, is the thing to be sought. Thorough kneading depends more upon the evenness and rapidity of the work than upon the length of time.

The bowl in which the bread is set to rise should be greased before the loaf is placed in it. Cover with a tin cover and set where it will remain at an even temperature in a warm room. What this temperature should be is an open question. Farmers' Bulletin No. 995 says for the long process sixty to seventy-five degrees, and for the short process eighty to eighty-eight degrees. Mrs. Hill, of the Boston Cooking School, gives fifty-five to sixty degrees for the long process, with sixty-eight degrees as the ideal temperature for the bread-making. The North Dakota Agricultural Extension Department gives

an oven thermometer on your stove, enter the bread when the oven is at about four hundred degrees F., or one hundred and eighty C. If you have no thermometer there are a few simple tests which will tell you when the oven is right. Place a piece of white paper in the oven and leave for five minutes. If it is a golden brown the oven is right. If it is not yet turned, the oven is not hot enough, while if it is a dark brown the oven is too hot. Or spread a layer of flour about one-fourth of an inch thick on a jelly glass cover and put it in the oven for five minutes. A golden brown color to the flour tells that the oven is just right. The browned flour may be used to thicken gravy.

After the first ten minutes increase the heat for fifteen minutes if possible, then gradually cool for the remainder of the baking.

When the bread is removed do not swathe in cloths and leave it to steam. Stand the loaves on the side or tip up on the tins and leave to cool thoroughly. If the crust is buttered all over immediately on taking from the oven it will be more tender. It should be kept in a tin bread box after baking, or in a large earthenware crock. The bread-making. The North Dakota Agricultural Extension Department gives scalded and aired at least once a week

Seven Things to Remember in Bread Making

Too much fat gives a heavy loaf.

Too much sugar darkens the crust.

Too much salt toughens crumb, detracts from flavor and tenderness, and retards yeast action.

Too long rising—fermentation—sours the bread.

Too short fermentation—rising—cracks crust when put in too hot an oven.

Too hot an oven at start gives thick, dark crust.

Too much flour gives a harsh, dry bread.

the wide choice of seventy-five to ninety degrees, and the Michigan Food and Drug Department in its special bulletin claims eighty-six degrees as ideal.

As a matter of fact, a medium temperature neither too hot nor too cold will give good bread. A room which is comfortable to sit in is about right. Keeping the bread too warm makes bread dark in color, coarse grained and inclined to be sour, while keeping it too cold, or letting it get chilled, gives a small rubbery loaf with too much crust. It should not be wrapped in blankets unless the room is absolutely cold, and even then it is much better from the standpoint of cleanliness to set the bowl in a pan of good warm water.

After the bread has doubled in bulk, and is ready to form into loaves, knead just enough to break up the air bubbles. Individual pans for each loaf give better results than one large pan which holds two or three loaves, as in the large pans the heat can not readily reach the center and the inside loaves are apt to be underdone. In case the bread is left in long enough to bake the center properly, the outside crusts usually scorch. A pan of water placed in the oven while baking the bread helps to keep the crust tender and prevents scorching.

If you are so fortunate as to have

and kept free from crusts, crumbs and old cloths.

In scoring bread the following points are considered:

General appearance—shape, smoothness of crust, uniformity and depth of color.

Size and lightness of loaf.

Crust—crisp and tender.

Crumb—color, fineness and uniformity of grain, and elasticity.

Flavor and odor.

There are many causes for poor bread. The North Dakota Agricultural College Extension Department lists them as follows:

Sour Bread.—Poor yeast, dirty utensils, impure liquids, too long rising, too high temperature during rising, too slow baking, incomplete baking, wrapping while warm.

Heavy Bread.—Poor flour, too much liquid, insufficient rising.

Coarse Texture.—Too long rising, too soft dough, too cool an oven when dough has already risen sufficiently, too hot an oven at first.

Little Burned Blisters.—Too hot an oven at first.

Cracked Loaf with One Side Higher.—Too stiff dough, uneven heat in the oven.

Loaf Run Over on Sides.—Too long rising, too soft dough, too cool an oven at first.

Using Honey In Cakes

By Mrs. H. F. Grinstead

THE flavor of honey combines especially well with spices, and for that reason it may be used with very satisfactory results in cake making. The use of honey also makes the cake keep fresh and soft for a longer period. Rarely is honey more economical than sugar, nor is it often much more expensive. It is the excellence of the flavor imparted that commends it for use in cakes.

Hard Honey Cake.

Take three-fourths of a cup of honey, half a cup of sugar, two and a half cups of flour, one egg, one-fourth teaspoonful of ginger, one teaspoonful of cinnamon, half teaspoonful cloves, pinch of white pepper, pinch of salt, a half teaspoonful of soda, tablespoonful of water, and two ounces of blanched almonds chopped fine.

Sift together the flour and spices.

dissolve the soda in the water, beat the egg and combine all the ingredients. Beat or knead the mixture thoroughly, roll out the dough to a thickness of a little less than an inch, and bake in a hot oven. When the cake is done, glaze it with a syrup of sugar and water, and allow it to dry in a warm place. This cake will become very hard on cooling and will not be soft enough to eat for several weeks, when it will absorb sufficient moisture to soften it. It will keep in good condition for an indefinite time. It is a good practice to bake a small sample when the dough is first made. If it does not rise sufficiently, add more honey and soda; if it falls, work in more flour.

Butter Honey Cake.

A cup and a half of honey, half a cup of butter, three egg yolks, five cups of flour, two teaspoons of ground cinnamon, half a teaspoon of salt, one and a half teaspoons of soda, two tablespoonfuls of water and the whites of three eggs. Rub together the honey and butter; add the unbeaten yolks and beat thoroughly. Add the flour sifted with cinnamon and salt and the soda dissolved in the water. Bake in shallow pans and cover with a frosting made from the rind of one orange, grated, a teaspoonful of lemon juice, tablespoonful of orange juice, one egg yolk, and confectioners' sugar. Mix all the ingredients but the sugar and let stand for an hour. Then add enough sugar to make the frosting spread easily.

Instead of using cinnamon alone, the addition of a little ground ginger, cloves, nutmeg and white pepper in much smaller quantities will be found to combine well with the honey.

Honey Pound Cake.

A good pound cake can be made by using equal weights of honey, eggs, sugar, flour and butter. A little soda should be added on account of using honey instead of sugar, and flavoring used that will give the desired taste. The recipe may be varied by using some sugar instead of all honey. The mixture should be beaten for ten minutes, and cooked in a deep pan in a slow oven for an hour.

Honey Fruit Cake.

Take four cups of flour, three teaspoonfuls of soda, two cups of honey, one cup of butter, six eggs, two tablespoonfuls cinnamon, two teaspoonfuls of ginger, three teaspoonfuls cardamon seed if it can be had, half teaspoon of cloves, three pounds seeded raisins, quarter-pound of citron, one pound each of cranberries, canned pineapple, dried apricots or peaches and dried apples. To prepare the fruit cook each in honey till it is soft, then dry in a slow oven. A little water added to the honey in which the cranberries are cooked will be desirable. The honey used with the fruits should be included in the total amount called for in the recipe.

Cut the candied fruit into small pieces, place it in a large dish and sift over it half of the flour, mixing thoroughly. Mix the soda with the remainder of the flour. Bring the honey and butter to the boiling point, and while hot add the spices. When this is cool add the beaten yolks of the eggs, then the flour and beaten whites and finally the fruit. The cake should be divided into three parts, put into buttered dishes or pans, covered with buttered paper and steamed for five

hours. Remove the paper and bake it in a slow oven for an hour.

Honey Drop Cakes.

Take three-fourths cup of honey, one-fourth cup of butter, half a teaspoon of cinnamon, a fourth of a teaspoonful of cloves, one egg, two cups of flour, half teaspoon soda, two chopspoons water, one cup of raisins chopped fine. Heat the honey and butter till the butter melts, and while it is warm put in the spices. When it is cool, add part of the flour, the beaten egg, the soda dissolved in water and the raisins. Add more flour to make a dough that will hold together. Drop by spoonfuls in a buttered pan and bake in a moderate oven.

Honey Cookies.

Use a fourth of a cup of water two cups of sugar, half a cup of lard, one cup of honey, two egg yolks, teaspoonful of soda, six cups of flour, a teaspoonful of cinnamon and half a teaspoonful of ground ginger. Heat the water, sugar, lard and honey until all is melted. When cool add the yolks of the eggs and flour sifted with the spices and soda. Roll out on a floured board and cut into desired shapes. Bake in a moderate oven.

MICHIGAN FARMER PATTERNS.



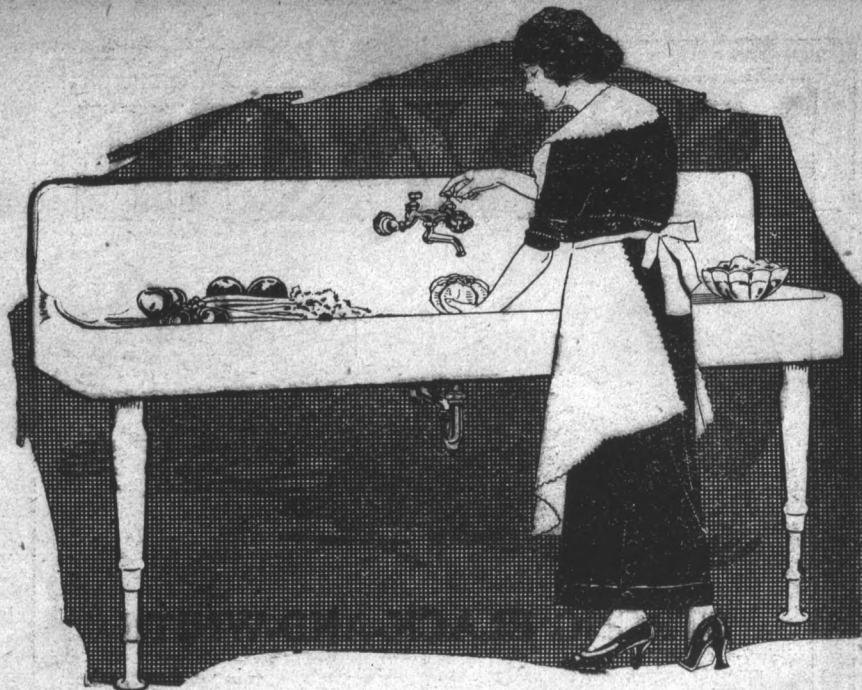
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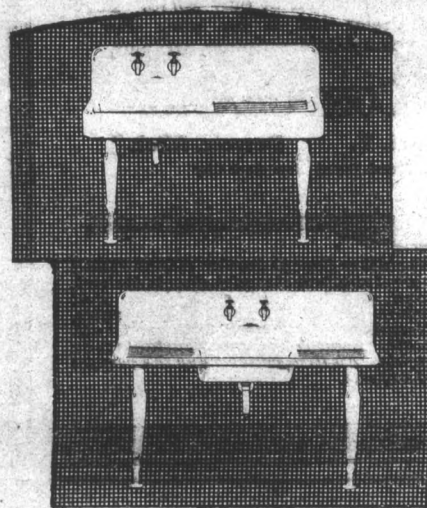


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Even though it's dark, you can see a black skunk a long way on white snow. See him well enough to hit him with the first shot from your deadly accurate little .22 Savage Junior. And if there's a moon, it's as easy as in daylight.

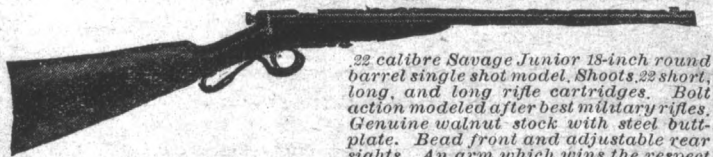
The next evening it thaws, take your little Savage Junior rifle and go for a walk. Wear your oldest clothes, and take your skinning-knife. There's money in it, and the chickens won't suffer so next year.

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Our Boys' and Girls' Page

Fun and Profit in Pigeons

By Briant Sando

PIGEONS are easily raised, require small space and are not extravagant eaters. No more interesting feathered pets can be found, and they have the additional advantage of being able to pay their way if desired. The young ones as "squabs" make excellent eating—if one wants to kill them. If not, choice birds may readily be sold as breeding stock at profitable prices.

Many young folks will vouch for the fact that more solid enjoyment can be derived from a few pigeon pets than from a houseful of inanimate toys. Many brain-weary men and women also find needed relaxation in the company of their cooing and strutting friends. Most varieties of pigeons respond readily to good treatment, and many of them become very tame. Their care and breeding also helps cultivate the faculty of close observation and careful attention to details, and is thus splendid for anyone, young or old.

The loft may be a soap-box in the corner of some outbuilding and shelter but a single pair of pigeons, or it may be more pretentious and house a larger flock or several different varieties. A single mated pair will give a start, and a small box in some out-of-the-way corner with two nests will serve them for a home. Many a city boy, with little or no ground space, has his pigeon coop on the roof of the house. In most cities, pigeons may be found building their nests and raising their young in the steeples of churches, towers of public buildings, and other such retreats. Belonging to no man, they seek their food in the streets, about warehouses, or wherever anything can be found.

Pigeons form a family distinct from chickens, ducks and geese. The anatomical structure is entirely different. The female lays but two eggs before she wants to start brooding. The male and female take turns in sitting on the nest, though true to tradition the male does only about one-fourth of the day's work. One of the most singular things is the manner in which the young ones are fed. The latter, unlike chickens, are helpless when hatched and remain so until near maturity. They are fed in the nest by the parent birds, with what has sometimes been called "pigeon's milk," a curdy secretion produced in the crops of the parent birds only at hatching time and which they inject into the beaks of the young.

After about three days, the pigeon

gradually mixes the "milk" with ordinary food or grain that has been moistened in her own crop. Then the curdy secretion decreases for a week or ten days, when it ceases entirely. The young reach full size in four to six weeks, and the stock may be increased very rapidly, as the female usually lays two more eggs before the young ones are out of the nest. Some varieties hatch and raise as many as six or eight pairs each year.

Selecting a Good Variety.

Almost all varieties of pigeons make good pets if properly handled. Probably the best guide in selecting the variety to be kept is one's personal preference. It is often advisable to go to poultry and pigeon shows, or to the yards of some large fancier, and look them all over. Many people breed and handle several varieties before making a final choice.

The Homer is probably the best known variety of pigeon. Its distinguishing characteristic is its remarkable power of flight and its attachment to its home. This is the variety most largely used for squab breeding and is best adapted to those who wish to pay more or less attention to practical purposes.

A professional man of our acquaintance has a fine flock of White Fantails and Pouters. He keeps them in one flock, in a corner of his garage. The two breeds do not mix if only mated pairs are put in. He says he likes these varieties best because, in addition to their other desirable qualities, they stay near home and are thus safer from marauders. He has no wire-covered flight, but gives them their liberty for a while each evening in nice weather. The Fantails are bred for a great spread of tail, which is carried upright like a fan. There are several different colors, but the white is most popular.

The Pouter has long, feathered legs, a long but slender body, an erect carriage, and has the power of filling the crop with air to an enormous extent, forming an almost perfect globe. This gives it a very odd appearance, which appeals to many people. There are several different colors.

The Tumbler is a small bird, so named because of its singular method of turning somersaults, or tumbling, in its flight. In the same class are the Parlor Tumblers, which fly very little.

(Continued on page 432).

30,000 miles and still going

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BREEDERS OF REGISTERED GUERNSEY CATTLE
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December 9, 1919.

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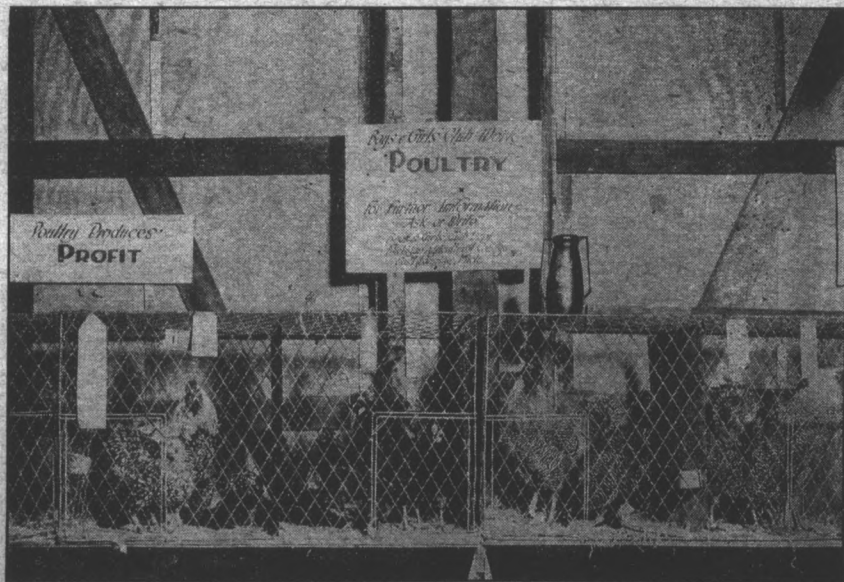
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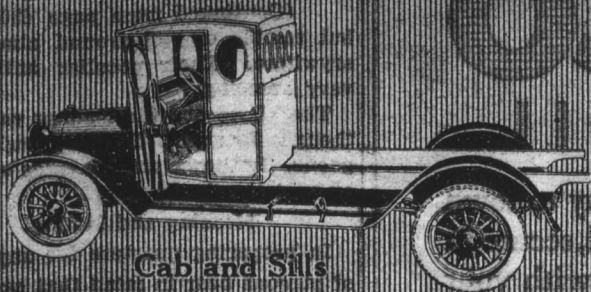
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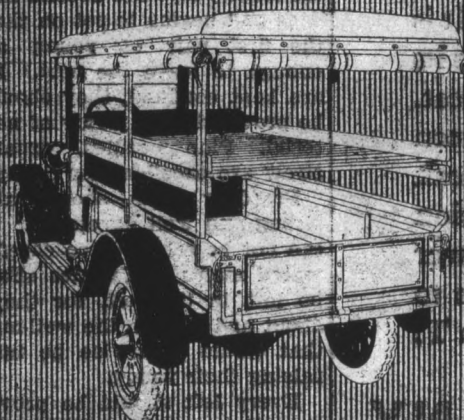


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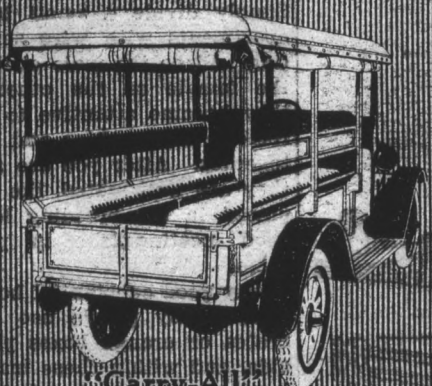
Boys' and Girls' Club Members Put on a Poultry Show at East Lansing that Vied with the Regular Show for General Interest.



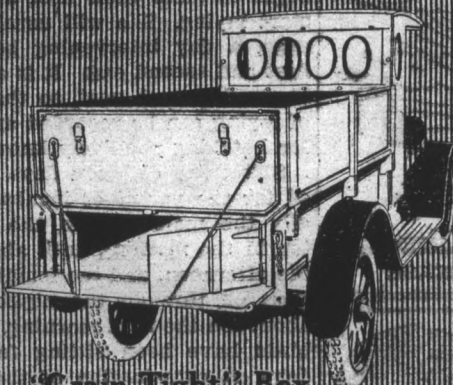
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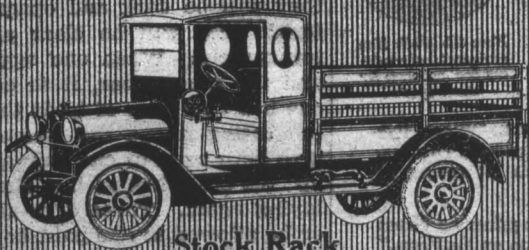
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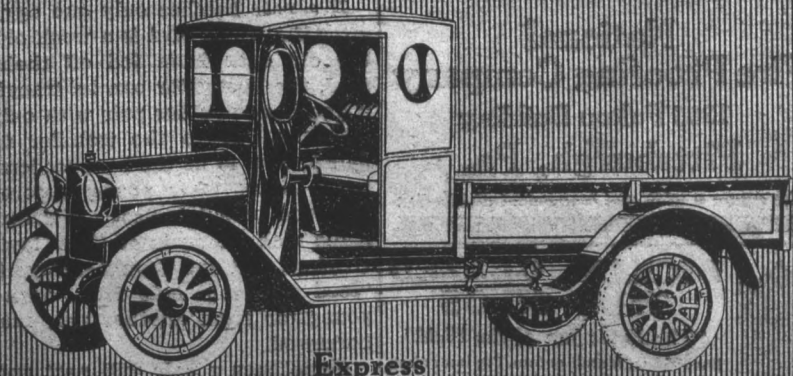
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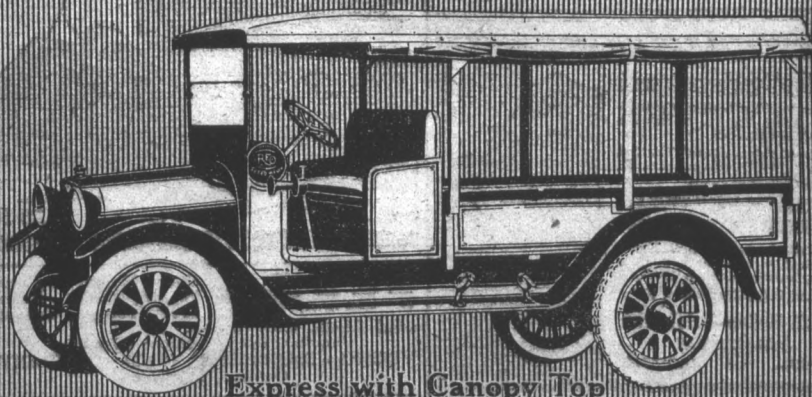
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REO

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TEXACO

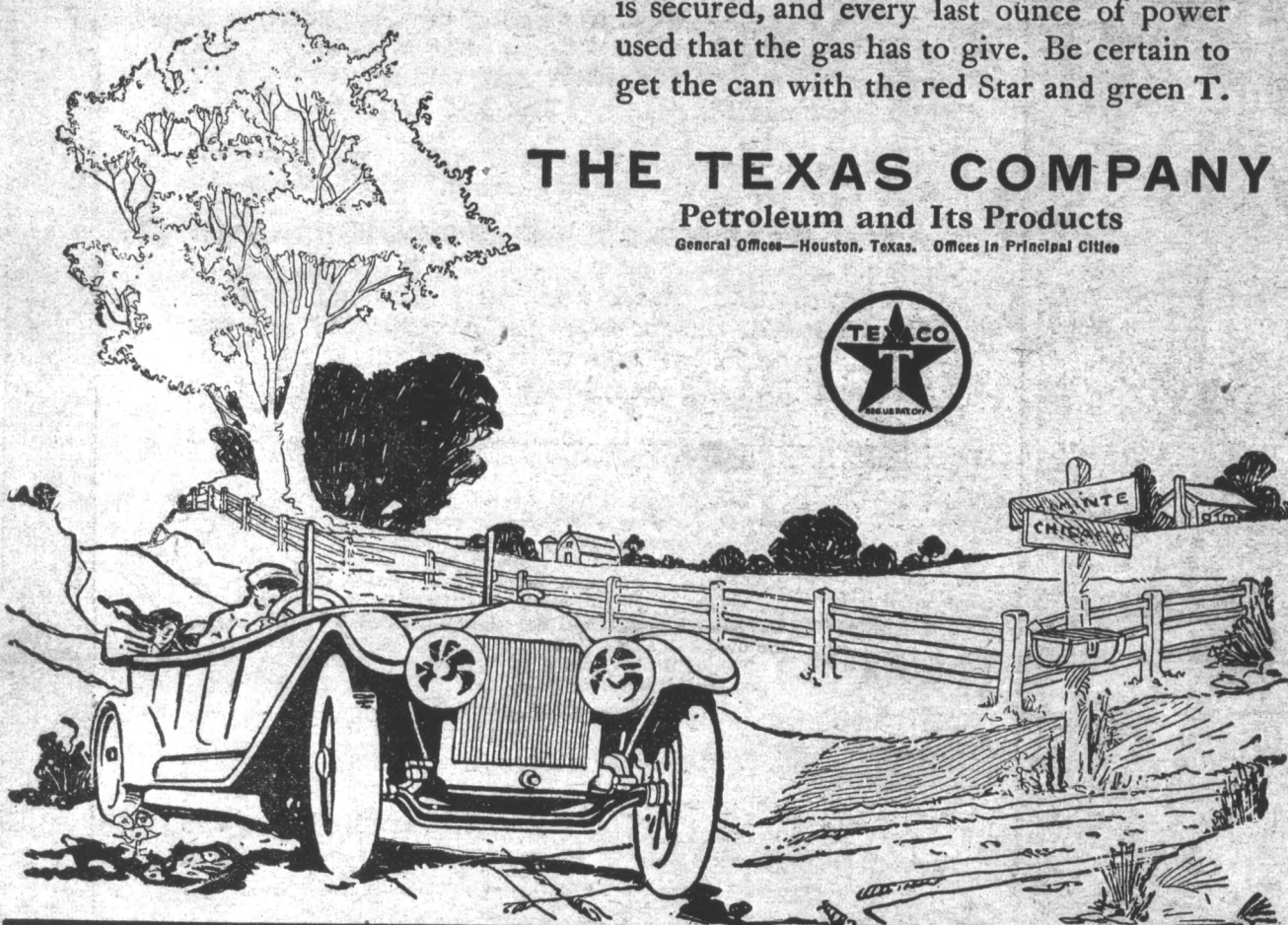
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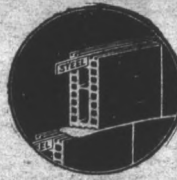


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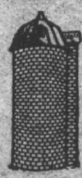
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Trained American Fox Hounds Rabbit and Skunk dogs all ages. Send stamp. W. E. LECKY, Holmesville, Ohio

FUN AND PROFIT IN PIGEONS.

(Continued from page 430).

but tumble or roll around almost everywhere. Their peculiar antics are very amusing.

The above are the leading varieties, though Jacobins, Turbits, Owls, Dragons. Swallows and Magpies are other varieties to be noted.

Housing and Mating.

In preparing quarters for any breed of pigeons bear in mind that each pair requires two nests, for the reason that the female lays her second hatching of eggs and begins to set on them before the first pair of young are large enough to leave the nest. If pigeons are kept confined, they should always be provided with plenty of nesting material. Pine needles, excelsior and straw are excellent for this purpose.

Breeding stock should always be strong and well developed. The birds can not be selected too carefully. Unmated males or females should never be left in the loft, for they will fly about and disturb the well-mated pairs that would otherwise be intent upon raising their young.

Every loft should be provided with a mating coop in which birds to be mated can be placed, separate from the main flock, for three or four days. Simply divide a small box into two apartments with wire screen or netting. Place the male on one side and the female on the other, and when they become attentive to one another remove the partition and let them run together. After you are satisfied that they are well mated, the pair may be placed in the breeding loft, where a good nesting-place is provided for them.

Any good substantial box will do for this. Many people use empty egg crates or orange boxes placed on the side, and within these may be located small wooden or clay dishes for nests. If properly mated, the birds will soon begin to build their nest and the hen start laying. She will usually lay two eggs, a day intervening between the first and second egg. It is a good plan to number each nest, so that the date of laying can be recorded and the time for hatching positively known.

Sixteen to eighteen days are required for the period of incubation. Usually the male sits on the eggs from ten in the morning until about four in the afternoon, and the female sits from then on through the night and until about ten the next morning. After the birds have been sitting four or five days an examination of the eggs will show whether or not they are fertile. Simply hold them in the hand between the eye and a strong light. If fertile they will be dark and opaque. If infertile they will be clear and nearly transparent. When one egg is fertile and the other clear, it is economy if one has two pairs of birds that started incubating about the same time to give both eggs to one pair and "break up" the other hen so that she can start laying again. Three eggs should never be allowed to one pair, however, for the two youngsters are all that a pair can properly nourish.

If a pair hatches only one egg, then after the young bird is a week old, and the old ones have fed off their soft food, the youngster can be transferred if you have another pair with only one offspring. Make the transfer to the pair known to be the best feeders. Pigeons losing their young before this soft-food period is past are frequently made sick, or at least their laying is checked, and one should always try to "feed off" this soft food, even if a youngster from another pair must be borrowed.

Sometimes a pair will nest and perform all the duties of a mated pair, yet the hen fails to lay. These birds either are not well mated, or the hen is barren. Such a pair, if given two eggs, will likely sit on them and raise the

When writing to advertisers please mention the Michigan Farmer.

young, and the natural functions of the hen may be aroused so that she starts laying afterward. If this does not happen, the hen is barren and should be cast aside and the male provided with a new mater, for he will remain "true to his first love" so long as she is around.

Occasionally, when there are two little squabs in a nest, one will get most of the food and be plump and thrifty, while the other one pines away. The parents sometimes play favorites in this unexplainable way, and the weaker bird in such cases should be transferred to a pair with a single squab about the same size, or fed by hand. In the latter event, soak all grain in water or milk before feeding, or administer small pellets of moist bread.

Cleanliness and quiet are very essential to success in the pigeon business. Not only should the attendant be calm and friendly, but noisy visitors, dogs and cats should be tabooed. If certain pairs of birds are quarrelsome they should be removed for the sake of peace among the others. The coops and nests should be kept thoroughly clean and sanitary and free from vermin. The same practices are good in these particulars that one would follow with chickens.

When a pair has done with one nest, clean it out thoroughly, and put in fresh sawdust and excelsior. Watch closely for lice, especially during hot weather, and if you see any indications around the coops, give them a good painting or spraying with coal oil. By having a squirt-can you can easily inject the oil into any crack or partition; it is sure death to vermin, while the odor does not seem to have any bad effect on the pigeons.

Birds kept continually confined need a little more careful watching than do those that can have daily exercise, to see that they do not suffer from close confinement. If the loft is roomy they can get considerable exercise right in the loft, but if quarters are contracted, the chances for disease and vermin are greater than if at liberty. Above all things, do not overcrowd.

Feeding the Birds.

Pigeons that have their liberty are privileged to seek and select such food as they prefer. Frequently they fly miles away to feeding places that furnish what suits their taste. But pigeons in confinement have no choice and must be provided with food that is palatable and acceptable. It is advisable to supply a good variety of foods so that all the birds can find material to suit their tastes and needs.

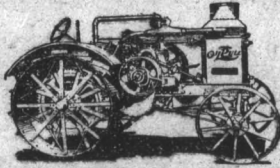
One must be somewhat governed in feeding by the time at one's disposal. If only able to visit the birds twice a day, food must be supplied to last from one feeding time to the other, but if able to visit the loft several times each day, then the feeding each time can be in limited quantities and the chance to vary the ration is much better.

The food of pigeons needs to be varied according to the season and location. In northern localities, where the nights are long and often cold the food needs to be of a kind slow of digestion and affording considerable warmth. For this purpose, good sound peas, either gray or yellow, and the little Yankee corn make the best of food. During the spring and summer months, when the weather is mild and the birds are breeding, sound wheat, buckwheat, small Canada peas, and millet are the proper foods.

Pigeons are very fond of corn, and many people feed it whole to their birds. This is a dangerous practice with small birds, however, as the large kernels are liable to lodge in their throats and choke them. The best way to feed this grain is coarsely cracked and with the meal sifted out, unless you can get the small Yankee corn which is just a little larger than a pea.

Besides corn, pigeons take kindly to wheat, buckwheat, peas, Hungarian

SERVICE



Eleven successful years of service in the field, meeting every farm condition, has tested the design of Rumely Oil Pull Tractors. "Old Number One" and many other early models, after eleven years of dependable and constant service, are still going strong. Over 15,000 later models built on the same general design, are giving the same dependable year-after-year service.



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In order to provide closer co-operation with the farmer, Advance-Rumely has established 29 branch offices and warehouses. Each has a complete stock of machines and parts, capable of rendering to its customers the all-important, close at hand, immediate service. These branches are all located at important railroad points, and are under the supervision of competent men.



Every one of the three thousand Advance-Rumely dealers is able to provide intelligent and expert service to farmers in his locality. A tractor school is held for dealers each winter at the La Porte factory, where every detail of the product is made known to the dealers by expert instructors. This provides each dealer with the ability to supply the last link in the service chain.



The Rumely Oil Pull Tractor was designed and built to burn kerosene, and each Oil Pull is guaranteed in writing to burn kerosene under all conditions and at all loads to its full rated brake horse power. It is oil cooled—the motor is low speed, heavy duty, valve-in-head—cylinders are ground to the thousandth part of an inch. The owner of an Oil Pull in 1920 is assured of the same efficient and dependable service from his tractor that the owner of an Oil Pull purchased in 1909 has received.

The Oil Pull is built in four sizes—12-20, 15-30, 20-40 and 30-60 H. P. Send for a catalog.

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La Porte, Indiana

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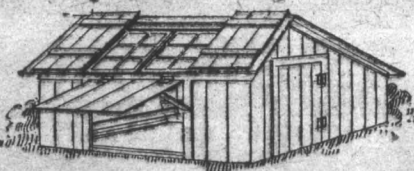
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Self Feeders



They always work and save feed, labor and worry. Will feed all kinds of feed.

Ready-Built Hog Houses



Sold to you cheaper than you could build them. Shipped knocked-down. Easily and quickly set up. Get four prices, and descriptive folder on Monarch Feeders and Hog Houses. Buy direct from the manufacturer and save in-between profits.

Manufactured by

LEGG LUMBER CO.

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Married man wanted for general farm work on farm of 120 A. Must be thoroughly competent and energetic. In reply state age, experience, size of family, wages expected etc. Address Farmer, care of Pioneer Times, Vassar, Mich.

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\$2000 Down Secures 300 Acres with Pair Horses.

2 mules, 12 cows, 10 heifers, bull, 5 steers, all high-grade Holsteins, hogs, poultry, hay, fodder, carriages, wagons, harness, implements included. \$5000 gets everything, easy terms. Biggest bargain ever offered in this rich dairy and farming section, by owner whose oil interests in the south require quick removal. Near mainline depot and market city. Dark loam soil cuts 8 tons hay to the acre, 15 cow pasture, wood, timber, large orchards; vast quantity berries for high price at local stores. New 12 room house, 2 immense basement barns, silo, corn storage barn, granary, running water house and barns. Details page 7 Strout's Spring Catalog Bargains 33 States; copy free, STROUT FARM AGENCY, 411 10 Ford Bldg., Detroit, Mich.

A BARGAIN IN FARM LANDS

400 acres of rich dark clay loam, fenced, level, and every acre a big producer, small house and barns, sixty acres wheat. This farm is in Baca County, Colorado. W. H. BROWN, 179 Calhoun Street, Bell Phone 3416 Battle Creek, Mich.

PIERCE'S POTATO FARM

For sale, 120 acres, 5 1/2 miles South on West St. road, 5 acres heavy timber, 115 acres clean level fertile soil, well fenced, good buildings in good repair; best of water, 40 acres seeding, 28 acres in winter grain, 2 1/2 miles to Portage station, choice location for home, poor health of my family, reason for selling. Would like to sell to a potato grower who could take up my potato trade in Kalamazoo. Price reasonable. Write or phone for full information. E. M. Pierce, R. 6, Kalamazoo, Mich.

154 acres one mile from post office, Charlevoix Co. Mich. splendid potato soil or good sheep and turkey ranch. Price \$20 per acre, \$2 per acre down, \$3 per acre each year until paid, or 50 disc for cash. A. M. LEIGHTON, Owner, Whitehall, Mich.

130 Acre Farm \$5000.00 a money maker if you want to buy a farm or list one. Write ROBT. STROUD, Dealer, R. 2, Lake, Mich.

FOR SALE. Good stock farm of 105 acres, 3 1/4 miles from Sturgis, Mich. Apply to J. Houston, 825 Geneva Ave. Grand Rapids, Michigan.

For Sale 40 acres truck land, 5 mi. from market Dr. J. GILLET, before you get our free list of 21 good farms. DeCOURRES, BLOOMINGDALE, MICH.

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The Michigan Farmer, one year... \$1.00
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Everybody's Poultry Journal, 1 yr .50
Gleanings in Bee Culture, 1 yr... 1.00

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Total value \$3.25
All for \$2.25.

"How I chose a power and light outfit for heavy work"

Western Electric Company,

Dear Sirs:

"When a salesman begins to tell me his article is the 'best on the market'—that's my signal to wish him a pleasant trip back to town. Looks to me as if he is more wrapped up in making a sale than in studying my needs and advising me what is best for me. That's my interest, and it ought to be his.

"Not long ago when I was in the market for a power and light outfit, I had the opportunity of seeing half a dozen plants in operation. Some of them looked pretty good to me, but as I never had any experience with an electrical system before, I was a bit puzzled.

"Then along came a salesman whose talk steadied me.

An outfit that can afford to be criticized

"You've been looking at some mighty good plants," the salesman said, "and probably wonder what I have to offer that is better. Now I'm not going to say that the Western Electric Outfit is the best. No plant is best for every purpose and every situation. But what is your purpose—light or power? If it is light, then I want to say that with the Western Electric Outfit, you get ample light, and something else in the bargain—extra engine capacity.

"He went on to tell me that the Western Electric people had gone in for power, plenty of power, believing that most farmers depend on power as a necessary aid in their work. And of course with a powerful outfit abundant light goes along without saying.

Ted Roush is a farmer known to his neighbors as a careful buyer. He looks before he buys any machinery, such as a Power and Light Outfit. So this letter that he wrote to the Western Electric Company—the actual experience of a real farmer—will be helpful to you if power is what you are looking for in your outfit.

Ted Roush

Hillsboro, Ohio

"Then he showed me how I could belt the pulley to my shafting and without any trouble run the machinery. This can be done while the batteries are being charged, or it is just as easy to switch off the generator and deliver all the engine power to the pulley, at the same time you take light from the batteries.

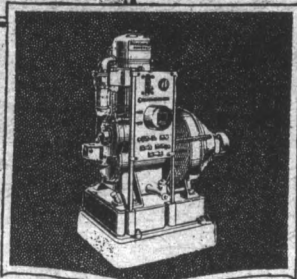
How long do the batteries last?

Here's the agent's answer to that:

"The reason why our batteries last is because they are charged without strain. The charge flows in under fairly high pressure at first, but then begins to slow down gradually, so that when the engine stops itself the current is just trickling in. It is thanks to this automatic regulation that the batteries last longer."

"I like that. But I don't want anybody to believe it because of what I have said. I think the only sensible plan is to see the outfit work, yourself. Then you can be sure."

Ted Roush



Let the Western Electric Power & Light Outfit help solve your farm labor problem.

Say "power" and you're talking the farmer's language

"Just then the Western Electric man caught sight of my grindstone, feed mixer and buzz-saw that I keep hitched up to the shafting down in the barn."

"See," he said. "Looks as if we figured right in your case too. What you want first of all is power—and I'm going to show you how the Western Electric Outfit can take care of this apparatus of yours."

No matter what plant you finally buy, you'll be interested in some facts and figures that show just how electric power and light can help you in your farm work. Our booklet MF-2 tells the story. Write a post card for booklet MF-2 to the Western Electric Company, Chicago.

Western Electric
Power & Light

Some good territory still available for live-wire representatives

Makes the Battery last longer



VETCH Separator

—FOR—

Separating Vetch from Wheat Rye or Oats

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Give Them Martin's Calf Feed

Start the calves right and keep them coming right along thriftily. No scours. No setback when feeding separated milk. Takes the place of whole milk as soon as calves learn to drink.

SAVES THE CALVES

by giving them the ideal feed. Supplies just the elements needed by the young animals. Saves valuable milk. Martin's Calf Feed carries 26% protein and 6% fat—a calf ration never excelled. For 20 years proved to be the best feed for calves, little pigs and all young stock. Big calves, too, grow bigger when Martin's Calf Feed is added to their skim milk, whey, or water.

Leading dairymen declare that the elements missing from skim milk and whey must be supplied "by the addition of some feed high in protein and fat". Martin's Calf Feed is the special feed that does this.

Butter fat is too expensive to feed to calves, but we must raise more calves and raise them right. Martin's Calf Feed has raised thousands of sturdy, hearty calves throughout the country during the past 20 years. Prove it out with your own calves.

Martin's Calf Feed comes in 25, 50 and 100 pound bags, ready to mix. We also manufacture Martin's Pig Meal, Egg Mash, Poultry Charcoal, Fly Oil, Sprayers, Stock Dip and Scurf Remedy.

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Write for booklet, "Milkless Calves". Tells how to raise calves without milk, and for less money. Also gives name of our nearest dealer who will make you a money-back offer on your first trial sack. Book free and postpaid.

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—genuine inner armor for auto tires. Double mileage; prevent punctures and blowouts. Easily applied without tools. Distributors wanted. Details free.
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grass-seed, millet, and sometimes rye and barley, but not often. Whatever grain is fed it should be thoroughly cured. In changing from one grain to another the change should be gradual until the pigeons become accustomed to its use. Besides grain, pigeons are also fond of both plant and animal food. Lettuce seed may be planted in shallow boxes and when up an inch or two placed in the lofts. There are many varieties of small seeds that pigeons are fond of and enjoy occasionally, such as hemp, canary, rape, etc. By the occasional use of such luxuries birds can be made very tame.

While there is no question that pigeons flying at large pick up animal food in the shape of small bugs and worms, it is not an absolute necessity when they are confined. Salt fish they are fond of, and many fanciers keep a piece fastened to the wall within reach of their birds; but while they may also like the meat, it is no doubt the salt in the fish they are after. Salt is something pigeons are very fond of, and every loft should have a lump of rock salt standing about.

Stale bread is an excellent, economical and favorite food with pigeons. It can be fed in various ways. It can be dried hard and pounded to pieces; it can be toasted and broken in bits, or it can be soaked and mixed with bran.

Broken bone and charcoal will, at times, seem to be relished. While oyster shells and old mortar may answer the purpose, it is also well to provide a box of small-sized gravel. As nature gave pigeons a gizzard, it is necessary for this organ to be furnished with something hard to assist in grinding the food, and nothing answers this purpose better than sharp grit or gravel.

GRAIN FOR BREEDING EWES.

What would be the best feed to get to feed my breeding ewes? I have corn silage and corn fodder, and later will have bean pods and clover hay. I can not get alfalfa hay, but would like to grain them a little before they have their lambs. Will start to lamb about the first of March. I also have a field I would like to get seeded to alfalfa. It was fall-plowed. Had oats on it last year and corn the year before. It is a pretty good sand loam, and nice and clean, but has been cropped quite heavy. I would have barnyard fertilizer that I could cover it with. Will you give me the best method and time to seed this field? Would you advise inoculation of this field?

Osceola Co.

C. D. S.

A grain ration of corn and oats, with perhaps a little oil meal, if you can get it readily, would give as good results as anything you can possibly get. I would prefer to have the oats fully one-half the ration by weight.

Seeding Alfalfa.

The very best way to be sure of a stand of alfalfa would probably be to work this field, say once a week, until June, thereby destroying all weeds so that when the alfalfa is sown, weeds will not come up to interfere with the growth of the alfalfa. I would cover the field with stable manure early and mix it with the soil by this frequent tillage.

By all means inoculate the seed if this field has not grown alfalfa before. The most convenient way to inoculate is to procure pure culture and follow directions. Of course, there are other ways of inoculating but this is the easiest way.

You can sow this field this spring to barley or oats and at the same time seed to alfalfa and be reasonably sure to get a good stand of alfalfa and have your oat or barley crop pay for the use of the land this season. By far the majority of the people who seed to alfalfa use oats or barley as a nurse crop. The consensus of opinion is that you are not quite so sure of a good stand as where you seed to alfalfa alone, but taking everything into consideration it is fully as practical to seed in this way.

C. C. L.

MUCK FARMERS GET RESULTS.

(Continued from page 406).
to keep the nitrogen from being released too rapidly. Roll, roll, as often as possible. "Do not plow too often," is another important point; keep the soil as firm as possible in the rotation. He indicated the value of the use of light dressings of manure, supplemented with acid phosphate on his type of muck and discussed briefly a test plot which was carried out in cooperation with the college, on which it was shown that a heavy application of manure and acid phosphate resulted in ten tons of beets more to the acre than the check plot where nothing was applied.

The lecture by Professor F. J. Alway, of Minnesota, on "The Development of Muck Land Farming in Europe," pointed out the general conclusions which have been reached by European experimenters and observers concerning muck and peat soils can be summed up as follows:

1. The productivity of these soils are equal to the best high land soils.
2. Annual application of potash and phosphoric acid fertilizers is found necessary.
3. Where lime is found essential by chemical analysis, lime is necessary. The ordinary tests for acidity are misleading. Ordinary applications as applied on uplands are sufficient. Too much lime depresses the yield of crops on muck.
4. The application of nitrogen fertilizers is a waste of money on mucks which contain sufficient lime.
5. Heavy rolling is essential for successful muck farming.
6. Muck soils may be over-drained.

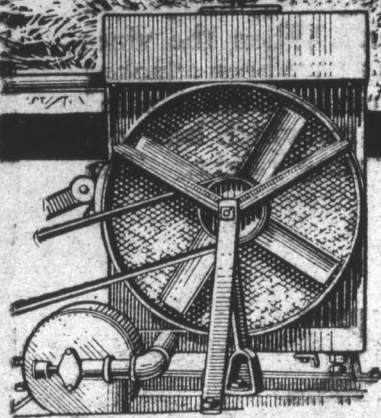
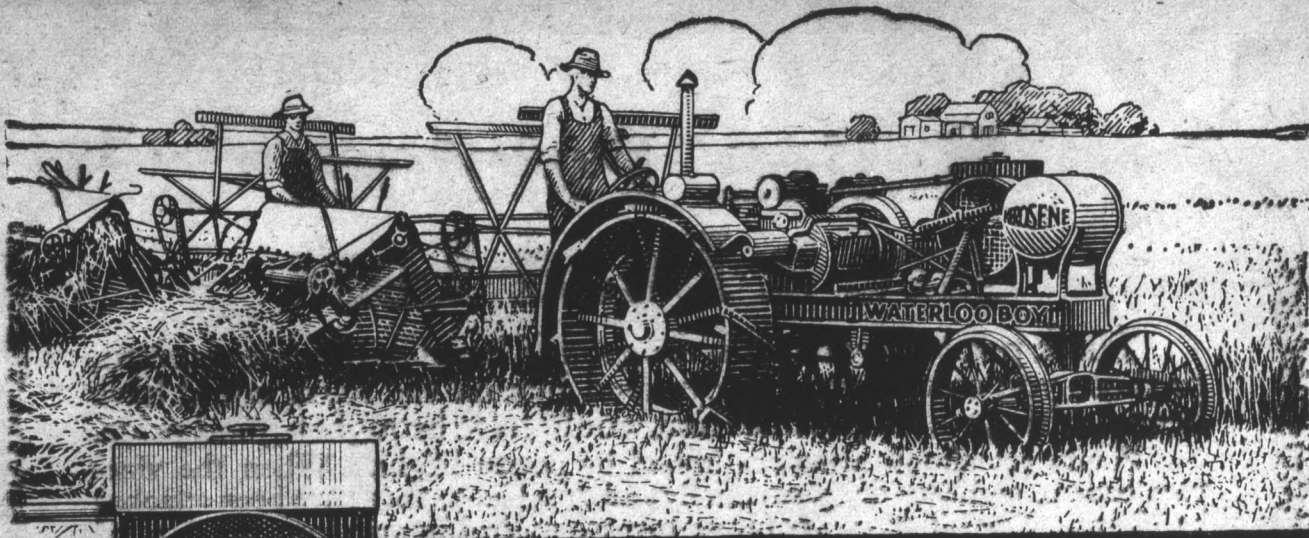
The application of barnyard manure to promote decomposition of the muck has been found essential in the initial stages of reclamation.

Mr. L. C. Robart, Eaton Rapids, in his talk, "Beets on Muck," emphasized good management in cultivation and in handling labor. The fertilizer practice which he followed was outlined by the muck specialist at the college. The results were satisfactory. Drainage and rolling were the two considerations which received strong emphasis in Mr. Robart's discussion.

J. J. Jeffrey, former Professor of Soils, M. A. C., gave the results of carefully conducted experiments on the peat lands of the upper peninsula. Mr. Jeffrey gave figures showing the value of applications of potash on the Senie Marsh which is typical of a large amount of peat land of the upper peninsula. Potash plus phosphoric acid gave the best results. Applications of manure were similarly satisfactory.

E. L. Woodhams, manager of the Mentha Farms, probably the most profitable area of muck in Michigan, gave a highly instructive paper on "Searching for a Muck Corn." He gave an interesting history of the development of corn varieties; asserting that it is not the Illinois and Iowa farmers with a climate "made to order," who are the greatest corn growers in the world, but the American Indians who were forced to adapt their corn to the climate that they found, and did it successfully enough to depend on the corn as a principal source of food from New Mexico to North Dakota.

Mr. C. E. Downing, of Vermontville, was elected president of the association; Lewis Merriman, vice-president, and Ezra Levin, East Lansing, secretary. Mr. Levin outlined the proposed demonstrations to be carried out in the state this year and submitted the plans for discussion by the association. He urged the members to cooperate in collecting accurate data and promised full cooperation in the planning of any test which the muck farmers of the state wished to carry out on their respective farms.



A centrifugal pump, four-blade fan, and large size, honey-comb type radiator insure positive cooling on the Waterloo Boy.

John Deere Implements, Waterloo Boy Tractors and Kerosene Engines are distributed from all important Trading Centers. Sold by John Deere Dealers everywhere.

Uniform Cooling Keeps The Engine on the Job

THE cooling system of a tractor gets its real test during the heat of harvest and early fall plowing. It is then that you can rely upon the Waterloo Boy—the pump, fan and radiator system of cooling always keeps the engine on the job.

WATERLOO BOY BURNS KEROSENE COMPLETELY

To secure uniform power you must have uniform cooling. The pump, fan and radiator system used on the Waterloo Boy positively assures uniformity in circulating cooling water.

It holds the engine at the right temperature for proper lubrication, and maintains sufficient heat to insure complete combustion and full power from the fuel.

An even temperature is maintained at all operating speeds because the speed of the pump and fan is automatically controlled by the speed of the engine.

You get a big radiator on the Waterloo Boy. It holds thirteen gallons. You won't find it necessary to stop in the field every few hours on a hot day and fill it.

The cooling system is but one of the Waterloo Boy's superior features. Its simplicity and accessibility, its powerful 12-25 H. P. engine, its ability to burn kerosene and burn it right, its Hyatt roller bearings that eliminate friction, and a drawbar shift lever that gives you the correct line of draft on all tools, all contribute to make it a real farm tractor.

We want you to read a booklet describing the Waterloo Boy. Write for it today. Address John Deere, Moline, Illinois, and ask for Booklet WB-626.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

"ACME" TILLAGE TOOLS

Make Perfect Seed Beds

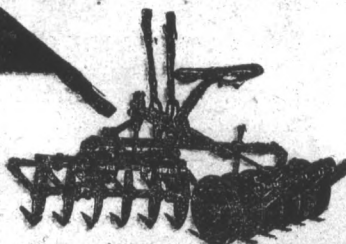
"ACME" TILLAGE TOOLS enable you to make better seed beds than you have ever made before. They provide the plants with smooth, fine, firm soil which promotes quick root growth. Crops planted in "Acme" made seed beds yield heavier.

Better Tillage — Bigger Crops

"ACME" Disc Harrow has offset gangs which disc all the soil — leave no "comb" or middle ridge. The discs are specially formed so that they enter the soil with a clean cut. They lighten the draft yet pulverize thoroughly. Special ball bearings take up the end thrust. Pressure springs hold the gangs to their work — prevent skips on uneven ground.



"The Coulter 'Do the Work' — Make Perfect Seed Beds."



"ACME" Disc Harrow — 10 Sizes

"ACME" Coulter Pulverizing Harrow completes the work so well begun by the "Acme" Disc. It is almost universally used on truck farms where perfect seed beds are the common thing. And it's equally valuable on fruit and general farms. Everywhere, "The Coulter 'Do the Work' — make perfect seed beds."

"I have used both your 'Acme' Disc and 'Acme' Coulter Harrows at the State Institute of Applied Agriculture on Long Island," writes Wm. Ryan, Inspector in Farm Management, "and find that they do excellent work. I can recommend them either with tractors or with horses."

Ask your dealer to show you "Acme" Tillage Tools. Write us for free book, "The 'Acme' Way to Crops that Pay."

DUANE H. NASH INC.
456 Elm Street, Millington, New Jersey

Good Clubbing Offers

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The Michigan Farmer, one year... \$1.00
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Total value \$3.50
Both for \$2.35.

OFFER No. 105.

The Michigan Farmer, one year... \$1.00
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The Michigan Farmer, one year... \$1.00
Breeder's Gazette, one year..... 1.50

Total value \$2.50
Both for \$2.15.

When Writing to Advertisers Please Mention
The Michigan Farmer

Rotten Potatoes Are a Dead Loss

Those potatoes you left in the ground because they were rotten, or those you sorted out and dumped behind the barn, could have been healthy, sound potatoes that would have brought a good price.

Potato rot almost always is caused by potato blight. When the vines turn brown, and later die prematurely and turn black, they have been attacked by blight. The blight spores (or germs) are washed by rain from the diseased vines into the soil and infect the tubers, causing first dry rot which later develops into the common wet rot. Prevent rot by preventing blight. The most successful spray against blight is

Pyrox

REG. U. S. PAT. OFF.
TRADE MARK REGISTERED

It covers the vines with a film of protection that kills blight spores before they have a chance to grow. It keeps the plants green until frost—and keeps them growing several weeks longer than usual. Potatoes make a big increase in size in the last three weeks. Therefore, PYROX actually increases the yield by lengthening the growing season.

PYROX is also a poison. It kills the potato bugs—and if applied early, the old hard-shells as well as the slugs. Potatoes sprayed early with PYROX are not bothered with bugs and the early spraying is the sure way to eliminate blight entirely. Later sprayings keep the new growth covered.

Remember, PYROX is a powerful fungicide. Twenty years of actual farm use have proved it the most effective remedy against serious fungous diseases. It contains the essential copper,—in proper quantity and in most active form for greatest fungicidal value. It often succeeds where other fungicides fail. The poison insecticide in PYROX is chemically blended with its copper fungicide, and increases the effectiveness of both.

Spray your potatoes with PYROX. Prevent blight and rot. Kill the bugs before they start working. Get your supply of PYROX early. See your dealer and be sure that he has it in stock.

Write today for our Vegetable Growers' Spray Manual.

BOWKER INSECTICIDE COMPANY

43 E. Chatham St., Boston, Mass.
1006 Fidelity Bldg., Baltimore, Md.
716 Conway Bldg., Chicago, Ill.

OUTLOOK FOR FRUIT BUSINESS.

AS the time draws near to order nursery stock, the fruit grower finds that trees are high. And nursery companies urge that orders be placed early because of the scarcity of stock. Then the fruit grower wonders whether he had better expand his business or rest on his oars until conditions become more settled.

In a recent visit with a commercial fruit grower, he stated that apples would have to bring a high price in the next two or three years to pay the estimated cost of production. Labor seemed to be the item that worried him. The plowing can be speeded up with a tractor but pruning, spraying and harvesting fruit requires man labor and it does not seem that the amount of labor to properly produce fruit can be reduced.

This year fruit is scarce and much of the fruit seems to be shipped in from the west. It is of good quality and buyers seem to have the money to eat it. Of course, there will never be any profit in cull fruit, but it seems as if there is a great opportunity for Michigan growers to grow good fruit to compete with the western stock.

The writer recently talked with a farmer who had shipped a barrel of Michigan Spy apples to a friend that lived in an apple-growing section of the west. The Spys were greatly appreciated and attracted much attention. The recipient of the gift was willing to admit that the Spy apple had a flavor which was superior to much of their western grown varieties. When the fruit from this state is advertised even half as much as some of the western apples, Michigan growers will never be able to fill their orders if the fruit has the quality to back up the advertising.

In many sections the scale has ruined the old apple orchards or they have died from general neglect. The farmers with only a few trees have often neglected them because they did not have the time to follow out a spraying schedule with profit when the orchard consisted of mixed varieties. The fussing necessary to mix and apply applications of spray dope for a few trees interfered too much with their other work. In the future many of these farmers without orchards will be in the market for at least one barrel of apples each year.

Peaches have been hard hit during the last five years. The peach, which is one of nature's most attractive gifts, is also one of its greatest speculations. The grower is always sure of the expense of cultivating, pruning and spraying. But he is never sure of the crop that pays the bills. And frosts and freezes are bitter enemies of the peach. One peach grower recently told the writer that he would plant no more peaches, but gradually work more extensively into apples because they were a safer business proposition. If he ever cuts out peaches it will be with regret, but he knows the risks from experience and discouragement. Apples seem to be one of the best bets in the future orchard business of the state. Growers know how to control the pests and the trees are more hardy and will stand more than peaches.

Even the pear, because of the blight, and the plum because of its perishable nature, will never rank in importance with the apple, which can be stored for future sales. It takes time to come into bearing and most farmers will have to limit their orchard operations in that line because of lack of labor or lack of capital. But the apple will probably be the standby and the safest proposition in Michigan horticulture for years to come.

Small fruit paid very well this year and many farmers report good crops. Some strawberry growers on plots of three or four acres report very successful years. Raspberries brought

FREE Special Book of Plants that Grow

WRITE NOW!

Order your 1920 ornamental fruits and trees and plants now. Your order reserved at present prices and shipped in time for spring planting. For 75 years we have been known for "Plants That Grow," and fair dealing. Express or freight paid anywhere east of Miss. River on order of \$3 or more.

Peter Bohlender & Son
SPRING HILL NURSERIES
TIPPECANOE CITY (MIAMI COUNTY) OHIO

SCARFF'S 5000 bushels. Tested and sure to grow. Finest quality. 20 leading varieties. Also seed oats, barley, grass seed, etc. Samples on application. 1200 acres. Be sure to get our new catalog. Write today. W. N. Scarff & Sons, New Carlisle, Ohio.

Our Good Seed Corn Grows Good Ensilage

Wisconsin, Michigan and N. Y. customers tell us Lucerne Lawn Seed Corn makes big tonnage of best ensilage. You'll remember the quality after you've forgotten the cost—and you'll buy again. Write for free sample and prices. PAUL D. COOPER, Box 59, HAMMOND, ILL.

HIGH SPRAYERS Pressure 38 Years Experience

Osprymo Catalog Free. With special features all their own. They claim your kind attention. In every size . . . for every zone. They furnish sure protection. FIELD FORCE PUMP CO., Dept. L, Elmira, New York.

EVERGREENS For Windbreak Hedge and Lawn. All hardy, vigorous and well rooted. We ship everywhere. Write for free Evergreen book. Est. 1895. World's Largest Growers. The D. Hill Nursery Co., Inc., Box 2301, Dundee, Ill.

Mention The Michigan Farmer When Writing Advertisers

THREE IN ONE SERVICE FOR THE FARM

We can give you on the farm every convenience of the city in lighting, cooking and ironing, with the old reliable Michigan Pit Carbide Gas Generator.

A special guarantee goes with every Michigan Pit Generator as to material and workmanship and against rust or corrosion, and it is endorsed by the National Board of Fire Underwriters.

Write us today, giving the number and size of the rooms in your house and barns, and we will gladly give you an estimate of the complete cost of installation and operation.

We also Manufacture the Purity Waterless
Chemical Indoor Toilet.

ADDRESS:

NIGHT COMMANDER LIGHTING COMPANY
JACKSON, MICHIGAN

These Seven Cows

Kept for 1 Year on the Product of 1 Acre

On one acre of land in the state of Michigan, Ross' Eureka Ensilage Corn produced, in one year, 70 tons and 800 lbs. of the best quality of sweet ensilage. At 50 lbs. per day, this would feed seven cows for one year with enough left over for 261 feeds. Ross' Eureka Corn grows the tallest, has the most leaves, is very short jointed and will produce more tons of good sweet ensilage per acre, than any other variety. We have been selling Eureka corn for nearly 40 years and we know before shipping that it will grow under favorable conditions. This corn usually germinates 90% or better.

Ross' Eureka Corn

Complete line of Farm Seeds: Oats, Rye, Barley, Wheat, Buckwheat, Cow Peas, Vetch, Soy Beans, Essex Rape, all varieties of Field and Ensilage Corn; Grass Seeds, including all kinds of Alfalfa and Sudan Grass. Also full line of Agricultural Implements, Poultry Supplies, Fertilizer, etc. Our 120-page catalog mailed free on request.

ROSS BROTHERS COMPANY, 37 Front Street, Worcester, Mass.

good prices and some growers are planning on increasing their acreage of such fruit. The elimination of liquors should help to increase the consumption of all kinds of fruit juices. This will broaden the market of the small fruit grower and help to keep up the prices.

When tree fruits are high in price or scarce, there is more canning of raspberries and strawberries. This is an encouraging feature. Small fruit is very perishable and the housewives who can order by the crate are the valued customers who help the berry grower to cash in on his crop.

The future of small fruit production has at least one uncertain feature, and that is the cost of labor and the scarcity. A grower must study his supply and know where the pickers will come from before he can expand his business with safety. Every farming section has its own problems along that line. The nearer a farmer lives to a large city with many jobs, the greater the difficulty of hiring labor to work on a farm.

In general, it seems as if the fruit grower must be conservative. The cost of production is high. It is very difficult to accurately figure the cost as the amount of the crop is unknown. It is even more difficult than figuring the cost of growing a field of grain as orchard costs must be distributed over several years. But there is a cost of production as the books of commercial orchards will prove. And that cost is large. However, fruit must surely bring good prices in the future, and a moderate amount of expansion in that line should be about as safe as any line of farming.

REMUNERATIVE PRICES SOUGHT BY PICKLE GROWERS.

PICKLE growers of Fruitport and adjoining townships have organized the "Fruitport Pickle Growers' Association," for the purpose of protecting and promoting their business, economic and social interests. Much enthusiasm is being shown by the members and the movement is spreading rapidly. They believe that organization should bring them the relief that the farmers of other sections are getting through the same methods.

Here are the figures which members contend give the present cost of growing an acre of pickles when a reasonable wage is allowed and the relative value of manure is considered, i. e., three dollars per load:

Rent of ground.....	\$ 18.00
Plowing	5.00
Fitting	7.00
Manure spread (sixteen loads).....	48.00
Manure for hills (six loads).....	18.00
Spreading	6.00
Manuring hills	6.00
Planting	6.00
Cultivation	6.00
Thinning and hoeing	16.00
Harvesting (36 days' labor).....	144.00
Delivering (36 trips)	36.00

Total cost of production\$216.00

On this basis the man who only secures an average crop is bound to lose. He will get about 150 bushels of firsts which, at the average price of 1.25 will return \$187.50, and about fifty bushels of seconds which, at forty cents per bushel, adds \$20.00 more, making a total income from the average crop of \$207.50.

OSSEO FARMERS ORGANIZE.

BELIEVING that their interests would be better served through a cooperative association, the farmers in the vicinity of Osseo, Mich., recently met and organized the Osseo Cooperative Association. The following officers and directors were elected: M. G. Mosher, president; Ivan K. Maystead, vice-president; E. D. Chaney, secretary and manager; John West, treasurer; Frank Farmer and Welcome Keefer, directors. E. D. Chaney was elected manager.



Why Judge Frank buys Mule-Hide

Weigh the evidence carefully and then base the decree upon the side of justice—that's my motto whether it's in trying lawsuits or buying Roofing. *Mule-Hide* contains the evidence of honest manufacture which makes for durability and weather resistance. Hence its enviable service record

"Not a Kick in a Million Feet"

Mule-Hide Shingles have the same enduring qualities as *Mule-Hide* roll Roofing with the added feature of beauty. Their rich gray-green or red surfaces are permanent and unfading. Ask your lumber dealer; if he doesn't carry *Mule-Hide* a letter will bring him samples.

THE LEHON COMPANY *Manufacturers* 44th to 45th Street on Oakley Avenue - Chicago

Hubers Reliable Chicks



500,000 FOR 1920
By Parcel Post Prepaid. Delivered to You. Guaranteed Live Delivery. Eggs for Hatching by the Setting or 300.

We have installed the most modern features of the Hatching Industry which will insure chickness strong as the Hatched Chick and Full of Pep.

This is our 11th season. With the great increased demand for our chicks and the fine reports and praise

we receive from our customers, proves that our chicks are from Stock of Good Quality, Bred for Heavy Egg Production and that they are Properly Hatched. Stop your loss by buying our Reliable Chicks.

We hatch all our chicks from pure bred, true range farm stock. S. S. White and Brown Leghorns, S. C. Anconas, Barred Rocks, S. O. and R. C. Reds, S. C. Black Minorcas, and S. C. Buff Orpingtons. Special combination offer on chicks, broilers and brooder stock. Before buying elsewhere send for free illustrated catalog and prices. Place your order at once and avoid disappointment in the rush of the season.

Hubers Reliable Hatchery

East High St. FOSTORIA, OHIO

CHICKS We have shipped thousands each season since 1894. Are looking for orders now for Spring delivery, booklet and testimonials. FREEPORT HATCHERY, Box 12, Freeport, Mich.

DAY OLD CHICKS

Guaranteed to 1,500 miles. Eggs for Hatching. Bar. Rocks, S. C. W. Leg., S. C. & R. C. Reds, W. Wyand., Buff & W. Orp. Catalog free.

GOSSEN POULTRY FARMS, R. 10, Gosport, Ind.

DANGER If chick and egg are not shipped right. Best Blooded stock ever produced at low prices quoted. Selected Quality, Exhibition trap-nested stock. 16 varieties. Hatching eggs, Hens, Ducks, Turkeys, Geese. Book your orders early. Avoid disappointment. Stamps appreciated. Beckman Hatchery, 26 E. Lyon, Grand Rapids, Mich.

Fowler's Buff Rocks. We are now brooding for the season. A few choice cockerels left. D. D. FOWLER, Hurford, Mich.

Day Old chicks and eggs for hatching. Brooder and Importers of Broom, Seaman White Leghorns, White and Barred Rocks, S. C. Rhode Island Reds. Heaviest laying strains obtainable. Order early. Brummer's Poultry Farm, Holland, Mich., R.R. No. 8

For Sale 4 laying pullets and cock from 280 egg strain and blooded stock. S. C. White Leghorns. Mrs. Henderson, Leetsville, Mich.

CHICKS AND EGGS

Rose and Single Comb R. I. Reds. Barred Plymouth Rocks. Superior Color. Prolific Layers. Propagated by parcel post and safe delivery guaranteed. Illustrated catalog free.

INTERLAKES FARM, Box 38, Lawrence, Mich.

CHICKS CHICKS

12,000 chicks a week after Mar. 20. Grand laying strains quality S. C. White Leghorns and Modified Anconas. Strong, sturdy chicks shipped everywhere parcel post guaranteed safe arrival in lots 25; 50; 100 or more. 12th season, order now. Fine free catalogue.

W. VAN APPELDORN, R. 7, Holland, Mich.

Chicks Bred-to-Lay and Exhibition S. C. W. Leghorns, stock that produced the winners in the state demonstration farm work. Winners at Detroit, Toledo and Oil City, Pa. Shows. \$10.50 per 50, \$20 per 100, \$35 per 500. Safe delivery postage paid. Sunnybrook Poultry Farm, Hillsdale, Mich.

Chicks that Live \$15 per 100 S. C. W. Leghorns. Send for catalog. SNOWLAKE POULTRY FARM, R. 1, Grand Rapids, Mich.

Eggs from prize winning Barred Rocks, 1, 2, 3, 4 and 5 cockerels and 1 pullet and 1 pen at Ypsilanti and 2 cockerels and 2 pullets at Albion in a class of 48. Cockerels and pullets for sale from \$5 to \$5. Eggs \$2 per setting. George H. Campbell, R. 5, Ypsilanti, Mich.

John's Big beautiful Barred Rocks are hen hatched grow quick, good layers, sold on approval, males \$4 to \$8. Circulars photos. John Northon, Clare, Mich.

LOOK: BABY CHICKS AND DUCKS 10 breeds of chicks, 4 breeds of ducks. Utility and Exhibition grades. Postage paid and live delivery guaranteed. Capacity 400,000 weekly Catalog free. Stamps appreciated.

NABOB HATCHERIES, Gambier, Ohio.

Rhode Island Whites Are the best all purpose birds being year round layers. Eggs and chicks and a few good males.

H. H. JUMP, Jackson, Michigan.

RHODE ISLAND REDS—Rose Comb Cockerels hen-hatched, farm raised, big and thrifty, from prize winning strains. \$4 to \$7.50, four top birds \$10 each. For immediate or later shipment—orders filled in turn as received. Write now to secure best selection.

BIDWELL STOCK FARM, Tecumseh, Mich.

Single Comb Rhode Island Red Eggs for matings, well bred winter layers. \$3.00 per setting; \$8 per 100. Investigate. Babcock and Son, R. D. 6, Battle Creek, Mich.

S. C. Brown Leghorns Excellent layers. Farm range. Eggs postpaid, 15, \$1.50; 30, \$3; 45, \$4; 100 \$8. Floyd Robertson R. 1, Lexington, Indiana.

S. C. D. Minorca Cockerels, 8 to 9 lbs. Price \$6 to \$10. Eggs in season. Satisfaction guaranteed. CHAS. SCHOOK, Allenton, Mich.

Silver, Golden and White Wyandottes. Choice quality cockerels and pullets \$3.00 to \$5.00 each. C. W. Browning, E. 2, Portland, Mich.

S. C. R. I. RED Cockerels, \$3.00 to \$5.00 each. Fine stock. Also Collie Dogs. O. E. HAWLEY, Ludington, Mich.

S. C. W. Leghorns. Baby Chicks and Eggs delivered anywhere. Heavy laying strain. The Rose White Leghorn Farm, East Lansing, Mich.

S. C. Rhode Island White and White Wyandotte eggs for hatching. Prices reasonable. Write W. C. ECKARD, Paw Paw, Michigan.

White Wyandotte; out of choice stock for sale; cocks, cockerels \$3.50 each, send for my circular. DAVID RAY, Ypsilanti, Mich.

White Leghorns, Brown Leghorns, Anconas chick \$17 per 100. Live arrival guaranteed. Eggs of all varieties. Catalog free. Triangle, Clinton, Mo.

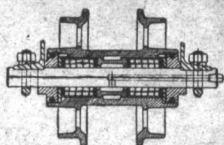
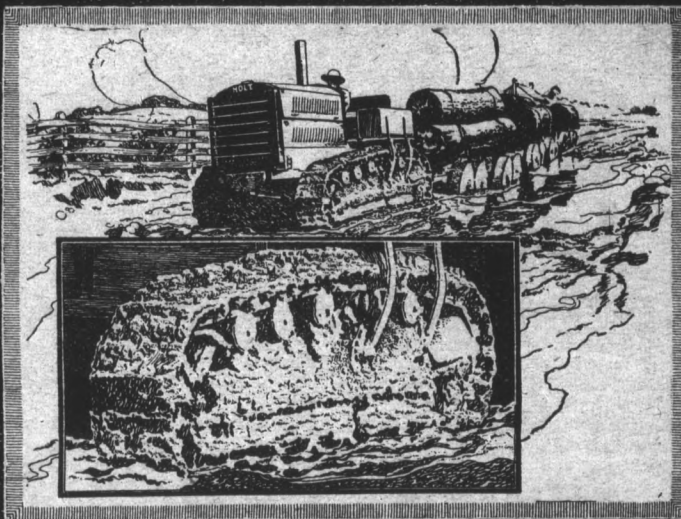
White Plymouth Rocks Choice breeding. Eggs 15, \$2.00; 100, \$10.00, prepaid. Day old chicks, 100, \$20.00. Richard M. Gorton, Mason, Mich.

White Wyandottes: Eggs for hatching from selected layers. \$2.00 per 15, prepaid. 1 male 30 females, \$40.00. Frank De Long R. 3 Three Rivers, Mich.

Additional Poultry Ads on Page 439

HYATT

ROLLER BEARINGS



Cross Sectional View of a Track Roller in Creeper Type Tractors Showing Application of Hyatt Roller Bearings.

In this position the hollow spiral roller construction of Hyatt Roller Bearings provides many distinct advantages.

Only a bearing of the Hyatt type can stand up and give permanent performance under the gruelling conditions of track roller operation.

It is because of these many peculiar advantages that Hyatt Roller Bearings are just as permanent as the shafts upon which they operate.

The Hardest Service in the World

Forcing their way through mud, muck, sand or water—going over all obstructions and supporting the tremendous weight and pull of this giant tractor and its load, the track wheels of the "creeper" type tractor endure the hardest service in the world.

And, at the point of severest wear in these track wheels, Hyatt Bearings are installed.

Ten years ago, Hyatts were first used in this application. Many of these old machines are still in operation, and in them Hyatt Bearings have given ten years of constantly dependable, permanent service.

Ten years' use under the most severe working conditions known in the tractor industry, without ever requiring adjustment.

There can be no greater proof that Hyatt Bearings should be in your tractor, truck, thresher, grain binder, plow, windmill and other farm machinery.

HYATT ROLLER BEARING COMPANY
Tractor Bearings Division, Chicago

Motor Bearings Div., Detroit Industrial Bearings Div., New York City

WHEN TO SOW AND HARVEST LOCUST SEED.

When is the proper time to harvest locust seeds, and when to sow. I gathered some last year in the spring and sowed it, but only a few of the seeds would grow. I intend to raise them
C. V.

In regard to the harvesting of locust seeds, would say that the proper time to collect locust seed is in the fall. The pods are then hanging on the trees in abundance and may be picked very easily. It should be borne in mind that there are two kinds of locust. The black or yellow locust has rosebush like pricker and a short pod three inches in length. The honey locust has a pod twelve to fourteen inches in length and an inch wide. It also has a long brown thorn. These brown thorns occur on the body of the trees and are very tough. Both trees are valuable for fence posts. Black or yellow locust grows much faster than the honey locust, but has the serious drawback of being subject to injury by the locust borer and in some sections of the state may be almost entirely destroyed while the honey locust is not subject to the borer at all. It is, however, a slow grower and will produce posts in not less than twenty years usually. The seed of both of these trees must be treated before it is put into the ground. This treatment consists of dipping or pouring the seed into water heated to one hundred and eighty or two hundred degrees. If water at two hundred degrees is used the water and seeds must be stirred constantly. Use a quart of heated water to each pound of seed. Treatment will have gone far enough when the seed are swollen so that they take up nearly all of the water. Seed should then be sown directly into the ground drills, holes, or in spots where intended for final planting.
F. H. S.

A CORRECTION.

In the issue of the Michigan Farmer of February 14, 1920, on Page 236, under the caption, "Fertilizer Analysis," J. F., St. Joseph county, asks what rotation the ingredients of fertilizer are named in the printed analysis, such as 2-10-0, etc., and the answer given was as follows: "A fertilizer formula reading 2-12-0 means two per cent nitrogen, twelve per cent phosphoric acid, no potash; one reading 2-10-4 means two per cent nitrogen, etc."

I wish to call your attention to the fact that fertilizer manufacturers buy and sell all ammoniates on the basis of ammonia content rather than nitrogen content and the fertilizer formulas are made up on the same basis. The first figure of a fertilizer formula therefore, always refers to the percentage of ammonia rather than nitrogen. The nitrogen constitutes eighty-two per cent of the ammonia and consequently the nitrogen content can be obtained by multiplying the amount of ammonia by the factor .82.
A. J. PATTEN.

BUYING MUCK LAND.

I have a chance to buy 160 acres of land with about two feet of a muck, and a portion of the land has a marl bottom and the remainder clay. A good ditch runs across the south end of this land. Will cost about \$25 per acre and is located three miles from a railroad town.
Subscriber.

If \$25 is not an error, and is exactly the price per acre for one hundred and sixty acres of muck marl, and clay subsoil, well-drained, and decomposed, which can be easily cleared, three miles from a railroad, it certainly is a bargain. I would not hesitate to buy. With the proper system of farm management in which live stock forms the pivot and hay and sugar beets sold as cash crops and with the silo, you can get as good returns from good muck as one hundred and sixty acres of good high land.
E. L.

"STANDEX"

GASOLINE GUAGES
FOR FORD CARS \$1.00

Uses Regular Filling Hole
Simply screws into top of your gasoline tank. Uses regular Ford cap to close filling hole. Need never be removed. Is accurate to the dot. Mailed to you for \$1.00.

M. H. MACKEY SALES CO.
662 BOOK BUILDING
Detroit, Michigan

SPRAY YOUR FRUIT TREES AND VINES



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

Excelsior Spraying Outfits and Prepared Mixtures are used in large orchards and highly endorsed by successful growers. Write for our money-saving catalog, which also contains a full treatise on spraying Fruit and Vegetable crops.
WM. STAHL SPRAYER CO.,
Box 728 Quincy, Ill.

Clip in the Spring

Treat your horses with consideration. You would not do your spring work wearing your winter overcoat—don't make your horses work while burdened with the winter's clothing. Clip them. A Stewart machine costs only \$12.75 and lasts a lifetime. Send \$2.00 and pay balance on arrival. Or write for catalog showing complete line of clipping and shearing machines.
CHICAGO FLEXIBLE SHAFT COMPANY
Dept. A 127, 12th St. and Central Ave., Chicago, Ill.

EATON THE STRAWBERRY SUPREME

This is our new Strawberry, the greatest money maker of all time. Will produce more quarts to the acre of super-quality berries, than any variety known. Our stock is limited, so write today for Catalog telling all about this wonderful new berry as well as the standard varieties, and a complete assortment of all Small Fruit Plants. Our thirty years' experience in successfully propagating "Strawberry Plants That Grow", has enabled us to furnish our customers with the best quality plants that money will buy. That's why they come back to us year after year. Order from us and you'll not be disappointed.

C. E. Whitten & Son, Box 14, Bridgman, Mich.

SCOTT'S SWEET CLOVER

Ten dollars cheaper than Red and the best substitute. Fits right into the rotator. Ask for our catalogue telling "How to Know Good Seed" and sweet clover chart explaining all about this wonderful plant.

O. M. SCOTT & SONS CO., 474 Main St., Marysville, Ohio

SCOTT'S TIMOTHY

This is one of the few field seeds that is reasonable in price this year. Ask for samples and our Seed Book telling "How to Know Good Seed". All other varieties of superior quality. O. M. SCOTT & SONS CO., 474 Main St., Marysville, Ohio

Strawberry Plants \$3.75 per 1000

Sen. Dunlap and Pocomoke, the two leading varieties. Also the well known Brandwine, Michael's early and Warfields, \$3.75 thou., \$2.25 per 500 or \$1.75 for 250. All plants guaranteed to be first class plants or money refunded. No catalogues.
Filena Woolf, Swan Lake Fruit Farm Allegan, Mich.

HEAVEN AND HELL

Swedenborg's great work, 400 pages, 15 cents postpaid. Pastor Landenberger, Windsor Place, St. Louis, Mo.

Please mention the Michigan Farmer when writing to advertisers.

Get This Spraying Guide

Spraying is absolutely necessary for best results in garden, orchard, and field. Our free Spraying Guide will tell you when and how to spray. It will save you many dollars, yet costs you only a postal.



outfits can be had in 40 styles—big and little. All have patented non-clog nozzles that save time and bother. They are endorsed by Experiment Stations—over 450,000 in use.

"You Must Spray To Make Crops Pay"

You'll find our Spraying Guide mighty handy. Also our catalog. Both are free. Write for them today.

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

19.95 American CREAM SEPARATOR

On Trial. Easy running, easily cleaned. Skims warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address
AMERICAN SEPARATOR CO., Box 5061 Bainbridge, N.Y.

WISCONSIN CLEARS LAND.

TWENTY-FIVE counties of upper Wisconsin are going to add ten million dollars to the wealth of the state between now and next fall. This is a conservative estimate made by John Swenehart, in charge of the land clearing operations for the college of agriculture in announcing the summer campaign to clear more land.

"Dynamite now costs less in terms of labor or farm product than ever before," he says. "Five days' wages will buy one hundred pounds of explosive this year, when nine days' work was required in former years. Spend five days' wages for explosives, is the idea upon which the drive expects to succeed," declares Mr. Swenehart.

"Wisconsin is now the largest user of explosives for agricultural purposes," declares Mr. Swenehart. "Last year Wisconsin used as much as any other three states. This is due in a large measure to the stimulative effect of the land clearing trains and demonstrations operated by the college of agriculture."

"In 1919 we used in Wisconsin for land clearing about 1,500,000 pounds of explosive, including TNT. This was about forty pounds a farm and represented an outlay of not more than two and a half days' wages. I believe that at least ninety-farms out of one hundred could have easily afforded money to buy at least one hundred pounds of dynamite. At least one county two years ago used more than one hundred pounds to a farm. It is not impossible in any of the twenty-five upper counties."

"By buying in carload lots every community in upper Wisconsin can save money. It takes only one hundred orders of two hundred pounds each to make a minimum carload and get the carload prices. Great savings are possible through buying wholesale in large quantities and there are few communities in upper Wisconsin where this quantity of explosive cannot be afforded. We urge the community to get the cooperation of its road officials. If the town and county road committees will order their supply of explosive with the community, it will make it that much easier for a carlot order to be made up."

"It has been our experience that a community can easily arrange with a good live dealer to handle the whole proposition. It is necessary that somebody look after this and he is the proper person to do this. It is certainly fair for him to charge a reasonable profit. The user of explosives can well afford to pay the dealer, or any other person who acts as dealer, one cent a pound for the risk and trouble of handling. This, of course, is based on delivery at the railroad car and payment for the explosive in cash."

THE LAMB MARKET.

FOR weeks past the Chicago lamb trade has been largely affected by the tactics pursued by the big packing firms in bringing in large supplies direct to their local plants from Denver and other distant western points. This is done for the purpose of checking the upward movement of prices, and it has been effectual in many instances, although lambs have sold at far higher prices than in former years, in spite of reductions of as much as \$1.00 per hundred pounds on certain kinds in a single week. One of the discouraging features of the market is the practice of many sheepmen who persist in sending in lambs which have not been well fattened, causing them to sell much below the highest prices paid for prime flocks. Colorado is now furnishing a large share of the lambs marketed, including the lambs brought in by the Chicago packers.—F.

"What Are We Food Producers Going To Do About It?"

A Problem for the Dairyman

IN an article recently published in "The Milk Magazine", Professor Washburn of the University of Minnesota, after discussing the food value of skimmed milk and the large amount of this good human food that fails to reach humanity directly, says:

"What are we food producers going to do about it? Continue to waste or invent some better way of using the skimmed milk? Some of it is being well-used on farm-tables, though not by any means as much as should be; some amounts may be used as artificial buttermilk and as cottage cheese, but after all this is done, there still will remain great amounts of the most delicate and useful food with but a poor outlet."

What This Means To You

THIS pertinent question, asked by a Dairy Expert, through the medium of a Dairy publication, shows that thinking dairymen are beginning to recognize the serious situation—that over one-third of their total output of human food substance is not being utilized as such, and therefore is failing to that extent in benefiting humanity and profiting the dairyman.

Professor Washburn in his article calls skimmed milk "liquid lean meat" because of its likeness to meat in its food value. He then shows that when skimmed milk is fed to stock, only 15 to 20 percent of its food value is returned to humanity in the meat of the animal.

In other words, the dairyman who feeds skimmed milk to stock spends 100% of human food to get back 15 to 20 percent of human food.

Is this good business?

To state it in terms of money—should you spend \$100 to get back \$15 or \$20?

There is but one answer to this question. That is, skimmed milk should be used directly as human food, and a market value established for it as such, if the dairyman is to realize the greatest profit and humanity the greatest benefit from this valuable food.

Skimmed Milk as Human Food

TO do that, a market for skimmed milk as a direct human food must be created. But skimmed milk in its natural state is not a palatable food because of its lack of fat content.

To make it desirable for human use, then, a fat must be restored to it. Obviously butter fat cannot be used. Why not then use a wholesome vegetable fat?

"But that would not restore it to the equal of whole milk in food value", you say.

No it would not—but it is not desired to create an article that will compete in the market with whole milk as a direct food.

That brings us, then, to the question of use.

Skimmed milk, with a vegetable fat added, is particularly useful for culinary purposes in the home.

And there you have it. Skimmed milk with a small amount of vegetable fat added would serve as an auxiliary to the family milk supply for cooking and baking, and establish a new market for skimmed milk as a human food.

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Hebe thus points the way to utilize as human food the skimmed milk that is now being less profitably used, and it does this without interfering with the established markets for dairy products.

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1 Double Deck Newtown Incubator complete with automatic egg turner—7200 egg capacity.
1 Candeo Incubator—1800 egg capacity.
24 Hoover Candeo Hot Water Brooder.
1 Newton Coal Burning Brooder Stove.
800 S. C. W. Leghorn Cockerels, Yearling Hens and Pullets. Pure bred, Finest quality stock.
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large, great layers, pure white.
Strong, Day-Old Chicks. Hatch every week. Guaranteed delivery, full count, alive and lively \$18 per 100. Parcel postpaid.

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5 to 6 lb. S. C. W. Leghorn hens, 7 lb. males. Barron-5 Wyckoff-Ferris 264 egg strain, 1171 eggs from 40 pullets Nov. & Dec. eggs \$5 per 15. A. Wauchek, Gobleville, Mich.

Turkeys Michigan's best! Giant Bronze (breeding stock, 1 fine young tom, 28 lbs. \$20. 1 yearling tom and 1 late hatch.
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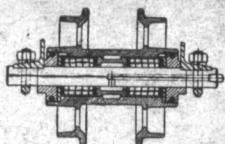
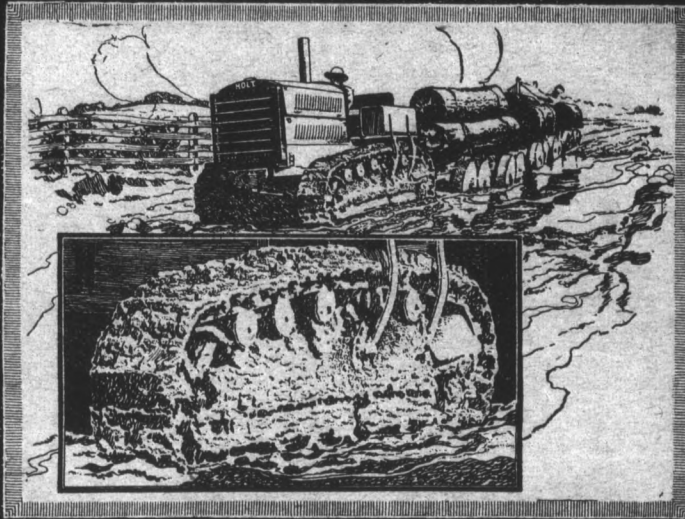
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Wanted. Several large Standard Cyphers incubators. State condition and price wanted. Interlakes Farm, Lawrence, Michigan.

White Wy. and R.I. Red cockerels for sale. \$3.00 to \$5.00 each. A few pullets. \$2.00 each.
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Cross Sectional View of a Track Roller in Creeper Type Tractors Showing Application of Hyatt Roller Bearings.

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Forcing their way through mud, muck, sand or water—going over all obstructions and supporting the tremendous weight and pull of this giant tractor and its load, the track wheels of the "creeper" type tractor endure the hardest service in the world.

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HYATT ROLLER BEARING COMPANY

Tractor Bearings Division, Chicago

Motor Bearings Div., Detroit Industrial Bearings Div., New York City

WHEN TO SOW AND HARVEST LOCUST SEED.

When is the proper time to harvest locust seeds, and when to sow. I gathered some last year in the spring and sowed it, but only a few of the seeds would grow. I intend to raise them C. V.

In regard to the harvesting of locust seeds, would say that the proper time to collect locust seed is in the fall. The pods are then hanging on the trees in abundance and may be picked very easily. It should be borne in mind that there are two kinds of locust. The black or yellow locust has rosebush like pricker and a short pod three inches in length. The honey locust has a pod twelve to fourteen inches in length and an inch wide. It also has a long brown thorn. These brown thorns occur on the body of the trees and are very tough. Both trees are valuable for fence posts. Black or yellow locust grows much faster than the honey locust, but has the serious drawback of being subject to injury by the locust borer and in some sections of the state may be almost entirely destroyed while the honey locust is not subject to the borer at all. It is, however, a slow grower and will produce posts in not less than twenty years usually. The seed of both of these trees must be treated before it is put into the ground. This treatment consists of dipping or pouring the seed into water heated to one hundred and eighty or two hundred degrees. If water at two hundred degrees is used the water and seeds must be stirred constantly. Use a quart of heated water to each pound of seed. Treatment will have gone far enough when the seed are swollen so that they take up nearly all of the water. Seed should then be sown directly into the ground drills, holes, or in spots where intended for final planting.

F. H. S.

A CORRECTION.

In the issue of the Michigan Farmer of February 14, 1920, on Page 236, under the caption, "Fertilizer Analysis," J. F., St. Joseph county, asks what rotation the ingredients of fertilizer are named in the printed analysis, such as 2-10-0, etc., and the answer given was as follows: "A fertilizer formula reading 2-12-0 means two per cent nitrogen, twelve per cent phosphoric acid, no potash; one reading 2-10-4 means two per cent nitrogen, etc."

I wish to call your attention to the fact that fertilizer manufacturers buy and sell all ammoniates on the basis of ammonia content rather than nitrogen content and the fertilizer formulas are made up on the same basis. The first figure of a fertilizer formula therefore, always refers to the percentage of ammonia rather than nitrogen. The nitrogen constitutes eighty-two per cent of the ammonia and consequently the nitrogen content can be obtained by multiplying the amount of ammonia by the factor .82.

A. J. PATTEN.

BUYING MUCK LAND.

I have a chance to buy 160 acres of land with about two feet of a muck, and a portion of the land has a marl bottom and the remainder clay. A good ditch runs across the south end of this land. Will cost about \$25 per acre and is located three miles from a railroad town. Subscriber.

If \$25 is not an error, and is exactly the price per acre for one hundred and sixty acres of muck marl, and clay subsoil, well-drained, and decomposed, which can be easily cleared, three miles from a railroad, it certainly is a bargain. I would not hesitate to buy. With the proper system of farm management in which live stock forms the pivot and hay and sugar beets sold as cash crops and with the silo, you can get as good returns from good muck as one hundred and sixty acres of good high land.

E. L.

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WISCONSIN CLEARS LAND.

TWENTY-FIVE counties of upper Wisconsin are going to add ten million dollars to the wealth of the state between now and next fall. This is a conservative estimate made by John Swenhardt, in charge of the land clearing operations for the college of agriculture in announcing the summer campaign to clear more land.

"Dynamite now costs less in terms of labor or farm product than ever before," he says. "Five days' wages will buy one hundred pounds of explosive this year, when nine days' work was required in former years. Spend five days' wages for explosives, is the idea upon which the drive expects to succeed," declares Mr. Swenhardt.

"Wisconsin is now the largest user of explosives for agricultural purposes," declares Mr. Swenhardt. "Last year Wisconsin used as much as any other three states. This is due in a large measure to the stimulative effect of the land clearing trains and demonstrations operated by the college of agriculture.

"In 1919 we used in Wisconsin for land clearing about 1,500,000 pounds of explosive, including TNT. This was about forty pounds a farm and represented an outlay of not more than two and a half days' wages. I believe that at least ninety-farms out of one hundred could have easily afforded money to buy at least one hundred pounds of dynamite. At least one county two years ago used more than one hundred pounds to a farm. It is not impossible in any of the twenty-five upper counties.

"By buying in carload lots every community in upper Wisconsin can save money. It takes only one hundred orders of two hundred pounds each to make a minimum carload and get the carload prices. Great savings are possible through buying wholesale in large quantities and there are few communities in upper Wisconsin where this quantity of explosive cannot be afforded. We urge the community to get the cooperation of its road officials. If the town and county road committees will order their supply of explosive with the community, it will make it that much easier for a carlot order to be made up.

"It has been our experience that a community can easily arrange with a good live dealer to handle the whole proposition. It is necessary that somebody look after this and he is the proper person to do this. It is certainly fair for him to charge a reasonable profit. The user of explosives can well afford to pay the dealer, or any other person who acts as dealer, one cent a pound for the risk and trouble of handling. This, of course, is based on delivery at the railroad car and payment for the explosive in cash."

THE LAMB MARKET.

FOR weeks past the Chicago lamb trade has been largely affected by the tactics pursued by the big packing firms in bringing in large supplies direct to their local plants from Denver and other distant western points. This is done for the purpose of checking the upward movement of prices, and it has been effectual in many instances, although lambs have sold at far higher prices than in former years, in spite of reductions of as much as \$1.00 per hundred pounds on certain kinds in a single week. One of the discouraging features of the market is the practice of many sheepmen who persist in sending in lambs which have not been well fattened, causing them to sell much below the highest prices paid for prime flocks. Colorado is now furnishing a large share of the lambs marketed, including the lambs brought in by the Chicago packers.—F.

"What Are We Food Producers Going To Do About It?"

A Problem for the Dairyman

IN an article recently published in "The Milk Magazine", Professor Washburn of the University of Minnesota, after discussing the food value of skimmed milk and the large amount of this good human food that fails to reach humanity directly, says:

"What are we food producers going to do about it? Continue to waste or invent some better way of using the skimmed milk? Some of it is being well-used on farm-tables, though not by any means as much as should be; some amounts may be used as artificial buttermilk and as cottage cheese, but after all this is done, there still will remain great amounts of the most delicate and useful food with but a poor outlet."

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To make it desirable for human use, then, a fat must be restored to it. Obviously butter fat cannot be used. Why not then use a wholesome vegetable fat?

"But that would not restore it to the equal of whole milk in food value", you say.

No it would not—but it is not desired to create an article that will compete in the market with whole milk as a direct food.

That brings us, then, to the question of use.

Skimmed milk, with a vegetable fat added, is particularly useful for culinary purposes in the home.

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With this great feed you can raise four or five calves at the cost of raising one on new milk. One lb. equals 1 gallon fresh milk in feeding value. It is easily mixed, calves like it and thrive on it. Cuts the cost of raising a calf to 1-4 what it costs on new milk.

For a short time only we will ship prepaid a 100-lb. sack for \$5.50 to any point east of Rockies. Send no money—pay when feed arrives. You can't go wrong. We guarantee satisfaction. International Sugar Feed Co., Minneapolis, Minn. **Do it NOW!**

WHEN AUCTION DAY COMES.

WHEN the stock and tools on a farm are to be sold at auction it pays to put them in the best possible condition. Many farm implements are sold for much less than they are worth because their unkempt appearance puts them in the junk class where they do not belong. Clean up the tools and oil them. A coat of paint may give a tool such an improved appearance that many bidders will think almost as much of it as a new implement.

The cattle deserve attention before the auction sale. On some farms the very fact that the cattle are soon to be sold causes the owner to lose interest in them. It pays to keep them well fed and groom them for the sale. It is not deceiving a prospective buyer to present goods at their best. It is only good business and should not be neglected.

Flocks of poultry are sometimes displayed at an auction cooped in slatted boxes where the buyer has no chance to examine them. No effort is made to grade the birds and so all of them are apt to sell at the same price as the poorest are worth. Why not cull the flock? Place the year-old hens in one lot and the pullets in another. Sort out the young cockerels and have them sold as broiler stock. If some of the birds are purebred and others are mongrels it will pay to classify them. It may bring a high bid for the purebreds when such a bid will be missing if all of the birds are lumped together.

When cattle are sold the owner should be at hand at all times to explain their age and condition and answer all questions demanded by the crowd. At a recent auction of purebred live stock at a consignment sale several of the cows sold for much less than they were worth because the owner did not get to the sale on time and the auctioneer was not provided with sufficient information concerning the time that the cows freshened or when they had been bred. The lack of this information caused some of the bidders to lose interest as they did not wish to risk placing bids without knowing the whole history of the animal. At the ordinary farm auction the farmer should be posted on all points concerning the date of freshening and breeding so that he can answer promptly all questions of the bidders.

It is a question if some farmers do not lose money at an auction by trying to sell every broken pitchfork and leaky pail on the farm. These worthless articles are sold so cheap that it is almost a waste of time for the auctioneer to talk about them, and sometimes I feel that the buyers hear the prices bid on the junk and think that everything on the farm should sell proportionately at the same rate. The sum total derived from the sale might be larger if only the good and useful articles are included.

Plenty of help should be available at an auction so that the animals can be brought promptly into the ring in their turn. The crowd does not like to wait and many buyers will lose interest if they have to remain all day to witness a sale that should be finished in four or five hours or less.—R. G. K.

SHIAWASSEE AND GENESEE "COOPS."

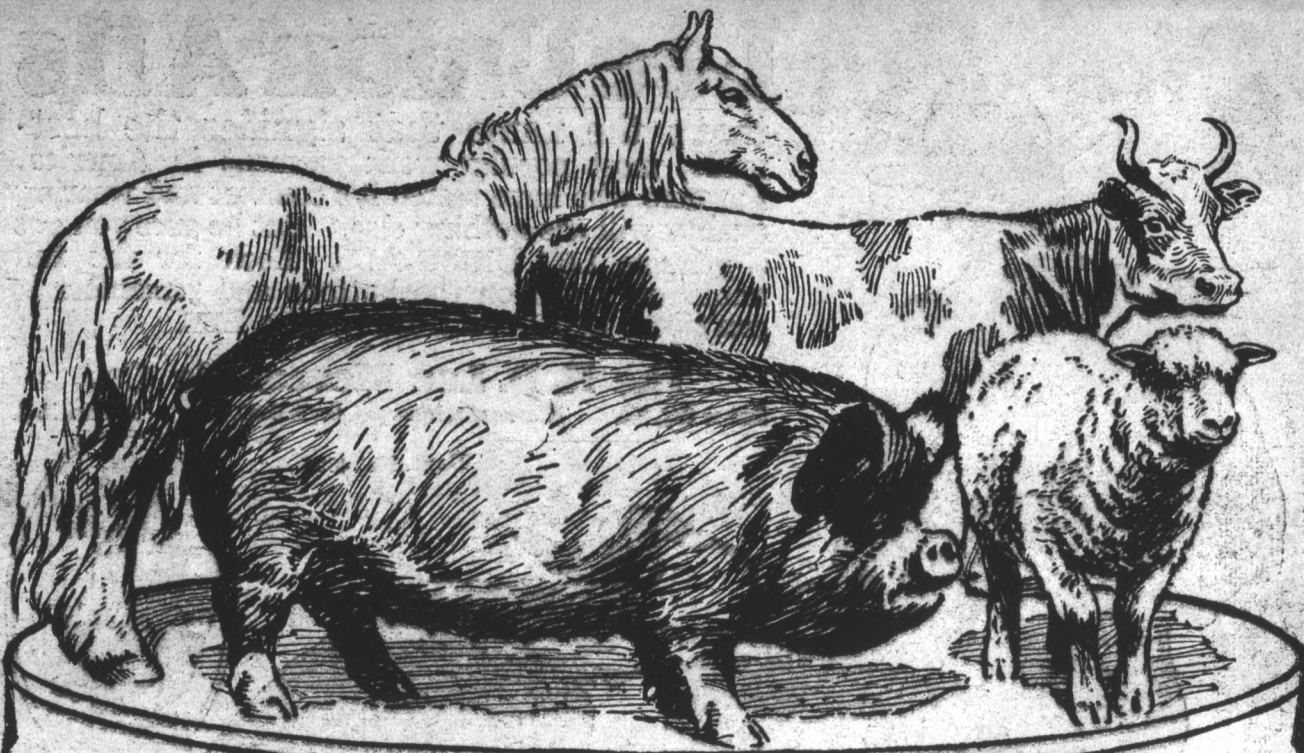
THE annual meeting of the Shiawassee and Genesee Cooperative Association held in February, marked the close of the second year's business of that organization. During the past year forty-seven cars of stock have been shipped, consisting of 1,050 hogs, 2,543 sheep, 286 cattle and 143 calves. The amount paid to farmers totals \$106,196.70. The members voted unanimously to join hands with the state and federal organizations.

LONG-FED CATTLE SCARCE.

FARMERS now engaged in preparing cattle for market are averse to long feeding, and this is natural in view of the extremely small demand from the packers for such beefs, the demand being almost exclusively for the cheaper and medium priced killers which can be converted into the smaller cuts of beef. Prices for cattle have had such an enormous decline from the high time last year that there is really no encouragement for long feeding, and the testimony of farmers who have been marketing heavy steers is almost unanimous that it is a losing business proposition. Of late very few steers offered on the Chicago market have sold higher than \$15, the greater part of the steers going in recent weeks at \$11.50@13.50, and the meager offerings of the better class of steers sufficed to meet all requirements. The decline in prices for canning cattle has been terrific, following the stoppage of the former huge foreign demand for canned beef and other canned meats, with inferior canning cows going as low as \$4.00 per hundred pounds. The people of European countries are now eating much more fresh beef, and scarcely any canned meats are being taken for exportation, so that the big packing firms of Chicago and Missouri River points have had to discharge great numbers of workers formerly actively employed in their canning departments. Recent advances in cattle prices, based upon materially reduced receipts, failed to embrace inferior cattle on the canner order, and stockers and feeders have continued to sell much lower than several weeks ago, when beef cattle were bringing much higher figures than are now paid. Of late the choicest steers marketed have sold at \$15@16, comparing with \$19@20 one year ago; \$14@14.50 two years ago; \$11.75@12.15 three years ago; \$9@9.90 four years ago, and \$8.75@9.15 five years ago. These comparisons go to show that prices are much higher still than in former years, last year excepted.—F.

THE HOG OUTLOOK.

THE materially lower supply of swine in the corn belt states is obviously a bullish factor in the hog trade, and another powerful strengthening influence is the liberal eastern shipping demand for hogs all the time in the Chicago market. Shippers have been buying an unusually large proportion of the daily offerings, taking the better class of the light hogs, and these descriptions are bringing a handsome premium over the heavy lots, which are discriminated against by the packers and others. The bulk of the hogs sold on the Chicago market go at a range of about \$1.00 per hundred pounds, the best light bacon hogs selling about fifty-five cents above the best heavy butchers. Pigs are not being marketed very freely and sell at good prices when weighty. Insufficient recent receipts of hogs caused good advances, with prices the highest seen since the middle of February. Hogs have been selling much lower than one and two years ago, but far higher than in other years. Hogs were selling one year ago at \$16.50@17.75; two years ago at \$15.75@17; three years ago at \$13@13.90, and four years ago at \$8.55@9.20. Recent receipts for a week were the smallest in number since the last week of October, being 98,000 less than a year ago. Hogs arriving on the market have been averaging 230 pounds, being six pounds heavier than the average for the past nine years.



Dr. Hess Stock Tonic A Spring Conditioner and Worm Expeller

Spring Is Here. Soon the litters of pigs will be coming, the calves, the lambs and the colts will be dropped. Feed your brood sows Dr. Hess Stock Tonic before and after farrowing. It makes the bowels active, relieves constipation, promotes good health and good digestion which means healthy pigs and a mother with a milk supply to nourish.

Condition your cows for calving by feeding Dr. Hess Stock Tonic before freshening. Then feed it regularly to increase the flow of milk. It lengthens the milking period.

Give your brood mares a course of Dr. Hess Stock Tonic. And your work horses. It puts your team in fine fettle. You cannot afford to plow, harrow, sow, mow, reap or team with a team out of sorts, low in spirits, rough in hair, blood out of order, or full of worms.

Dr. Hess Stock Tonic is good for sheep—especially good for ewes at lambing time.

Why Pay the Peddler Twice My Price?

You buy Dr. Hess Stock Tonic at an honest price from a responsible dealer in your town. Get 2 lbs. for each average hog, 5 lbs. for each horse, cow or steer, 1 lb. for every sheep. Feed as directed and see the good results. Guaranteed.

25-lb. Pail, \$2.25; 100-lb. drum, \$7.50

Except in the far West, South and Canada

Smaller packages in proportion

DR. HESS & CLARK, Ashland, Ohio



**Dr. Hess Poultry
PAN-A-CE-A**
will help make
your hens lay
now.

Dr. Hess Instant Louse Killer Kills Lice

Let your children do the skimming with a Viking



They will enjoy this task—the machine runs so easily and smoothly. They can take the VIKING apart and clean it too—there are no clumsy, heavy parts to handle. Where there's a VIKING—skimming time is play-time.

Dept. 8D.
Swedish Separator Company
507 S. Wells St., Chicago, Ill.

Fistula & Poll Evil

Approximately 10,000 cases are successfully treated each year with
Fleming's Fistoform
No experience necessary; easy and simple; just a little attention every 5th day. Price \$2.50 a bottle (war tax paid)—money refunded if it fails. Send for free copy of FLEMING'S VEST-POCKET VETERINARY ADVISOR. Valuable for its information upon diseases of horses and cattle. 167 pages, 67 illustrations. Write today.
Fleming Bros., Chemists 232 Union Street, Chicago, Ill.

HORSES

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

Percheron Stallions and mares at reasonable prices; inspection invited.
F. L. KING & SON, Charlotette, Mich.

For Sale Black Percheron Stallion, 8 yrs. old, wt. 1900 lbs. good foal getter and a good worker.
H. WINKEL, Cocks, Mich.

Percherons Two Studs Gray and a Black Spanish Jack, young Shorthorn Bulls, Duroc Hogs
E. J. Aldrich, Tekonsha, Mich.

FOR Sale or Exchange Stallion weight 1900 lbs. good condition, sound, price \$5000. For further particulars write
Chas. Schneider, R. 1 Lenox, Mich.

Shire Stallion, Tonica Tom, 1287, bay with white points, weight 1800, 8 yrs. old. Priced to sell.
Warren H. Kennedy, 3555 Cloverlawn Blvd. Detroit.

Imported Belgian Stallion, 8 years old, ton horse, color Brown. Sure foal getter, and a real sire, sickness reason for selling.
E. G. Rose, Clare, Mich.

BELGIAN DRAFT HORSES

We have the best and largest herd in the world to select from, with Grand Champions heading our herd.

We won more premiums at the International Belgian Horse Show, Waterloo, Iowa, 1919 than any other breeder or exhibitor, competing against 25 exhibitors from Iowa, 3 from Indiana, 1 from Illinois and 1 from Canada.

We have sold 4 winners at the International Belgian Horse Show to an Iowa breeder. Those horses winning again at the International Live Stock Show at Chicago the same year.

We are listing mares of Iowa breeders and breeders from other states, to be bred to our Rubis 8004, whose offspring won at both Internationals this year, taking some of the highest honors in stallion and mare classes.

We can sell you a carload of stallions and mares or just one of either sex.

We invite your inspection and will meet you at any of the railroad stations if you will write us in time.

Come to Burt, Michigan, via Grand Trunk Railway or to St. Charles, Michigan, via the Michigan Central Railroad.

We are in the market for Registered Belgian Draft Colts

Owosso Sugar Company Prairie Farm

ALICIA, Saginaw County, MICHIGAN

Clover seed Alsike, Medium and Mammoth exceptionally fine quality and our prices are right, ask for Samples.
Wm. M. Monroe & Son, Bronson Mich.

Lee Union-Alls

that's the name that signifies the best-made, most popular work garment in America. Farmers who have tested it's comfort and wearing quality will use nothing else. But be sure you get a genuine LEE UNION-ALL. Look for the full name engraved on the buttons and remember it can't be a UNION-ALL if it isn't a LEE.

The H. D. Lee Mercantile Co.

Kansas City, Mo. Minneapolis, Minn. South Bend, Ind. Trenton, N. J.

Dept. No. 4693



TREATING FENCE POSTS.

I have about three hundred rods of fence to build and would like to know how to treat the posts so they would not decay so quick.

Montcalm Co.

A. K.

Replying to the above inquiry I would say first, see that these fence posts are properly dried and seasoned. If they are green posts which have been cut during the present winter, they will not be ready for treatment until about August, 1920, and must first be piled in open crib piles and exposed to free air until that time. When the air seasoning has been completed, they should be treated with creosote by the open-tank method, which is briefly as follows: Prepare two old steel barrels for tanks in such a way that they are connected by a two-inch iron pipe fitted with lock-nuts at the ends to each barrel. This pipe should be eight feet long, separating the barrels at least that distance apart. This pipe should enter the bottom of these barrels at a height of not more than two inches from the bottom of the barrel. The top, of course, may be removed to make these barrels of the open-tank type. Creosote may be purchased from the Barrett Company, of Chicago, Illinois, for this purpose. When ready to treat the posts, have the creosote on hand, place posts upright, butts down in both of these barrels until the barrels are full of these posts. Then empty the creosote into them until it comes within four inches within the top of the barrels around the posts. Then build a fire in the center of the pipe between the barrels so that the pipe will be heated, thus furnishing the heat to bring the creosote in the barrels to the boiling point or about two hundred degrees. After these posts have stood in this boiling creosote for about four hours, they should be allowed to remain until the creosote cools down. When it becomes cool, the posts may be withdrawn and fresh posts put in. This is the process of open-tank treatment. It is necessary in this treatment to leave the posts in the liquid until they cool down because it is the cooling process which drives the creosote into the timber. Considerable care should be taken to prevent the boiling over of the barrels so that the creosote will not get into the fire because it will burn, although it is not explosive in any way. This process has been covered in detail by the Michigan Farmer at different times in the past.

F. H. S.

BREEDERS' DIRECTORY

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

Wildwood Farms Angus

Home of Edgar of Dalmeny one of the world's greatest sires. He produced Erodemas, the grand champion bull at show in Perth, Scotland in Jan. 1919, and He produced Blue Bell a cross-bred heifer which was awarded the championship at the Smithfield, (Eng.) fat stock show in Dec. 1919 (The latter is England's equivalent of our Chicago International.)

Edgar is now an American Citizen, and is here for the purpose of bettering the breed in this country.

Edgar's calves are as yet too young to offer for sale but they are a promising lot and are being spoken for fast.

We have a few choice young bulls by Black Monarch III who won the Mich. State Fair Grand Championship in 1914-1915-1916, still for sale.

Our herd is under State and Federal supervision A visit will interest you, write for particulars.

WILDWOOD FARMS
ORION, MICHIGAN

W. E. SCRIPPS, Prop., Sidney Smith, Supt.

WOODCOTE ANGUS

BREEDERS OF MANY
INTERNATIONAL WINNERS
INCLUDING THE
UNDEFEATED CALF HERD OF 1919
Write for 1920 Bull sale list.
WOODCOTE STOCK FARM, IONIA, MICH.

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

GUERNSEY bull calves whose sire's dam made 19,460.20 milk, 999.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.80 fat. T. V. HICKS, Battle Creek, Mich.

GUERNSEYS



\$546 was the average price paid for all Guernseys sold at public auction in 1919. This figure indicates the buy.

ers' high estimation of the value of the breed. Let us tell you why Guernseys lead in popular favor.

The American Guernsey Cattle Club, Box 140, Peterboro, N.H.



GUERNSEY BULLS FOR SALE

Atta Boy of Maple Crest born April 1919. Sire Imp. Spotswood Sequel A. R. 19 A. R. daughters Dam imp. Albina price \$175.00. Pride's May King of Avondale born June 1919 Sire Nora's May King of Bailey Falls dam Queens Pride of Harrison A. R. price \$150.00.

Avondale Farms, Wayne, Mich.

Registered Guernseys

A nicely marked four months old bull calf. F. E. ROBSON, Room 307, M. C. R. R. Depot Building, Detroit, Michigan.

Guernseys Federal inspected herd. Bull 2 yrs. old g. son of Imp. Spotswood Sequel; dam's A. R. record 49.34 b. f. class G. Bull calf 8 mo's. old, 6 bull calves 2 to 5 mo's. old. Satisfaction guaranteed G. W. & H. G. Ray Albion, Mich.

GUERNSEYS

Two fine bull calves for sale, by our A. R. May Rose Herd Sire. Priced to sell. Send for pedigree and description. GILMORE BROTHERS, Camden, Mich.

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

Registered Guernseys We are breeding better Guernseys. Extended Pedigree of our Herd Bull to any one except the Postal Card Man. If you want better Guernseys - we have them. J. M. WILLIAMS, North Adams, Mich.

Guernsey Bull Calf, Linded of Walter Phipps Farm. Born May 2-1919. \$100.00 f.o.b. Novi or Birmingham, Walter Phipps Farm, 80 Alford St. Detroit, Mich.

For Sale Registered Guernsey bull calves, also 2 young cows May Rose breeding cheap if taken soon. John Ebels R 2, Holland, Michigan.

Facts in BLACK & WHITE

Most Wonderful Cow in the World

Tilly Alcartra, a purebred Holstein-Friesian in 365 consecutive days produced 33,424 8 pounds of milk, or over 16 tons. In two years she produced 60,278 pounds of milk. Holstein cows hold all world's records for milk and butterfat production, but the claim of the Holstein breed to the title of the "Most Profitable Dairy Breed" is not based on individual tests. It is the great uniformity of high productiveness of Holstein cows everywhere that makes them the greatest moneymakers for dairymen, the world over.

Send for our booklets. They are free.

THE HOLSTEIN-FRIESIAN ASSOCIATION
164 Hudson Street
Brattleboro, Vermont

GRADE UP YOUR HERD

with a young son of Spring Farm Pontiac Cornucopia 18th, whose five nearest dams have an average record of 35.22 pounds of butter in seven days. Have several priced to sell.

JOSEPH H. BREWER, Grand Rapids, Michigan

LONG DISTANCE

Holstein calves of either sex. Can spare a nicely marked heifer backed by seven dams that average above 1200 lbs. butter and 2400 lbs. milk in one year. Choice Duroc Sows. A. FLEMING, Lake, Mich.

BEST TIME TO APPLY LIME.

Labor conditions last fall prevented me from putting lime on my wheat ground. Would it be practical to put lime on this spring, and if so in what form, hydrated or ground limestone rock?

Calhoun Co.

A. E. X.

It will be just about as satisfactory to apply your lime early this spring on the ground after it is plowed, working it into the soil in preparing the land as it would had you spread it last fall.

It matters very little whether you use hydrated lime or ground limestone but you must apply ground limestone in larger quantities because only a portion of the ground limestone is sufficiently fine so that you will get quick action in the soil. If you use hydrated lime, probably five hundred pounds to the acre, it will correct acidity for this crop, while if you use ground limestone you should apply at least one ton to the acre, but this ton of ground limestone will not only have a sufficient amount fine enough to give you immediate results, but the balance of it, which is coarser, will be a benefit for several years to come. On the other hand, if you use a small application of hydrated lime, in another year or so you ought to use it again.

C. C., L.

FEED PRICES AND PROSPECTS.

(Continued from page 402).

under the spot market, while March offal has improved its position slightly. Millers still hold fairly liberal stocks of bran, but the future price trend will depend in a large measure on the current production. It is probable that the flour trade will improve, but this is not the immediate prospect.

Shorts have held on a narrow basis for some weeks, and the jobbing trade which bought heavily late in January and early February in anticipation of a heavy spring demand are taking losses on some of their contracts. Hog producers are entering the market slowly, and are not particularly eager for the wheat feed, and present prospects indicate a much lighter demand from this source than usual at this season. Flour middlings or gray shorts are holding around \$54 a ton at Minneapolis, about \$53 to \$54 in Chicago, \$49 to \$52 in St. Louis, with Kansas City quoting the offal at \$46 to \$47 a ton. Brown shorts are available in the northwest at a discount of about \$6.00 a ton, though in winter wheat markets the difference is hardly more than \$2.00 to \$3.00.

Depression in the high concentrate feeds and other commodities, including alfalfa hay, which is a close competitor of bran, seemingly would have a bearish influence on the mill offals. This ultimately will be the case; in fact, shorts already reflect softness because of the losses in corn, cottonseed feed and other grains. Certainly, it is not a time to become bullish on the wheat feeds.

Dairymen are able to make purchases of alfalfa hay at a lower level than in months. Continued enormous marketings of hay from the west have at last had a depressing influence on the trade, and some grades of alfalfa are selling at a decline of \$12 a ton from the high point in January. The better grades of pea-green and leafy alfalfa which the dairy trade calls for, have declined around \$2.00 to \$4.00 a ton, being in comparatively small supply on markets. The bulk of the alfalfa moving from the west is made up of the common and damaged offerings, and demand for these grades has fallen off rather sharply. Indicative of the abnormal position of the cheaper grades is the fact that an extreme difference of \$22 a ton prevails between the common and best offerings, choice alfalfa bringing \$36 a ton in Kansas City, the leading forage market, and the cheap grades down to \$14 a ton. Normally the difference is about \$5.00 a ton or even less. While the better grades are rather scarce and holdings in the country are light, pressure from the cheaper offerings is expected to depress the market further. Heavy receipts are expected to continue for some weeks yet, cars being in slightly freer supply.

Michigan, while not an important buyer, made heavier purchases of alfalfa in the southwest and west the past month. Sales to the southeast and east fell off rather sharply, owing to continued heavy buying for some months by that section and the rather mild weather over the south. An important development concerning the situation in Michigan is the fact that handlers of hay in this state have been forced to turn to Kansas City to fill their requirements for eastern and southern trade. Recent severe storms over the east virtually halted the movement of hay in the east and central states. This, coupled with the short production of clover and other tame hay, accounts for the strength of these varieties. Clover is bringing around \$31 to \$32 a ton in Detroit, with the St. Louis market ranging from \$32 to \$38. Thus far clover and timothy have not been appreciably af-

(Continued on page 445).



Your Stock Need Help—

it's freshening, farrowing, and plowing time. Get maximum returns in work, growth and production. Tone up the animals' systems, rid them of worms, condition them for the big season ahead.

We guarantee Dr. LeGear's Stock Powders to Put Your Stock in Tip-Top Shape

more effectively and quickly. Bigger, better gains from packer stuff, better milk yield from your cows, better condition of draft stock inevitably result from the use of this remedy. For twenty-seven years, Dr. LeGear has used his own prescriptions in his work as a practicing graduate veterinarian. **Dr. LeGear's Stock Powders** are sold on a money back guarantee that results will satisfy you. Your dealer is authorized to refund your money if they do not do all that is claimed for them. See your dealer today—get a package—always keep a supply on hand. Sold by over 40,000 dealers, never by peddlers.

Dr. LeGear's Poultry Prescription keeps hens healthy, insures winter eggs and better profits for you.

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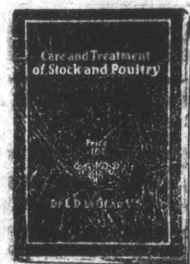
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New Stock and Poultry Book

128 pages

Just completed. A most comprehensive treatise on the care and treatment of Stock and Poultry. Written by Dr. LeGear after 27 years experience as a practicing graduate veterinary surgeon, and poultry expert. Send 10c to us today—we will mail it postpaid.



Buy A Holstein Sire

How would you like to own a full brother to a 24.78 lb. Junior 2 yr. old out of a 26.39 lb. dam, sired by a 32.43 lb. bull with good breeding all around him? He is 5 months old, well grown and a dandy.

First check for \$350 buys him; also 3 other A. R. O. bulls as nice as you ever see.

LAKE SIDE DAIRY
Lake Odessa, Mich.
Great Auction Sale
of Registered Durham
Cows, heifers, calves, bulls.

Just east of Hadley village,
FRIDAY, MARCH 19th.

Frank Hartwig
Mail to METAMORA, MICHIGAN

Holstein-Friesian Cattle

Herd Headed by Segis Pontiac De Nijlander

A 32-lb. grandson of Michigan's great 35-lb. champion. His dam, Oak Valley Korndyke Beets Segis Fan, 32.06, is also a Michigan prize winner. Write for calf list. Wah-be-me-me Farms, White Pigeon, Mich.

The Traverse Herd

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

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

4 Nearest Dams 32.46 lbs.

Bull Born November 14, 1919

Color—nearly half and half.

Sire's Dam: - Butter 7 Days 32.32; Milk 7 Days 552.40; Average per cent Fat 4.68.

Sire's Sire's Dam: - Butter 7 Days 40.32; Milk 7 Days 610.20; Butter 30 Days 165.22; Milk 30 Days 2695.8.

Dam: - Butter 7 Days 26.61; Milk 7 Days 532.9.

Dam's Dam: - Butter 7 Days 30.59; Milk 7 Days 565.00; Butter 30 Days 124.19; Milk 30 Days 2426.6. She heads a combination of three direct generations of thirty pound cows.

Price \$750.00 f. o. b. Howell.

McPherson Farms Co., Howell, Mich.
Herds under U. S. Supervision.

A BULLY GOOD BULL CALF.

Born July 1919. His sire nearest dams have good yearly records. Amongst them are three world's records. Good individual, nicely marked, and worth in any good herd all he will cost. You can't pay too much for this kind. I have a fine four months bull, not quite so well bred but a nice one.

L. E. CONNELL

Fayette, Ohio.

A Real Bull

Young bull nearly ready for service from a 19 lb. jr. 3 yr. old daughter of Alcartra Pontiac Butter Boy (130933). The heifer has a 31 lb. dam she also has a 31 lb. sister who has a 33 lb. daughter that gave over 100 lbs. of milk a day.

Write for pedigree.

SINDLINGER BROS.

Lake Odessa,

Mich.

King of the Pontiacs and King Segis

Bull calf born Dec. 10th. 1919. Sire: from son of King of the Pontiac whose dam is 33 lb. daughter of King Segis. Sire's dam Bucca Lassie Jean Butter 33.05 Milk 721.

Dam. Fine large cow now on test making 23 lbs. Price \$150.00 if sold at once.

A. W. COPLAND, Birmingham, Mich.
Herd under state and federal supervision.

Winnwood Herd

—SENIOR HERD SIRE—
Flint Maplecrest Boy (166974)

4 years old and weighs 3000 lbs. We have a few of his sons ready for service and some little fellows straight as a line and priced right the daughters of Flint Maplecrest Boy are making good.

—JUNIOR HERD SIRE—

Sir Ormsby Skylark Burke (249 66)
A brother to the world champion cow over all breeds (Duchess Skylark Ormsby) 1506 lbs. of butter in one year. He is the best bred Ormsby bull in Michigan his dam a daughter of King Segis Pontiac she is a sister to King Segis Pontiac Count and the \$50,000 bull King Segis Pontiac Alcartra, we said get a better bull (we got ours) one of his sons out of a daughter of Flint Maplecrest Boy will make some herd sire.

JOHN H. WINN, (Inc.)
ROSCOMMON, MICH.

Bazley Stock Farm

YPSILANTI, MICH.

Offers 2 grandsons of KING OF THE PONTIACS, also 2 sons of A. R. O. granddaughters of KING OF THE PONTIACS.

Price \$100 to \$175

Herd under state and federal inspection. All bulls offered for sale are from A. R. O. cows. Address all correspondence to

JOHN BAZLEY,
319 ATKINSON AVE.
DETROIT, - - - MICHIGAN

GENRIDA FARM

OFFERS
BULL CALF, BORN DEC. 31, 1919
Sire: King Flint, who combines the blood lines of 2 families of 3 generations of 30 lbs. cows and 2 generations of 1200 lb. yearly record cows. Dam: Is a 21.34 lb. granddaughter of Johan Hengerveld Lad her dam having a 25 lb. record.
Walter Hill, Davison, Mich.

\$50 gets 99% white gdson Flint H. S. 27 lb. butter 561 lb. milk in 7 days. Maple O. K. H. his dam gave 1232 lb. butter 25106 lb. milk 1 yr. Terms M. L. McLAULIN, Redford, Michigan.

REGISTERED Holstein bulls sired by King Zerma Alcartra Pontiac, son of the \$50,000 bull; some from good A. R. O. cows. O. H. Giddings, Gohleville, Mich.

CLUNY STOCK FARM
A Semi-Official Bred Bull to Head
Your Herd
Maplecrest Application Pontiac No. 132652, heads
Our Herd
His dam's record is 1344.3 lbs. butter, 23,421.2 lbs. milk in 365 days, and 35,103 lbs. butter and 515.6 lbs. milk in 7 days.
One of his sons from our good record dams will carry these great blood lines into Your Herd.
For Pedigrees and Prices write to
R. BRUCE McPHERSON, Howell, Mich.

For Sale Reg. Holstein Bull, 3 yr. old kind and gentle. A grandson of Mich. Champion 35 lb. cow Pontiac De Nijlander and 34 brother to state champion Jr. 2 yr. old Pauline De Nijlander 26 lbs. butter, 437 lbs. milk. Two dams ave. 31.7 lb. butter and 684 lbs. milk and 130 lbs. of butter in 30 days. Also six choicely bred cows in calf to above bull.
J. TAYLOR GAGE, Manchester, Mich.

Holsteins of Quality

Five large heifers and some extra good cows bred to a grand son of May Echo Sylvia, also calves and yearling heifers. All Federal tested for Tuberculosis.

E. A. HARDY, Rochester, Mich.
Reg. Holstein cows and heifers priced reasonable. High class breeding. All bred to a 33 lb. and a 42 lb. Bull. Some fresh soon. B. B. Reavey, Akron, Mich.

Reg. Holstein Bull Calf born Feb. 1, 1920. Sires 13 dams ave. 31 lbs. Price \$100 Reg. and Del. would take Liberty bond. J. R. Hicks, R. 3 St. Johns, Mich.

To reduce my herd I am offering for sale a number of Pure Bred Holstein heifers and full age cows.
JOSEPH H. BREWER, Grand Rapids, Mich.

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

Bull calf born Apr. 27, '19. Sire's six nearest dams average 33.34 lbs. butter for 7 days. Dam is a 16.82 lb. 3 year old. Oscar Wallin, Unionville, Mich.

HARWOOD HEREFORDS

Young stock both sexes for sale.
"Keep On 508019" heads the herd. Write us your wants. Visitors welcome.

JAY HARWOOD, Ionia, Mich.
Farm six miles south of Ionia.

Herefords Special low price on the following for a short time. One four year old cow, due in spring. Two 2 year olds with calves by side. One yearling heifer. Three bull calves, about 9 months old, one polled, two horned, all well marked and good dark color.
COLE & GARDNER, Hudson, Mich.

HEREFORDS

3 Prince Donald, 3 Farmer and one Polled bulls from 7 to 13 months old, for sale.

ALLEN BROS.
PAW PAW, MICHIGAN

Herefords. Just purchased 3 new herds, now have 150 head: we offer you anything desired either sex, horned or polled, any age. Priced reasonable.
THE McCARTYS, Bad Axe, Mich.

Hereford Herd Headers only the upper crust retained, undesirables unselected, not the largest herd, but few as good. Come and see. Farm adjoins town. E. J. Taylor, Fremont, Mich.

SHORTHORN SALE

35 - HEAD - 35

Of Good High Class Shorthorn 26 Cows and Heifers, 9 Bulls

The heft of the females are safe in calf to good scotch bulls some with calves by side.
This sale will be held under the auspices of the Southern Michigan Shorthorn Breeders Association.

Hillsdale, Mich. Fair Grounds Tuesday, March 16, 1920.

For particulars and catalogues address
John Southworth, Sec., Allen, Mich.

Andy Adams and Scotty Milne,
Auctioneers.

MICHIGAN JERSEYS

Michigan is an ideal place for the raising of Jersey Cattle and there are no better cattle for dairying than Jerseys. Jerseys mature early, live long, produce persistently, give the greatest amount of butter-fat obtainable from every pound of feed. They are hardy and vigorous, always on the job and the greatest mortgage-lifters that ever entered a barn.

Michigan should have more Jerseys and the Jersey breeders of the state are anxious to cooperate with anyone who is interested in successful dairy farming.

MICHIGAN JERSEY
CATTLE CLUB

ALFRED HENRICKSON,
Sec'y-Treas. SHELBY, MICH.

The Wildwood Farm

Jersey Cattle, Majesty strain. Herd on State accredited list, R. of M. testing constantly done. Bulls for sale. ALVIN BALDEN, Phone 143-5, Capac, Mich.

Maple Land Register of Merit Jersey Herd. Bulls ready for service out of R. of M. dams and sired by one of the best grandsons of Pogos 99th of Hood Farm.
IRVIN FOX, Allegan, Mich.

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

FOR SALE Jersey Bulls ready for service R. of M. ancestors. Raleigh-St. Lambert breeding. Jerseys stand for economy. Waterman & Waterman, Packard Rd. Ann Arbor, Mich.

LILLIE Farmstead Jerseys—A few heifers bred to freshen soon, heifers bred to freshen next fall, 3 cows, R. of M. bull calves. O. C. Lillie, Coopersville, Mich.

Bulls ready for service from our herd bull Marguerite B. Premier, gdson. of Pogos 99th of Hood Farm, and cows now on test for R. of M. Smith & Parker, Howell, Mich.

FOR SALE, half interest in beautiful herd bull Sire, Raleigh Dam R. of M. made 824 lb. butter, also young bulls. Geo. E. Walker, Grand Rapids, Mich.

For Sale Registered Jersey cows and heifers. 40 head to choose from.
H. C. WHIPPLE, Augusta, Michigan.

Jerseys, Registered stock, bull calves 15 to 30 dollars according to age and breeding, also some females. Choice breeding. Ten Haver Farm, R. 2 Holland, Mich.

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

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Max Watson Sulton and White Hall Sulton. Model Type, by the Oscola Co. Shorthorn Breeders Ass. John Schmidt, Sec. Reed City, Mich.

Branch County Farm breeders of American Polled Grand Champion bull, Sultan's Standard, son of Sultan Creed. For sale choice young bulls & heifers priced to sell. Address G. E. Burdick, Mgr., Coldwater, Mich.

SHORTHORN DISPERSION

As we are forced to leave the farm we will sell our entire herd at

PUBLIC AUCTION March 30, '20

10 choice cows and heifers. One young bull. To the prospective buyer, this is the place to get big beefy stock with the right kind of breeding at your own price.

Write for catalog.
N. C. THOMAS, Auctioneer.
L. H. Leonard, Owner, Caledonia, Mich.

We also have a few choice pure bred Belgian mares and Stallions at private sale.

BIDWELL SHORTHORNS

For Beef and Milk

Registered bulls, cows and heifers. Good Scotch and Scotch-Topped for sale. In prime condition. Modern sanitary equipment. Herd under state and federal supervision. Farm 10 minutes from N. Y. O. depot. 1 hour from Toledo, Ohio. Automobile meets all trains. Write

BIDWELL STOCK FARM

Box B, Tecumseh, Mich.

Richland Stock Farms

Home of the Michigan Champions.
Shorthorn Sires in Service:

IMP. Lorne, IMP. Newton Champion, Sterling Supreme. Why not buy a young bull to head your herd that carries the blood that is making Shorthorn History. Only a few real headers left. Write your wants.

C. H. PRESCOTT & SONS, Tawas City, Mich.

Shorthorns Good Scotch bred bulls, cows and heifers priced right.
W. B. McQUILLAN, R. 7, Howell, Mich.

Royal Bruce 19521 heads our herd. Three half brothers sold for \$55,000.00 one Cluny Proud Augusta going to head Wm. Duthies of Collyne's herd at \$21,000.00. One bull and a number of females for sale.
CARR BROS. & CO., Bad Axe, Mich.
Norman Carr, Secretary.

Shorthorns For Sale. Two reg. bulls 10 and 13 mos. old, color red, and red with a little white, Bates strain, will crate and ship, satisfaction guaranteed or money refunded.
WM. D. McMULLEN, Adrain, Mich.

MEADOW Hills Shorthorns. Herd headed by Silver King, full brother of Lavender Sultan Purdue University's great sire. For sale females of all ages, a few young bulls. Geo. D. Doster, Doster, Mich.

Milking Shorthorns of best Bates breeding. Nothing for sale at present.
E. H. KURTZ, Mason, Mich.

Central Mich. Shorthorn Breeders Assn. offer 40 bulls, 38 females, write for new list.
OSCAR SKINNER, Sec. Gowen, Mich.

The Kent Co. Shorthorn Assn. have males and females of quality for sale. L. H. LEONARD, Sec., Caledonia, Mich.

FOR SALE Registered Shorthorns of good milking strain. Bull Roan three years old, bull calves 2 to 6 months. Chas. Warner Jr., R. 4, Inlay City, Mich.

Two Scotch Shorthorn bulls also heifers for sale.
JAMES NEAD, Sunfield, Mich.

HOGS

Registered Berkshire Boars, ready for service. A few gilts and sows bred for May and June farrow. Also spring pigs. CHASE STOCK FARM, Marlette, Mich.

BERKSHIRES both sex and Aberdeen-Angus bulls 8 1/2 to 12 mo. old a very fine lot priced reasonable.
RUSSELL BROS., R. 3, Merrill, Mich.

Duroc sows and gilts bred to Walts King 2349, who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list.
NEWTON BARNHART, St. Johns, Mich.

Walnut Hill Durocs June farrowed boars ready for service. From Tra Jackson and Brookwater stock, also bred gilts and sows of all ages for Mar. and Apr. farrow, priced right and registered in buyer's name. Write
JOHN C. DEAN, R. 1, Mason, Mich.

DUROC-JERSEYS

A few extra good bred sows and gilts for sale.
OAREY U. EDMONDS, Hastings, Mich.

DUROC JERSEYS

Bred Gilts for March and April farrow. Write at once for description or come and see them. Satisfaction guaranteed with every order.
RUSH BROS. OAKWOOD FARM, Romeo, Mich.

Michigana Farm offers some exceptional values in bred gilts. Also in tried sows. These are guaranteed to give satisfaction and they will ship on approval to responsible parties. They breed and sell good Durocs.
O. F. Porter Mgr. Pavilion, Mich.

ROYAL BRED GILTS

Dams sired by Michigan Cherry Col. Bred to Jacks Cherry Orion King, No. 169239. Son of the \$10,000 champion, Jacks Orion King 2nd, all high class stock, write for prices. The Jennings Farms, R. 1, Bailey, Mich.

DUROC JERSEYS

Gilts bred for March and April farrow, A Guarantee back of every Sow Sold.
F. J. Drott, Monroe, Mich. R. 1.

DUROC JERSEYS

E. D. HEYDENBERK, Wayland, Mich.

Duroc bred sows and gilts sired by Orion Cherry King Col. 2nd, bred to All Col. of Sangamo 2nd. First class lot, reasonable. W. C. Taylor, Milan, Mich.

DUROC GILTS. Bred and open. Real ones at fair prices.
BOARDMAN FARMS, Jackson, Michigan.

DUROCS for Sale Bred sows and fall pigs of both sex and a car of grade draft colts.
CHAS BRAY, Okemos, Michigan.

Chester Whites, spring and fall stock for sale either sex. At Saginaw fair we won highest honors against strong competition.
F. W. ALEXANDER, Vassar, Mich.



Raise Chester Whites
Like This
the original big producers

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

O. I. C. and Chester White Swine

Strictly Big Type with quality. Spring pigs of March and April farrow. A choice lot of boars. Will only spare a few more gilts at present. Will ship C. O. D. and record them free.
Newman's Stock Farm, Marlette, Mich. R. No. 1.

O. I. C's. Last spring boars all sold. Have an extra good lot of last spring gilts, good fall pigs not akin. Good stock, registered free, 1/2 mile west of Depot.
OTTO B. SCHULZE, Nashville, Mich.

O. I. C. and Chester White Swine booking orders for spring pigs from big type blood lines. Fall pigs with size and quality. I ship C. O. D. and register in buyer's name. John C. Wilk, Alma, Mich.

O. I. C's Am offering a few September pigs that combine size and quality.
C. J. THOMPSON, Rockford, Mich.

O. I. C's. Big type gilts, fall yrs., tried sows, Mar. Apr. farrow. Summer and fall pigs. I pay exp. reg. free, satisfaction guaranteed. G. P. Andrews, Dansville, Mich.

O. I. C. Gilts bred for March and April farrow. I pay express and register in buyers name.
H. W. MANN, Dansville, Mich.

O. I. C's Have some Choice Spring Gilts, bred for spring farrow.
THAYER BROS., R. 1, Mason, Mich.

O. I. C. Gilts bred for March and April farrow, guaranteed safe with pigs. Fall pigs and a few service boars. Herd immuned by D. T. F. C. Burgess, R. 3, Mason, Mich.

O. I. C. choice gilts bred for March, April and May farrow and fall boars. Am booking orders for spring pigs. A. J. Barker & Son, Belmont, Mich.

FEED PRICES AND PROSPECTS.

(Continued from page 443).
fected by the weakness in alfalfa, although this is probable.

Feed markets are in a somewhat more nervous position than usual at this time of the year. In a large measure, the erratic action of corn and the uncertainty surrounding the fluctuations in the coarse grain are an important factor. The trade is inclined to establish a more definite view on corn before extending commitments, but the day-to-day fluctuations make the market's position seemingly more obscure. The heavy winter movement has not materialized, the government preferential grain loading order was a failure, owing to insufficient cars available in the interior, and naturally the market maintains firmness. But demand for corn is limited, and feeders are buying on a narrow scale. Abundance of the sorghum grains in the southwest restricts demand from that section. Prices are holding around \$1.50 a bushel for the better grades. The approach of the germinating season is causing fear among some interior dealers over possible heating of corn in elevators, and more willingness to market is evident. The elimination of the rule limiting trading by any individual in lots of more than 200,000 bushels in corn futures has been bullish on corn, though only temporarily, the speculative element taking advantage of the strained car situation to enhance values. Practically all the speculators who have been boosting the price of corn futures admit that, aside from the car situation, which will doubtless right itself, the position of the market for that grain is bearish.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Thrush.—Have a three-year-old filly that is troubled with thrush, caused from lack of care, but she has had good care for twelve months. Some recommend blue stone solution, others butter of antimony. C. W. A., LeRoy, Mich.—Keep her feet dry and clean, apply calomel once a day.

Lumpy Jaw.—Have a cow with lumpy jaw. What is best to do for it? Would her milk be fit to use? E. M. D., Emmett, Mich.—If it is not bony, cut out bunch, or apply one part red iodide of mercury and four parts of lard to the bunch every ten days. Give her one dram of potassium iodide twice daily. If bunch is not suppurating her milk can be safely used.

Fracture.—When driving my old mare in deep snow she went lame. A swelling of coronet followed, which remains. She bears no weight on foot. Have applied liquid blister, this failed to help her. A. B., Highland, Mich.—I am inclined to believe she fractured bone of foot, or lower pastern. Keep her quiet and if possible apply a plaster of Paris bandage. Her recovery is doubtful.

Pinworms.—Will you tell me what to give a horse that is troubled with pinworms? E. M. S., Holton, Mich.—Mix equal parts of dried powdered sulphate of iron, salt, fenugreek and gentian together, then give a tablespoonful at a dose in feed daily. Santonin and calomel are excellent to destroy worms, but are more expensive. After washing out rectum with soap and water, use salt and water, one ounce of salt in a gallon of tepid water, or use one part coal tar disinfectant and fifty parts water.

Lymphangitis.—Weakness.—I have a horse that is inclined to be troubled with lymphangitis. In order to ward off future attacks I never feed him grain, unless he is working. In the morning his neck and shoulder is wet with perspiration. Have been giving him commercial remedies. C. B. L., Vanderbilt, Mich.—Give him 60 drops of fluid extract of nux vomica and a half ounce of Fowler's solution at a dose in drinking water three times a day. Also give a teaspoonful of acetate of potash daily. His stable should be well supplied with fresh air and ventilated.

HEADLIGHT OVERALLS

UNION MADE

OUTWEAR TWO ORDINARY PAIR

Their Guaranteed Service Cuts the Price

When we guarantee Headlights to outwear two pairs of ordinary overalls, we are virtually cutting the price—assuring you double wear for one purchase price.

Headlights are more comfortable, too, because of their roominess.

LARNED, CARTER & CO., DETROIT
World's Greatest Overall Makers

Factories: Detroit (St. Louis San Francisco)
Port Huron, Mich., and Perth Amboy, N. J.
Canadian Factory: Toronto, Ontario

(39)



Brookwater Duroc Jersey Bred Sows

Attractive Prices During February

Our show herd has met successfully the strongest competition east and west. The grand champion sow and the grand champion pig at the Michigan State Fair for five consecutive years was shown by us.

We breed a type that proves profitable in the feed lot and wins favor at the big shows.

The bred sows we are offering are sired by, out of, and bred to high class individuals of these prize winning strains. Our prices are more reasonable than those of any other herd of equal prominence. By buying in Michigan you can see what you buy and save express.

We invite you to come to the farm and make your own selections. If this is impossible, write and tell us what you want. We will not have enough to supply the demand. Act promptly and save disappointment.

BROOKWATER FARM, R. 7, ANN ARBOR, MICH.

Herbert W. Mumford, Owner, J. B. Andrews, Manager

P. S. Some ready for service Jersey bulls by a double grand son of Royal Majesty out of Majesty's Iris. The Register of Merit Kind. You cannot afford to be without one.

THE FAMOUS O.I.C. SWINE

We have the undefeated Herd of the World. Winning premier breeder and exhibitor at every fair shown in 1919-1918-1917, including the following state fairs—Ohio, Michigan, Indiana, Illinois, Missouri, Kentucky, Tennessee, Oklahoma, New York, Alabama, Tri-state fair Memphis, and the National O.I.C. twice. Stock of all ages for sale. Registered free in the O.I.C. association. Order now. We will ship any of our stock on approval allow you to keep three days before you have to pay for it. You will be your own judge on your own farm.

CRANDELL'S PRIZE HOGS,

Cass City, Mich.

O.I.C.'s Choice bred gilts, 2 extra fine service boars, choice sows, pigs either sex or pairs, CLOVERLEAF STOCK FARM, R. 1, Monroe, Mich.

LOOK UP T. P. C. We are selling at a great sacrifice for the next 40 days extra good gilts to farrow in Apr. choice fall pigs to make room for our herd sows. W. BREWSTER & SONS, Elsie, Mich.

L. S. P. C.

2 choice spring boars and 2 nice fall boars left, a few extra nice gilts left bred for April farrow.

H. O. SWARTZ, Schoolcraft, Mich.

FOR Sale—Large Type Poland China Gilts, bred for April farrow. Inspection invited. Free delivery from Manchester. A. A. Feldkamp, R. 2, Manchester, Mich.

Poland Chinas sows bred for March and Apr. farrow. Large type with best of breeding. R. W. MILLS, Saline, Mich.

MILLER Meadows L. T. P. C. boars all sold. Gilts sired by General Jones and bred to our young boar Alaska, address CLYDE WEAVER, Coresco, Mich.

Boars also sows and pigs. Real Big Type Poland Chinas. Bred big for 25 years. Sired by Mich. B. S. ter by Giant Buster, litter 14 out of Mow's Miss Queen 2nd, some breeding, also by Butler's Big Joe by Rust's Big Joe, out of a Wonder Queen, and said. Write us your wants, we will treat you right, our prices are low. J. C. BUTLER, Portland, Mich.

BIG Type Poland Chinas. Sired by Smooth Masto don litter mate to the Ill. Grand Champion. The big boned, deep, long bodied kind at farmer's prices. Wah-he-me-me Farms, White Pigeon, Michigan

LARGE Type P. C. the largest in Mich. Spring boars now ready to ship. Boars for the breeders and boars for the farmers. Come and see the real large type with quality. Free delivery from Parma furnished visitors. Look up my exhibit at the Great Jackson Co. Fair, Sept. 8th. to 12th. expenses paid if not as advertised. W. E. LIVINGSTON, Parma, Mich.

Big Type P. C. sows bred to Le Big Bob & THIRTY Is Giant, fall pigs, none better, call or write. E. R. LEONARD, St. Louis, Mich.

Additional Stock Ads. on Page 447

FEW MANUFACTURERS KNOW AS HIRTH-KRAUSE DOES THE WEARING QUALITY OF THEIR SHOES

Hirth-Krause tan and prepare their own leather, buying the raw hides from Michigan farmers. They know the leather is good. They have scientifically treated it so that it is acid and water proof and will give long wear. This shoe is made by them complete "from hide to shoe."

Because Hirth - Krause shoes are made to fit perfectly the 26 bones of the foot, they not only give greater comfort than ordinary shoes, but also outlast them and keep their shape.

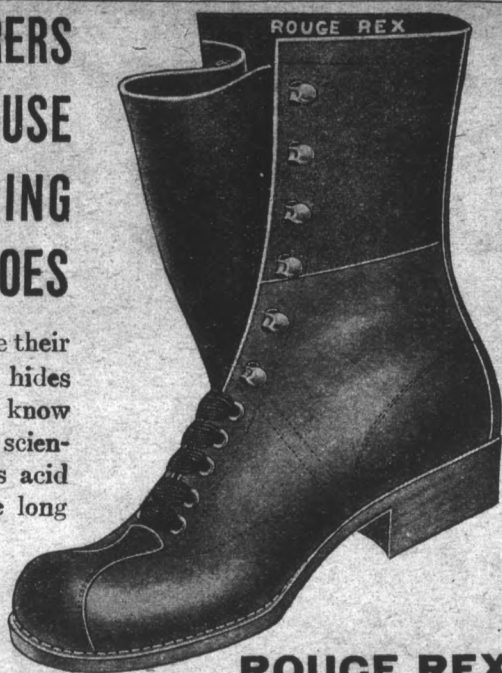
"For the man who works" this is the shoe, looks like an aristocrat, and wears like iron.

Good dealers every-
where sell more
mileage shoes.

Hirth-Krause
Shoemakers for three Generations
Shoes

Grand Rapids, - - Michigan

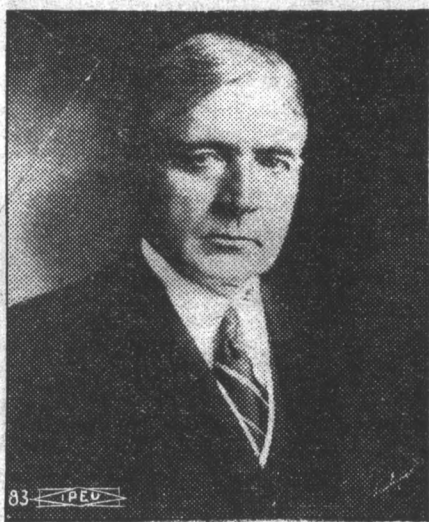
TANNERS AND SHOE MANUFACTURERS



ROUGE REX
(Red King)



More miles per
dollar.
More smiles per
mile.



**FRANK O.
LOWDEN**

Business Farmer

FOR

President

Born and reared on a farm. Educated himself through his own efforts. Sent to Congress for three terms. Elected Governor of Illinois. Reduced taxes in Illinois from 90c. to 60c. in two years on each \$100.00 valuation, and saved the State \$8,000,000.00. Passed the finest legislation for agriculture of any State in the nation.

LOWDEN

IS THE

**FARMER'S GREAT OPPORTUNITY
PRIMARY APRIL 5TH**

—Advertisement—

Market Reports

FIRST EDITION.

The markets in this edition were revised and corrected on Monday afternoon, March 8.

WHEAT

Values in this market have declined during the week. Receipts continue small but mills are taking government offerings. While flour sales are slow, there are more orders for feeds than the mills can fill. Detroit prices are:

No. 1 red	.....\$2.45
No. 1 mixed	.....2.43
No. 1 white	.....2.43
No. 2 red	.....2.42

CORN

Corn values took the opposite course from wheat prices and advanced nearly a nickel last week. Farmers do not appear to be alarmed over the situation and offerings from country points are small. There has been some investment buying which has taken considerable floating grain off the market. Resales in the east have caused a little depression among dealers. The improvement of foreign exchange gives hope of a renewal of active export business. Present Detroit prices are:

No. 3 corn	.....\$1.58
No. 3 yellow	.....1.62
No. 4 yellow	.....1.53
No. 5 yellow	.....1.53

OATS

Quotations have followed the upward trend of the corn market. The demand for oats as well sustained while receipts are generally light. On our local market consumption has been fairly large. Present Detroit prices are:

No. 2 white	.....97
No. 3 white	.....96
No. 4 white	.....95

RYE

The exportation of rye has given strength to the market and prices are up several cents, cash No. 2 now being quoted at \$1.72½.

BARLEY

This trade rules quiet but prices are higher, with cash No. 3 at \$3@3.25 per hundred pounds.

BEANS

No important changes have appeared in this trade and the market continues in the same slow and easy groove it has occupied for some time. Offerings continue fairly liberal and at some points supplies are excessive, while the demand is generally reported slow. On the Detroit market im-

mediate and prompt shipment are quoted by the board at \$6.75 per cwt. In New York holders of white beans are simply playing a waiting game. There is no export trade. Choice pea beans are quoted there at \$7.50@7.75 per cwt.

SEEDS

Clover seed advanced 50c on the local market, while alsike and timothy are unchanged. Prices are: Prime red clover, cash and March \$34; alsike \$35; timothy \$6.60.

FEEDS

Trading is active at last week's prices as follows: Bran \$51; standard middlings \$54; fine middlings \$58@59; coarse corn meal \$67.50; cracked corn \$68.50; chopped feed \$57@58.50 in 100-pound sacks.

HAY

While quotations remain about the same as a week ago, the supply of hay is increasing and the tone of the market is slightly easier. Quotations are: No. 1 timothy \$33.50@34; standard and light mixed \$32.50@33; No. 2 timothy \$31.50@32; No. 3 timothy \$27@29c; No. 1 clover \$31.50@32; rye straw at \$13.50@14; wheat and oat straw at \$13.50@14.

POULTRY

On the local market supplies are absorbed rather promptly and prices follow: Live spring chickens 35@38c; hens 33@40c; roosters 23@24c; geese main unaltered from last week as follows: 30@35c; ducks 40@45c; turkeys 44@45c per pound.

EGGS

Values are declining as the result of increased supplies from the south and west. Fresh eggs are jobbing here at 46@47c per dozen.

BUTTER

Markets are generally reported firm or higher. Dealers have probably over-emphasized the influence of imports on the American market. Production is fair and consumption about normal. At Detroit fresh creameries bring 63c; at Chicago 65c; and in New York 58½@65½c.

HIDES

Present quotations on hides on the Detroit market are as follows: No. 1 cured calf 55c; No. 1 green calf 55c; No. 1 cured kip 32c; No. 1 green kip 28c; No. 1 cured hides, 25 to 45 lbs 30c; 45 lbs and up 20c; No. 1 green hides 25 to 45 lbs 27c; 45 lbs and up 17c; No. 1 green hides 20c; No. 1 cured bulls 16c; No. 1 horsehides \$9.50; No. 2 horsehides \$8.50. Tallow, No. 1

Live Stock Market Service

BUFFALO

Cattle of all kinds are 50c higher here today. Lambs are steady and hogs are 15c lower. Best calves are selling for \$20.

DETROIT

Receipts 722. Canners steady; all other grades 50c higher. Best heavy steers\$11.50@12.00 Best handy wt bu steers... 10.00@11.00 Mixed steers and heifers... 9.25@ 9.75 Handy light butchers... 8.50@ 9.00 Light butchers 6.50@ 7.50 Best cows 8.00@ 8.50 Butcher cows 6.50@ 8.00 Cutters 5.50@ 6.00 Canners 4.00@ 5.00 Best heavy bulls 8.50@ 9.00 Bologna bulls 7.50@ 8.50 Stock bulls 6.50@ 7.25 Milkers and springers...\$ 65@ 115

Veal Calves.

Receipts 315. Market dull. Best\$20.00@21.00 Others 8.00@15.00

Sheep and Lambs.

Receipts 967. Market steady. Best lambs\$19.00@19.25 Fair lambs 18.00@18.50 Light to common 13.00@16.00 Yearlings 16.00@17.00 Fair to good sheep..... 12.00@13.50 Culls 6.00@ 8.50

Hogs.

Receipts 2,042. Market strong. Mixed hogs\$15.00 Pigs 15.65

CHICAGO

Estimated receipts today are 39,000; holdover 4,198. Early trade steady to 10c higher. Big packers doing little and talking lower. Bulk of sales at \$14.75@15.50; tops \$15.65; heavy 250 lbs up, medium, good and choice \$14.25

@15.15; medium, 200 to 250 lbs, medium, good and choice at \$15 @15.60; light 150 to 200 lbs common, medium, good and choice at \$15.20@15.65; light lights 130 to 150 lbs, common, medium, good and choice \$14.50 @15.40; heavy packing sows 250 lbs up smooth \$13.25@13.75; packing sows 200 lbs up, rough \$12.50@13; pigs 130 lbs down, medium, good and choice at \$13.50@14.75.

Cattle.

Estimated receipts today are 14,000. Market is strong to 25c higher. Beef steers, medium and heavy weight 1100 lbs up, choice and prime \$14.50@16; do medium and good \$12@14.50; do common \$9.75@12; light weight 1100 lbs down, good and choice at \$12.75@15.85; do common and medium \$9.35 @12.75; butcher cattle, heifers, common, medium, good and choice at \$7.35 @13.50; cows, common, medium, good and choice \$7.10@12.50; bulls, bologna and beef \$6.50@10.75; canners and cutters, cows and heifers \$4.75@7; do canner steers \$6@7.50; veal calves, light and handyweight, medium, good and choice at \$15.25@16.75; feeder steers, common, medium, good and choice \$8.50@11.25; stocker steers, common, medium, good and choice at \$7@10.65; do cows and heifers, common, medium, good and choice at \$7@9.25; do calves, common, medium, good and choice \$7.75@11.

Sheep and Lambs.

Estimated receipts today are 17,000. Market slow and steady. Lambs 84 lbs down, medium, good, choice and prime \$17.25@20; do culls and common \$14@17; spring lambs, medium, good, choice and prime \$16@18; ewes, medium, good and choice \$11@14.25; ewes, cull and common at \$6@10.75; yearling wethers, medium, good and choice \$15.75@17.

13c; No. 2 11c. Sheep pelts 50c@3.50; No. 2 hides 1c, and No. 2 kip and calf 1½c off.

CHEESE

Trading is about steady with last week, with some improvement noted, especially in the east. Michigan flats are quoted here at 27½@28c and single daisies at 29c. In New York whole milk flats sell for 28@31c.

POTATOES

Improvement in buying is reported from central western markets though price advances have hardly reflected the changed relation of demand and supply. Arrivals have generally been light. At Chicago last week there were received 180 cars, against 220 for the preceding week, and 202 for the corresponding week of 1919. The bulk of sales were made at \$5.20@5.25 per cwt. In Detroit sales are around \$8 per 150-pound sack.

GRAND RAPIDS

Wholesale dealers in beans cut the paying price to growers this week to \$5.75 per cwt for Michigan pea. Red kidneys still \$10, and very few moving. The price of loose hay at the city market declined to \$27 per ton this week. Indications are for a further decline. Potato market is very strong, with the Michigan Potato Growers' Exchange at Cadillac selling at \$4.85 per cwt in carlots. The total shipment of cars from Michigan thus far are 7,004 cars, compared with 6,111 cars at this time last year. Egg market is lower at 48c bid per dozen in case lots to producers. Cold storage men express the opinion that April eggs will go into storage a little under the price of last year. Hide market is still on the decline, a drop of five cents per pound for green hides being made this week.

NEW YORK PRODUCE MARKET.

Butter.—Large quantities of butter that had been delayed in transit arrived on market last week and buyers, feeling that so much butter might tend to cause prices to decline, curtailed purchases. The weakness that followed continued for the first three days of the week and butter prices slumped two cents. On Thursday and Friday the demand improved and a price recovery of one cent was made. A Danish steamer is due to dock today with 3,400 casks of butter, which will probably be available for the trade about Monday. Prices today are: Extras 63½@64c; higher scoring than extras 64½@65c; firsts 58@62½c; seconds 54@57½c.

Cheese.—There was a greater activity in the cheese market during the week and a more optimistic feeling prevails than has been in evidence for some time. There is no export demand, the better feeling having been caused by a greater domestic consumption. Quotations on held cheese are: Fair 23@27c; average run 28@29c; specials 29½@31c.

Eggs.—The egg market took a decided slump this week. The tone of the market is irregular and unsettled and the price tendency is undoubtedly downward. Quotations are: Firsts 52@53c; extra firsts 54@54½c; extras 55@56c.

Poultry.—The poultry market at the close seems very weak and irregular. The price tendency in all classes of poultry is downward. Quotations are: Chickens 23@26c; fowls 37@39c; old roosters 18@19c; turkeys 35@40c; ducks 35@40c; geese 20@22c.

STATE FAIR DATES SET.

The officers and directors of the Michigan State Fair Association, Detroit, announce that the Seventy-first Annual Exposition will be held at the Fair Grounds, September 3-12, 1920.

COMING SALES.

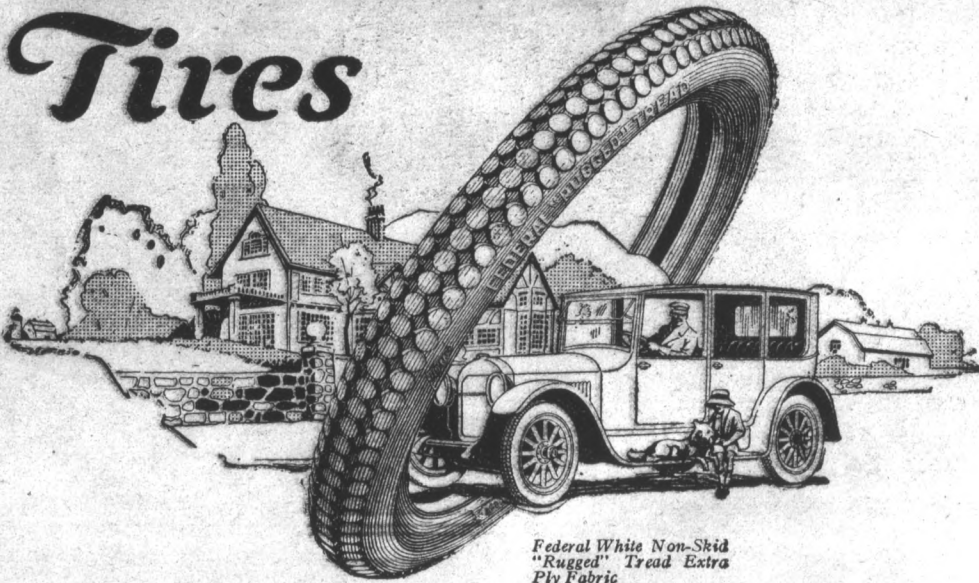
Shorthorns, March 13, 1920, Fred Carter, Vickeryville, Mich.
Angus, March 26, 1920, Michigan Aberdeen-Angus Breeders, Saginaw, Michigan.
Shorthorn, March 16, 1920, Southern Michigan Shorthorn Breeders' Association, Hillsdale, Mich.
Holstein, March 13, 1920, Webster W. Hardy, Oakville, Mich.
Shorthorns, March 19, 1920, Frank Hartwig, Metamora, Mich.

For Best Net Results
Ship to
CULOTTA & JULL
Detroit, Mich.

"Enough Said!"

FEDERAL

Double Cable Base Tires



Federal White Non-Skid
"Rugged" Tread Extra
Ply Fabric

The Proof That is Better Than Claims

We can tell you Federals give additional mileage—but, better still, prove it as thousands are doing every day by using Federal Tires.

The Double-Cable-Base prevents rim troubles.

Four steel cables hold the tire securely and prevent blow outs just above the rim, pinched tubes and all troubles caused by shifting tires.

The best test for Federals is to try them.

THE FEDERAL RUBBER COMPANY, of Illinois, Factories, Cudahy, Wis.

Manufacturers of Federal Automobile Tires, Tubes and Sundries, Motorcycle, Bicycle and Carriage Tires, Rubber Heels, Fibre Soles, Horse Shoe Pads, Rubber Matting and Mechanical Rubber Goods

MICHIGAN LIVE STOCK INSURANCE COMPANY

INDEMNIFIES Owners of Live Stock — Horses, Cattle, Sheep and Hogs
Against by Death or Accident Disease

308 Davidson Building, Bay City, Michigan

O. I. C. SOWS FOR SALE

One of the Best Herds in Michigan
Spring gilts and fall yearlings bred for March, April and May litters. I ship C. O. D., pay express and register in buyer's name. If you want a BIG TYPE sow, guaranteed right in every way, write me.
J. CARL JEWETT, R. 5, Mason, Michigan.

Mr. POULTRY FARMER:

We make a specialty of White Henery Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henery Whites—We remit same day shipments arrive. Ship Often—Ship by Express.

GEO. R. ELDRIDGE CO.
494-18th Street, Detroit, Mich.
Remember! We guarantee you satisfaction with every shipment.

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

First Annual Show and Sale

of the Michigan Aberdeen-Angus
Breeders' Association.

55 Head at Saginaw, March 26, 1920 55 Head
14 Bulls 41 Females

SHOW OF SALE CATTLE

The American Aberdeen-Angus Breeders' Association is co-operating with the Michigan Association in holding a show before the sale at which \$50 in cash prizes will be offered, in addition to a special prize of \$25 for the champion bull of the show. The Cream of Michigan's Leading Herds. Every animal carefully inspected to give buyers in opportunity to get foundation stock of quality. Watch for next week's announcement. Write for catalog to Ward Hathaway, Secretary, Ovid, Mich. Michigan Aberdeen-Angus Breeders' Association, Alex Minty, President.

Big Type Poland Chinas with quality, at reasonable prices. Pigs of both sex, and bred sows and gilts.
G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Big Type P. C. Bred gilts. Fall yearlings, prize winners, over 100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

Big Type Poland Chinas. Up-to-date in breeding, with size and quality. We like good ones and believe you do also. Have three choice gilts for sale, bred for April 7, 9, 10, respectively. Their sire at 18 months weighed 640 lbs., not fitted, and stood 40 in. tall, 78 in. long and on a 10 in. bone. They are bred to a great son of Mountain Giant. Write or come and see. You're always welcome. **WESLEY HILL, R. 6, Ionia, Michigan.**

B. T. P. C. spring Boars all sold. One Oct. 21st yearling boar, wgt. 425 lbs., as near perfect as any pig in Michigan. Price \$125. Gilts ready Jan. 1. Bred to a good son of \$10,100 Harrison's Big Rob. Every pig recorded free.
JOHN D. WILEY, Schoolcraft, Mich.

L. T. P. C. Spring gilts ready to ship also fall B. F. D. 6, Albion, Mich. Bell phone 345F11.

B. T. P. C. Gilts sired by Big Giant and O's Orange. Bred to O's Orange and Col. Jack Jr. No better breeding to be had. **L. L. Chamberlain, Marcellus, Mich.**

U. S. FIGURES SHOW

a shortage of 2,578,000 hogs, over Jan. 1, 1919. Just figure a moment what this will mean to the farmer. Constructive breeder of Poland China Hogs.
C. A. BOONE, Blanchard, Mich.

I am offering Large Type Poland China Sows bred to F's Orange, at reasonable prices; also fall pigs. Write or call Clyde Fisher, St. Louis, Mich. R. R. 3.

6th ANNUAL P. C. Bred Sow Sale March 13, 1920. For particulars write **W. J. HAGEMSHAW,** Augusta, Mich.

Large Type Poland China Stock Hogs and Bred **E. H. EISELE, R. 2, Manchester, Mich.**

Tamworths The great bacon breed. Some good registered gilts bred to March farrow. also fall pigs. **W. H. WARNER, Concord, Mich.**

A FEW NO. 1

Fall boar pigs left. Pairs not akin. A few tried sows bred. Booking orders for spring pigs. Large type, winning blood lines. Satisfaction guaranteed.

STEBENS HAMPSHIRE FARM

R. R. 3, Angola, Ind.

Pine Grove Hampshires, "Quality First" Michigan Boy, Grand Champion boar of Michigan, Bred and owned by us. Many other prize winners at Michigan State Fair 1919. Hog's for sale all ages, both sex. "Lookout Joe", a \$1000 boar heads our herd. **GEO. COUPAR & SONS, R. 1, Marlette, Mich.**

Bred Gilts all sold at present and more later. **JOHN W. SNYDER, St. Johns, Michigan.**

SHEEP.

Shropshires Registered ram lambs sired by Imp. Buttar. Also choice bred ewes. **W. B. McQUILLAN, R. 7, Howell, Mich.**

KIDS

I cannot sell you any more ewes until next fall. To some grown up, I can offer 10 very good young Shropshire ewes that will lamb in April for \$400.00. Their lambs contracted to me should not more than purchase price next fall. Also 10 mighty nice ewe lambs for \$350.00. Come and see them.
S. L. WING, KOPE-KON FARMS, Coldwater, Mich.

BUY A SHEEP

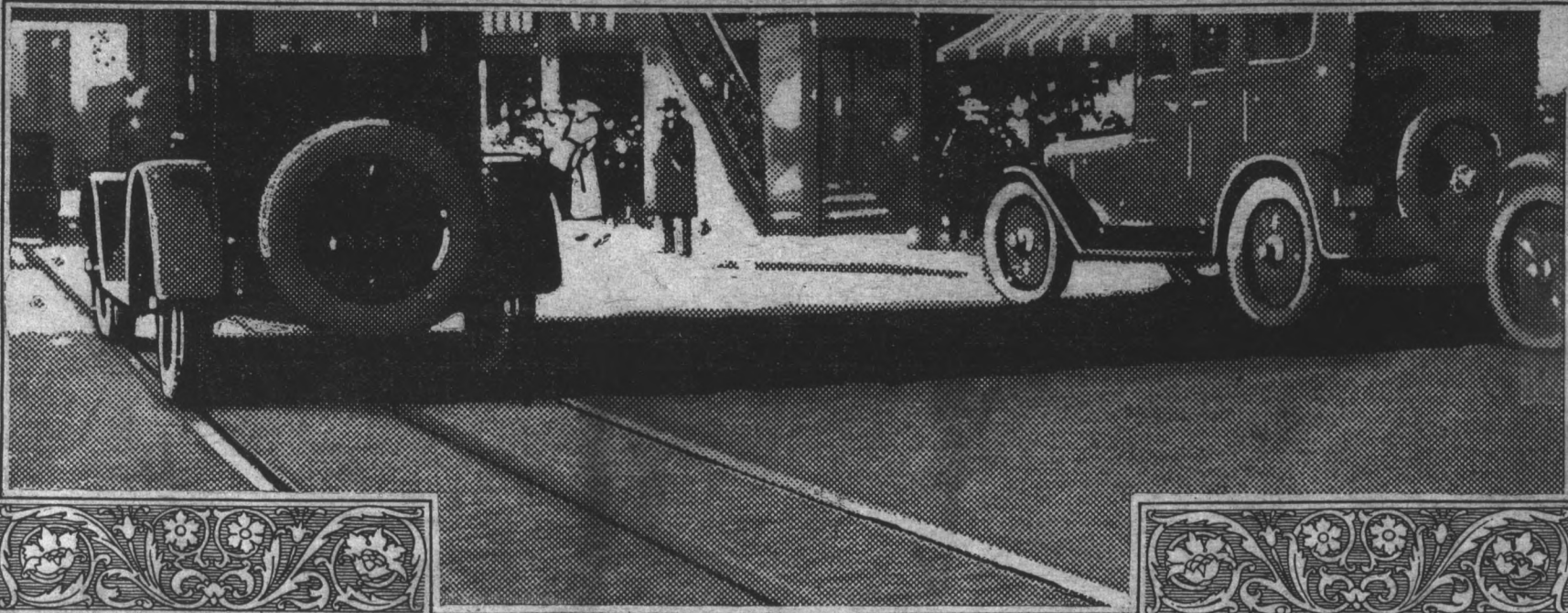
Wait a minute, buy Hampshires. The American Hampshire Sheep Association wants to send you a dandy little booklet with list of Breeders. Some near you. Write **COMFORT A. TYLER, Secretary, 22 Woodland Ave., Detroit, Mich.**

Idle Wild Stock Farms Shropshire yearling rams from prize winning stock. Make your selection early. **Cliff Middleton, proprietor, Clayton, Mich. R. 3.**

Registered Shropshire bred ewes, 1 to 3 years old. Large, healthy well fleeced representatives of this flock gave satisfaction in 15 states. Last season rams all sold. **O. Lemen, Dexter, Mich.**

Cotswolds ewes bred to one of Canada's best rams, start right buy good ones while they can be had. **A. M. BORTEL, Britton, Mich.**

Go to a Legitimate Dealer and Get a Legitimate Tire



THIS year the American people will spend more than \$900,000,000 for automobile tires.

Tires are one of the largest items in the motorist's budget.

The cost is making even careless buyers think and inquire.

And the more they inquire, the smaller will grow the influence of hearsay and the irresponsible tire dealer.

We have all met the man who takes his opinions readymade.

He tells everything he knows. He knows more about every car than the man who made it, where to buy the cheapest truck—how to get the biggest bargain in tires.

He always arouses a certain amount of wonder

in the unknowing. They never think to ask him where he gets his secrets.

"Somebody says" and "everybody does" are responsible for more wrong impressions about tires than anything else you can think of.

It is on the people who come under the influences of these phrases that the irresponsible dealer thrives.

You generally find him with the name of a standard tire displayed in his windows to give an impression of quality.

But when you get inside the first thing he begins to talk about is price and substitution.

Every time you drive your car along a track or a rut in a country road you are taking some life out of your tires.

Worn frogs and switches often cause small cuts, which are rapidly enlarged by the action of gravel and moisture. Ruts and track slots pinch the tire, wearing away the tread where their edges strike it.

It is well to avoid such places as much as possible.

What the thoughtful motorist is looking for to-day is *better* tires.

He goes to a legitimate dealer and gets a legitimate tire.

The *quality* idea—the idea of a quality tire, of a dealer who believes in quality—is commanding a greater respect from a larger portion of the motoring public all the time.

It is the idea on which the United States Rubber Company was founded—on which it has staked a greater investment than any other rubber organization in the world.

Build a *tire* that will *do more, a better tire than was built before*, and you are sure of a large and loyal following.

We have never been able to build enough U. S. Tires to go around.

United States Tires

United States  Rubber Company

Fifty three Factories

The oldest and largest Rubber Organization in the World

Two hundred and thirty-five Branches