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The Real Need of Michigan Agriculture

By C. B. COOK

County Agent for Oakland County

THIS article is written to suggest a point of view too often overlooked. It is the purely personal view of one who desires to see Michigan agriculture get and give a square deal.

Never was the American conscience so keenly aroused. Criticism on all hands is the regular bill of fare. All honest efforts should welcome constructive criticism and if it is made in kindness it is more readily understood and assimilated. In general it is safe to assume that the other fellow is honest and has for his ideals the general welfare. The more one can get his opponent's point of view and come to know his physiological deductions the easier factions unite on a constructive workable program.

The potato and labor conferences lately held at East Lansing illustrate how easy it is for people with the best motives and anxious to render a service, to possibly check rather than speed the great wheels of production that with grave concern, the allied world is now watching.

"Our house is on fire," and woe be to the man or group of men who let selfish motives creep between the present critical relations of man with man, in his struggle for human rights.

Class Revolutions Dangerous.

The agitator who seeks to profit by emphasizing class divisions rather than to seek harmony on a "square deal for all basis" is playing into the hands of America's arch enemy. The potato grading law recently enforced in some parts of Michigan has worked a sad tragedy in many sections where a frost-killed potato crop was the only source of income thousands of farmers had during the past year. The absence of a little definite effective organization through which these people could speak in a voice that could be heard, is their greatest weakness. In his most sober moments, we believe that the potato grower, no less than the dealer, aspires to see Michigan potatoes in our

country's market classed with the best and returning proportional compensation. We regret that Michigan potatoes have not always been thus distinguished. We fear that car shortage the past year has also worked against the snow-bound farmers of Michigan as far worse than in other sections. With a very large per cent of the railroad capacity reserved for war supplies, coupled with car shortage and severe

come enough to pay your taxes and live. It did not cost you much to live. You cut your own wood and lived on number two potatoes that you could not sell and you have been healthier and your families are stronger than as though you had dined daily at Dives' table."

Remedy is in Hands of Farmers.

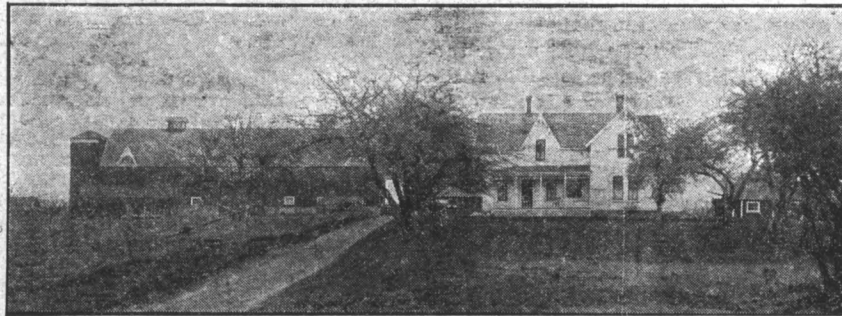
Now, Mr. Farmer, we are not reviewing all this exploitation merely to re-

lined up with the middlemen to still farther beat down the price of food from the farm. This is not true, for the county agents are largely practical farmers with a good vision of the needs of country life and they are constantly leading the government service for a place by your side in the field. As extension workers have not we a right to believe, Mr. Farmer, that you can and must organize your great business for efficiency as thoroughly as your competitors, the dealers, have done? Now, don't say you can't stick for we know in many places you have done so and can do so as many more times as it may be necessary. Then when you speak concertedly the volume of your voice will be heard and your admonitions heeded.

How About Your Dealer?

How many retailers do you have, Mr. Farmer, and what commission do you pay them for their services? The manufacturers found twenty years ago that the dealer must have a common interest with him for best service. Is your dealer organized to promote your welfare or is he lined up to give you just as little as he can? If the latter condition prevails all of the glittering tales of woe that your sponsors write can avail but little.

You tell us, Mr. Farmer, that if the county agent would drop his program and go into a marketing deal he could render a better service. You even go so far as to state that if he does not get behind you in your war against the other fellow he may lose his job. Possibly, may we suggest, that the man or class of men who are helped out of an emergency, get a benefit, but what about the men who are brought together and organized to work out their own problems with success? Then when the condition repeats itself, as it surely will, these men will have command of the situation and get the satisfaction of winning their own battle. Thus the county agent must stand for all of (Continued on page 522).



Farm Home of E. J. Haff, Lapeer County.

weather, stagnation in the movement of potatoes was inevitable and prices rose in spite of producer and even the dealer.

Another Case Calling for Organization.

In the price suggested for farm labor this year the Michigan farmer again has voiced his defeat. Again we must say, "Mr. Farmer, for the lack of an effective organization that could make your voice heard, you have lost by default. You are not discriminated against. They that have done this deed are 'honorable men,' but you have been overlooked. This time not by food regulations and dealers, but by farmers, men actually at the plow handles, men who are anxious to see Michigan agriculture come to its own and take its place in the world. You have seen three lean years and scarcely in-

count your wrongs. Far be this from our purpose. But, we want you to listen and think hard on this situation, for the seat of difficulty largely rests at this point. The remedy is within, not from outside of your ranks. Do you like to have your wrongs heralded from the house tops and proclaimed to the world? If so, we fear the effect is to divert your mind from the final issue. The time has come when the farmer must do his own thinking if he gets the best out of the great game of production. No one must possess a keener discernment and finer judgment than he who would interpret the laws of nature and make them speak in terms of a profitable farm production.

Concerted Action Necessary.

Another point, Mr. Farmer, you have frequently said that extension men are



A Long, Steep Sand Hill Paved with Stone Over Thirty-five Years Ago. Not a Stone Ever Became Loose. (See Story on Page 517).



Farmers and Townsmen Removed Paving, Cut to Six Per Cent Grade and Surfaced with Gravel to the Benefit and Delight of both Country and City.

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DETROIT, APRIL 20, 1918



CURRENT COMMENT.

The leading article in this issue should be **Constructive Organization**, carefully read by every Michigan Farmer reader. It contains much profitable food for thought. It is an old maxim that "he who desires a task well done must do it himself." But times are changing. Individualism must give place to organization if we are to best protect our own interests. This is true in agriculture as in other lines of enterprise. Organization along special lines of production will place the farmers of this country in a position to secure not only a square deal from a business standpoint, but real cooperation from many forces whose selfish interests now array them against the producer.

There are numerous examples right at hand showing the benefits which accrue from organization along special lines of production. Michigan bean growers have been a factor of no small importance in the establishment and stabilization of prices for their product during the past two years. The efforts of organized sugar beet growers have been equally successful. The reason for success in both cases cited has been the fact that the Michigan crop is such a large factor as compared with the total production of the country.

The more comprehensive efficient organization of potato growers which has recently been effected in Michigan is a move in the right direction. Every potato grower in the state should affiliate himself with this organization, and steps should be taken for cooperative work between it and similar organizations of this kind along special lines of production in the important producing sections of the country, a national body in which all of these various organizations could affiliate would be easy of accomplishment. Then producers would have a medium through which their influence could be asserted as the occasion might require, either with the government or with organized manufacturers and distributors who have or might secure undue control of the products of their farms or the prices at which those products may sell or at which necessary farm materials may be sold.

By substituting organized effort for

individual criticism, we will be able to largely solve our own problems and render material assistance in the solution of the difficult problems which will confront the country and the world after the war is over. The producers' organizations now in existence should be made the nucleus of more thorough organization in every case, as the first step toward the solution of the difficult economic questions now confronting us.

The Wheat Situation.

The government report of the condition of the winter wheat crop is encouraging, giving promise of a material increase over last year's yield. While the promise of an increase in the coming harvest as compared with that of 1917 is a source of encouragement in the present crisis, the great concern of the world at this time is the present supply of the great bread grain. The Food Administration has carefully figured out the available supply and designated the needed limit of per capita consumption to make it last for domestic needs until the next wheat is available, and at the same time provide as best we can for the absolute requirements of the fighting forces on the western front and the civilian workers of Europe who are keeping them supplied with fighting materials.

Notwithstanding these conditions, it is reported that in some sections of the country considerable wheat is being held in growers' hands in anticipation of a possible readjustment of the price for next year. The great mass of wheat growers of Michigan and the country have already marketed their last year's crop. The holding of wheat under the present conditions for a possible readjustment of the 1918 price is not only unpatriotic, but will undoubtedly be unprofitable, since there is no question that in the event of an increase in the official price for the 1918 crop by congressional action, stringent regulations will be enforced preventing the selling of wheat produced last year at any advance over present official prices.

Every available bushel of wheat should be marketed in the present emergency, to the end that the total available supply may be used to eke out the bread ration until the next harvest. If food is to win the war, we must make the most of the available supply in the present emergency. We believe that Michigan wheat growers are to a man too patriotic to withhold wheat from the market beyond their immediate needs when it is so badly needed by the boys in the trenches and the people of our war stricken allies, who are suffering as we hope we may not have to suffer before this war for liberty is won.

Furloughs for Farmers.

In a recently issued general order, Provost Marshall Gen. Crowder announced an intention to make use of the authority granted by a recent act of congress, to grant furloughs to enlisted men to enable them to engage in agriculture during the present season. Furloughs granted under the order will be for short periods, largely for seeding and harvest time.

Forms of application for such furloughs for use by relatives of enlisted men may be obtained from the local boards. The application will be referred to the county agent or the appeal agent of the local board, for investigation and then sent to the soldier's post or cantonment for his signature, after which it will be passed upon by the commanding officer and granted, or returned with reasons for disapproval entered thereon. Soldiers can also make application on their own initiative.

Such furloughs will not be granted to men in an organization that has been ordered to a port of embarkation, and all furloughs granted will be recalled when preparatory orders for

duty overseas are received by the organizations of which the men are members.

Buy a Bond.

The third Liberty Loan comes at a time when it is especially difficult for many farmers to subscribe. Farming has become an expensive proposition, and in very many cases the cash reserve is exhausted and the farmer's credit taxed by the necessary expenditures for materials and equipment needed for increased production this year. To many such, the purchase of Liberty Bonds will entail a sacrifice. But that sacrifice will be small indeed compared with the sacrifice of the boys who are offering their lives for their country or the parents who are giving them.

Each of us can help by the purchase of a small bond if we cannot spare the money to buy a large one. Every such purchase will help to keep the "Wolves of Humanity" at bay. The satisfaction of helping the cause will more than compensate for the sacrifice involved.

HAPPENINGS OF THE WEEK.

Wednesday, April 10.

Germans began offensive on eleven-mile front between Armentieres and LaBasse, where they gained territory from British and Portuguese troops. French repulse Germans west of Noyon and also in the region of Courcy-Le-Chateau.—Italians sink enemy boats opposite Figare, Italy.—War Department issues casualty lists of American expeditionary forces in France, lists containing 447 names.—United States undersea boats crossed the Atlantic during the winter, is announced from Washington.—Japan proposes to send army of 200,000 men to China to cooperate with a Chinese army of similar size in restoring order in China and to protect her borders.—Liberty Loan sales proceed under high enthusiasm, with prospects that the entire issue will be sold much sooner than expected.—Three men are killed and eleven injured in a mine explosion at Hartford, Ark.—An earthquake is felt at Washington and over a considerable portion of the southern states.

Thursday, April 11.

British lines near Armentieres is obliged to yield to the heavy pressure of the enemy. Important points, however, are being held.—Battle line is now 125 miles long.—American soldiers are reported as participating in the big battle.—Berlin claims 6,000 prisoners and 100 guns taken.—American casualty list published contains 283 names.—British parliament passes the second reading of the government's man power bill. This bill raises draft limit to the age of fifty years. It also extends the draft to Ireland.—Secretary McAdoo estimates subscriptions to the Liberty Loan as approaching half a billion dollars.—President Wilson discusses with war cabinet the feasibility of stabilizing prices on domestic necessities.—Arrangements are made to triple the monthly quota being sent to the front.

Friday, April 12.

British army forced back six miles makes a stand. Allies hold all the important positions in the north where violent fighting continues. British recapture territory between Loise and Lestren.—The long range bombardment of Paris is resumed.—British capture the villages of Rafat and El Keft in Palestine.—Government seizes coast vessels aggregating 400,000 tons for the shipment of supplies.—American marines land at Vladivostok to cooperate with British and Japanese forces in the protection of property of the Allies.—Federal house of representatives considers bill to increase price on wheat from \$2 to \$2.50.—Imperial Japanese war mission arrives at Detroit.—Delegates to the special congress of the National German-American Alliance in session at Philadelphia vote to disband the organization and to donate \$30,000 of Alliance funds to the American Red Cross.

Saturday, April 13.

Field Marshal Haig issues a command to his men to hold their ground at whatever cost.—British retain all positions but enemy makes some headway before Baillul and between Lawe and Clarence rivers.—Berlin reports progress of German troops through the Lys plain between Armentieres and Merville.—Information has reached this country indicating that 370,000 Germans were killed during the first week of the present offensive.—A delegation of American labor leaders ar-

rive at a British port.—Reports indicate that farmers are buying third Liberty Loan bonds far more liberally than they did of the first two issues.—American replies to Holland's protest (Continued on page 542).

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of The Michigan Farmer, published Weekly at Detroit, Michigan, for April 1, 1918.

State of Michigan, County of Wayne.

Before me a Notary Public in and for the state and county aforesaid personally appeared I. R. Waterbury, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Michigan Farmer, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Lawrence Publishing Co., Detroit Mich.

Editor, I. R. Waterbury, Detroit, Mich.

Managing Editor, M. J. Lawrence, Washington, D. C.

Business Manager, I. R. Waterbury, Detroit, Mich.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock).

M. J. Lawrence, 2131 Wyoming Ave., Washington, D. C.

Carrie J. Lawrence, 2131 Wyoming Ave., Washington, D. C.

Estate of M. L. Lawrence, 1677 Magnolia Drive, Cleveland, Ohio.

P. T. Lawrence, 225 W. 86th St., New York City.

Citizens' Savings & Trust Co., Trustee for Mary and Mortimer Lawrence, Cleveland, Ohio.

Nellie B. Lawrence, Guardian of Gaius J. Lawrence, 10716 Fairchild Ave., Cleveland, Ohio.

Mrs. G. B. Rogers, 13519 Lake Shore Blvd., Cleveland, Ohio.

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Neff Laing, 261 South Third St., Philadelphia, Pa.

J. F. Cunningham, 1224 Belle Ave., Lakewood, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding bonds, mortgages, or other securities are: (If there are none, so state).

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only).

I. R. WATERBURY,
Business Manager.

Sworn to and subscribed before me this Sixth Day of April, 1918.

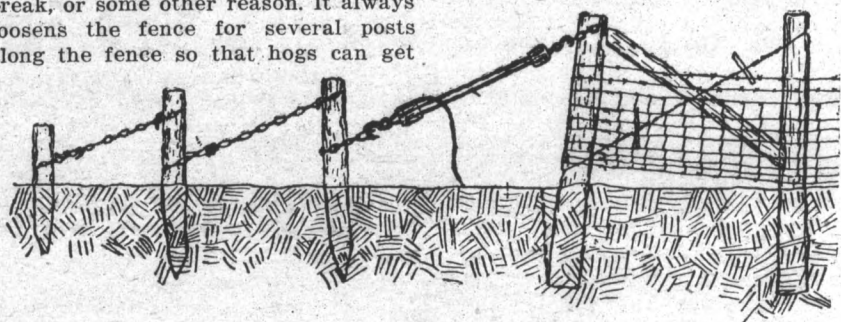
CLARENCE E. HAMLIN,
(My Commission expires October 12, 1921).

Practical Ideas for the Busy Farmer

IN the following short articles our busy readers will find several suggestions that may be of practical value to them. No doubt hundreds of other readers of this page have devices or use methods on their farms that are an improvement over the ordinary devices or methods employed by the average farmer. If they will just send us a rough sketch of any such device, or a brief letter describing their method so we can present it to our readers in an intelligible manner, we will remit for each suggestion available to this page, one dollar. Address your ideas to "Suggestion Dept.," Michigan Farmer, Detroit, Mich.

A METHOD FOR GETTING THAT ANCHOR POST BACK.

One of the most disgusting sights on a farm is an anchor post that has been pulled over by having the brace slip or break, or some other reason. It always loosens the fence for several posts along the fence so that hogs can get



under. The sketch shows a method I used which worked very well. It is necessary to hitch a horse to the block and tackle if a tackle is used. A fence stretcher used in place of the block and tackle will probably work better if one has one that can be used. By running the chain from the top of one post to the bottom of the next gives sufficient leverage to hold all that can be pulled by a block and tackle or a fence stretcher. After the post has been pulled back in place the brace can again be put in place or some other means of bracing the post can be employed. A good method to use in bracing a post that has pulled out as in the sketch is to bury an anchor by the post the tackle is fastened to, and run a wire from it to the anchor post. This method does away with the brace.

Monroe Co.

C. H. GREEN.

CRATE FOR SHIPPING CATTLE.

The accompanying illustration will show the handy farmer how to construct a crate for shipping cattle by express. In the construction of these crates two ideas must be kept in mind; first, they must be made sufficiently strong to confine the animal, and also to protect him against injury; second, the question of weight is of importance, because when made too heavy

the express charges are considerably increased. Proper bracing enables one to construct these crates of much lighter timber than would otherwise be the case.

E. S. L.

KEEP TIRES WELL INFLATED.

The supposition that the heating of the air in an automobile tire by the sun in hot weather brings about a dangerous pressure has been exploded by a practical test, and it has been shown that for a motorist to lower his air pressure because the sun is hot actually injures the tire far more than any possible increase of pressure could. The reason for this is that the heat caused by the flexing of an under-inflated tire destroys the tire much more rapidly than the average motorist realizes.

The most serious variation in tire

pressure is caused by leaking. This is not constant, being dependent on the weather and other conditions of use. In a careful test made by experts, it was determined that leakage occurred on an average of twenty pounds per week, this being mostly due to the condition of valves.

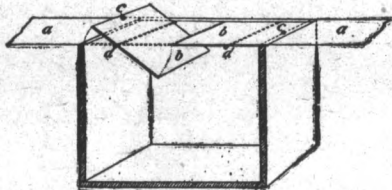
It may be taken as a safe rule to follow, that the man who inflates his tires to the proper pressure, following the inflation tables issued by the tire companies, will obtain far more mileage than the man who rides his tires under-inflated. The greatest danger to tires is under-inflation, and not over-inflation.

G. T.

PIT TRAP FOR CATCHING RATS.

A modification of the barrel trap is the pit trap. This consists of a stout narrow box sunk in the ground so that the top is level with the rat run. It is fixed with a cover of light wood or metal in two sections, the sections fitting nicely inside the box and working independently. They turn on rods, to which they are fastened. They are weighted near the ends of the box and so adjusted that they swing easily. An animal stepping upon the cover beyond the rod is precipitated into the box, while the cover immediately swings back to its place. Besides rats, the

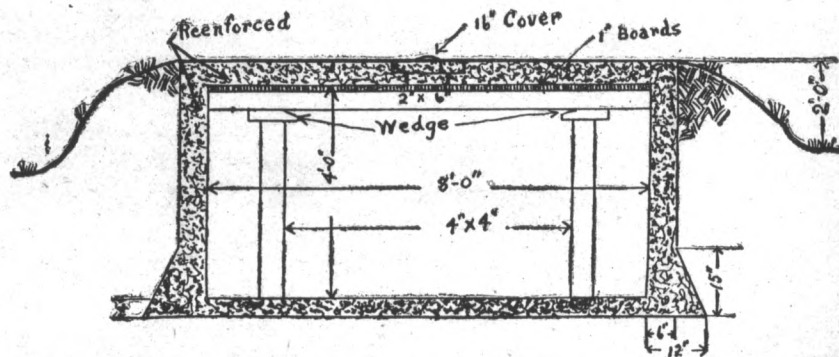
trap is well adapted to capture larger animals, as minks, raccoons, opossums and cats. It is especially useful to protect poultry yards, game preserves,



and the like. The trap should be placed along the fence outside the yard, and behind a shelter of boards or brush that leans against the fence.

BUILDING A CISTERN ON QUICKSAND FOUNDATION.

It is not always possible to construct a cistern in the kind of soil where it can be easiest built. It occasionally happens that one is obliged to build on a quicksand foundation in order to have this reservoir in the most convenient place for the women folks. In building on quicksand it is better to make the cistern of different proportions than when working in firmer soils. The accompanying illustration shows a plan where the reservoir extends into the ground about two and a half feet, and then about two feet above the surface. This gives a broad foundation, and if carefully constructed of reinforced cement there will be no danger from settling. The illustration gives dimensions, and illustrates the method of supporting the roof while the cement is being poured. Any per-



son who understands the handling of cement can easily follow this plan.

—H. H. M.

GUARDING AGAINST FIRES.

A few simple precautions might save many dollars worth of property which is annually destroyed by fire. The fire menace to farm buildings is a very real menace but a large proportion of fires are started by carelessness or neglect. Carrying lanterns into the barn causes many fires. Farmers who

can afford them should equip their buildings with electric or acetylene gas lights. If such lights are properly installed, there is almost no danger that they can cause fires. At the present time a hundred or two dollars will provide lights for the farm buildings that will be a source of unfailing joy. For those who are compelled to carry lanterns to the barn, the advice to provide themselves with the safest kind of lantern that can be procured is given. Also put up hooks at various convenient places about the buildings and hang up the lanterns instead of standing them on the floor. Lots of fires have been started by the kick of a horse. Especially have hooks for the lights in the stable where horses are frequently handled and harnessed by lantern light.

A few hand fire extinguishers at convenient places about the barn may be the means of avoiding a disastrous blaze. Often the fire in its first stage can be extinguished if the means for fighting it are close at hand. For a large barn, the form of extinguisher that is mounted on two wheels and can be quickly moved to the scene of the blaze, is advisable. The principle on which the chemical in these fire extinguishers works is that of starving the flame by depriving it of oxygen. In the early stage this will effectively control the fire.

New Hamp.

C. H. CHESLEY.

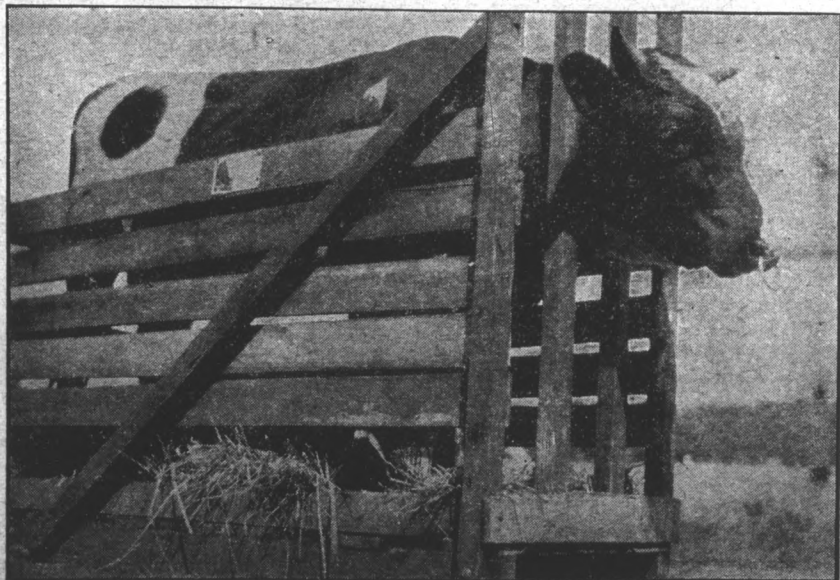
EASY WAY TO DIP SHEEP.

Here is the answer to Mr. Colon C. Lillie's article on the hard job of dip-

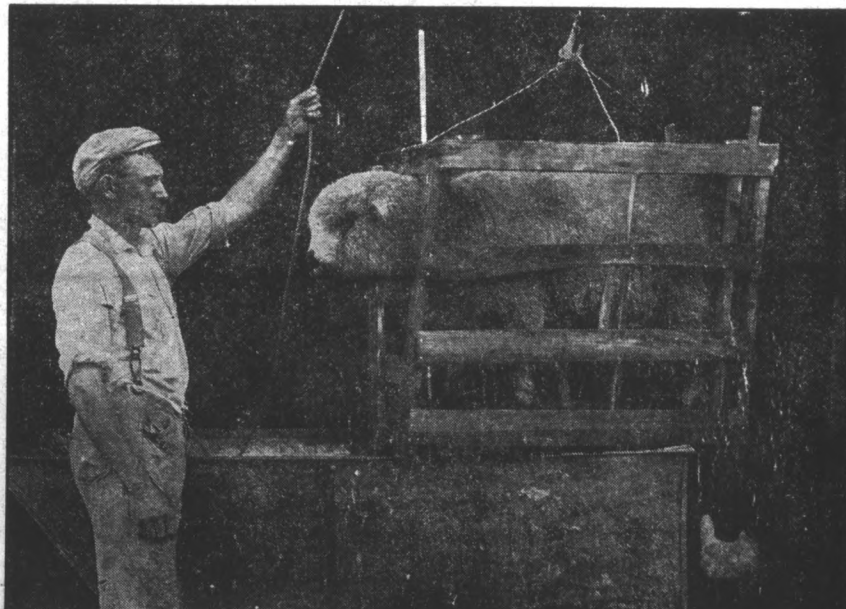
ping large sheep. This little crate fits into dipping tanks and has a tapered sliding door. The crate is raised from the floor by a small block and tackle and lowered into the dipping vat, then raised again over vat and allowed to drip, then swung over and lowered to floor. Have come to the conclusion that the farmers of Michigan, in general, were never in the sheep business, but in the business of raising internal and external parasites and the sheep were just a side issue.

Lapeer Co.

M. M. GIBSON.



A Substantial Crate for Shipping Cattle.



An Easy Method of Dipping Sheep.

News from Michigan Cooperative Societies

New Live Stock Shipping Associations.

Ionia county farmers living near Clarksville, have formed a stock shippers' association, with the following officers: President, Fred Robbins; secretary, N. W. Stuart; treasurer, John J. Scott. At the first meeting it was reported that seventy-one pledges for stock at \$10 per share had been secured.

A cooperative shipping association has been formed at McCords, in Kent county, with about 150 stockholders, and officers as follows: President, Wilbur Buress; vice-president, Fred Patterson; secretary-treasurer, George F. Campau; directors, the officers and Archie Ross, J. D. Stauffer, Chas. Buterick and James Fardley.

Farmers living near Onondaga, in Jackson county, have formed a stock shipping association, with Chester Hunt, supervisor of the township, as manager, and Ray Whitney as secretary-treasurer. Eaton Rapids "co-ops" assisted in getting the work started and the first shipment of live stock was made to Detroit on March 30.

Bean Growers Meet at Stanton.

Over 200 farmers attended the annual meeting of the Montcalm County Bean Growers' Association held at Stanton and Charles M. King and E. C. Lowry, both of Stanton, were re-elected as president and secretary respectively of the organization. President King was chosen as delegate to attend the state meeting to be held in Saginaw next fall. The membership fee was reduced from fifty cents to ten cents, the chairman announcing that it was members that were wanted and not cash. Many new members were added. At the afternoon session cooperative selling was discussed and a Greenville man told of what the Gleaners there had done in the way of taking over a produce concern. He suggested opening a branch in Stanton. Other speakers believed that Stanton farmers ought to form an association of their own and some of the farmers favored building an elevator. Subscriptions for a cooperative buying and selling organization, reaching upwards of \$2,500, were secured in a few minutes before adjournment and this amount has been more than doubled since. The organization will be completed when \$10,000 has been subscribed.

John May, treasurer of Eaton county, is the new secretary-treasurer of the Square Deal Cooperative Live Stock Association at Charlotte.

Farmers of Ensley township, Newaygo county, talk of forming a cooperative selling organization, as a result of recent talks at Grange meetings.

Active at Middleville.

Barry county farmers met at Middleville and formed the Middleville Cooperative Company, the object being "the handling, buying, selling, shipping or placing upon any market of agricultural and dairy products." The officers are: President, Edwin J. McNaughton; vice-president, J. H. Campbell; secretary-treasurer, Frank D. Pratt; manager, Albert Barrell; directors, the officers and J. F. Windes, Glenn Allen and Grant Whitlock. The membership fee is \$10. Secretary Pratt is an experienced stock buyer and for a time at least the company will confine its operations to shipping live stock. Forty-four farmers enrolled as members at the first meeting.

St. Clair Farmers Buy Elevator.

The Blaine Cooperative Company, composed of St. Clair county farmers, held its annual dinner meeting at Blaine and reports of the year's work were encouraging. During the past year the company bought the elevator of the Blaine Hay & Grain Company, and has been under expense in getting started, while the car scarcity has hindered operations. However, reports

showed net profit of over \$900 and the company has been able to pay six per cent interest on all shares of stock and a dividend of six per cent to stockholders. New directors elected were Lewis Atkins, Art Spalding, Fred Stival, John McDonald and Lee Munroe. Stock will be shipped this year, with John McDonald in charge of this branch. The business done, starting April 1, is strictly cash.

Farm Bureau in Barry County.

A county farm bureau completed its organization at Hastings, starting with forty-six members, and the following officers: President, Fred J. Lawrence; vice-president, Fred C. Otis; secretary-treasurer, John Foreman. Chairmen of committees are: Boys' and girls' clubs, L. C. Reimann; Grange, John C. Ketcham; Farmers' Clubs, J. W. Killick; Gleaners, Adelbert Enzian; home demonstrator, Audra E. Decker; representative of farmers at large, Walter E. Stanton. Roy Brumm is the new county farm agent.

Affairs in Baraga County.

There has been substantial increase in the number of farmers locating in the county during the past year and a county farm expert, W. G. Kirschman, graduate of the M. A. C., has been engaged. The Baraga fair will be held the week preceding the Copper County Fair and the new fair officers elected are: President, H. R. Gladden; secretary, Peter M. Gitzen; treasurer, John Beck.

Barley and Wheat in Marquette.

Meetings are being held in every section of Marquette county during April, the speakers being L. Roy Walker, the county farm agent, M. A. Leach, agricultural agent for Luce county, Verne Freeman, sheep specialist of the M. A. C., and F. G. Kraege, dairy specialist of Fort Atchison, Wis. Barley has

proven to be a successful crop in the county and the raising of barley and wheat from both financial and patriotic standpoints are being advised.

Big Dinner at Marshall.

Calhoun county farmers and their wives, about 300 in number, attended the county farm bureau meeting held at Marshall and were guests of the business men at dinner, the menu including roast beef, mashed potatoes and green peas, coffee, fried cakes, ice cream and cigars. New officers of the bureau are: President, Frank Mahrie; vice-president, Louis J. Decker; secretary, Frank E. Smith; treasurer, Ben J. Morgan. E. B. Moore is the county farm agent. The leading address was made by Eben Mumford, of East Lansing, director of farm agents in Michigan.

Will Study Bean Diseases.

An experimental farm of one hundred acres has been chosen by the United States Department of Agriculture in Saginaw county. It is located just south of the city limits of Saginaw on Sheridan avenue and has been secured for one year, with option of lease for five years. The farm is well drained with tile and has modern buildings and equipment. Government experts will have charge and the leading line of work will be experiments to test strains of beans as to disease resistant qualities, with reference to control of bean anthracnose and blight.

Farm Bureau in Charlevoix.

A farm bureau has been formed in Charlevoix county, with the following officers: President, Wm. J. Pearson; vice-president, D. E. Ingalls; secretary, W. F. Tindall; treasurer, G. E. Hammond; chairman executive committee, D. F. Meech. C. F. Smith is the new county farm agent, with offices at Boyne City.

Michigan Milk Prices

The following table gives the milk prices and quantities handled at different plants in Michigan for February and March of this year.

	Feb. Price.	Mar. Price.	Milk shipped in Feb.
Lake Odessa Milk Co.	\$3.10	\$2.90	1,287,523 pounds.
Chapin-Sacks Co., at Webberville Plant	3.10	2.80	1,201,969 pounds.
Hastings Condensed Milk Co.	2.75	2.75	Closed for lack of coal.
Owosso Plant, Detroit Creamery Company	3.00	2.75	689,269 pounds.
Helvetia Co., Hudson	3.07	2.95	2,736,938 pounds.
Ekenburg Co., Elsie	3.00	2.75	Closed for lack of coal.
Clio Condensary, Clio	3.00	2.75	424,283 pounds (besides milk powder from condensed milk).
Hires Condensed Milk Co., Uby ..	3.10	2.83	(No record).
Ohio Dairy Co., Morenci	3.07	2.90	(No record).
Western Reserve Milk Co., Hillsdale	3.00	2.80	420,622 pounds.
Western Reserve Milk Co., Coldwater	3.00	2.80	842,919 pounds.
*Detroit milk (in the 15c zone) ...	3.35	3.35 for 85% and \$2.40 for 15%.	
Grand Ledge Milk Co., Grand Ledge	3.10	2.90	1,046,856 pounds.
Grand Ledge Milk Co., Sparta	2.90	2.75	421,608 pounds.
Grand Ledge Milk Co., Fenton	2.90	2.75	331,450 pounds.
Van Camp Packing Co., Adrian ..	3.07		2,927,251 pounds.
Libby McNeil & Libby, Perrinton ..	3.25	2.90	1,341,475 pounds.
Towar Plant, Imlay City	3.15	3.10	271,720 pounds.

*The price for Detroit milk is based on the fifteen-cent zone. Outside prices are paid on this basis with deductions for freight.—J. N. McBRIDE.

Michigan Potato Situation

POTATO prices still sag and the market outlook is not bright. Tubers now retail around ninety cents per bushel at the stores in Grand Rapids and elsewhere, or approximately one-quarter of the price prevailing a year ago. Recently a Kent county farmer sold a load to a Grand Rapids grocer at fifty cents a bushel and later in the day, as he passed the store, he saw the tubers neatly displayed at "twenty-five cents a peck." As usual, the farmer was losing money while the middleman was making a nice profit.

Shipments out of the state continue very light. The latest news bulletin of the United States Bureau of Markets that we have at hand shows Michigan's shipments for March 19 as thirty-three cars, against sixty-one for Wisconsin and 121 for Minnesota. Michigan shippers have maintained all along that this state is being discriminated against in the matter of cars.

Crop Still in Farmers' Hands.

Upper peninsula growers are getting anxious and the Marquette Commercial Club has sent the following telegram to members of the senate and house in Washington: "What provisions are being made to take care of the surplus potato crop in Michigan? Upper peninsula farmers are very much dissatisfied as they hold in pits and cellars most of their crop of last year. They were willing to sell last fall but had no

market. The farmers surrounding Grand Marais raised 10,000 bushels but could not sell them and they are still on hand. This is a fair sample. We are facing a mighty serious situation. Unless the government helps out the farmers will not exert themselves this year."

In reply Congressman James says: "The Food Administration advises me that they will take care of Michigan potato situation if they can secure sufficient railway cars. They will advise me fully in a day or so. In the meantime I am trying to arrange for better car service."

The Contention at Washington.

Uniform standard grading as adopted by the United States Bureau of Markets and enforced by the United States Food Administration, is still a live issue in Michigan. In substance this is the contention of the Washington authorities: "The 1917 crop was a record breaker, being estimated at 442,000,000 bushels, or nearly 100,000,000 bushels greater than the average for the last five years, and fifty-four per cent in excess of last year's crop. To sell this crop at fair prices it will be necessary to keep ungraded, poorly graded or cull stock off the market. After more than three years of wide and careful research by the Bureau of Markets uniform standard grades, to be used as the basis, were adopted and use of these grades in marketing the crop was requested. The response of growers, shippers and dealers in use of these grades was gratifying. Later, in sections where there had been a general effort on the part of shippers to adopt these grades, the food administration required their use, feeling that the few who were not cooperating were acting against the best interests of the potato industry and the nation."

"U. S. Grade No. 1 includes potatoes with minimum diameter of one and seven-eighth inches. Grade No. 2 includes marketable stock with minimum diameter of one and a half inches. It was chiefly because of the difference in the mesh of sizing machines that the minimum diameter was specified in the U. S. grades, rather than size of mesh for screens to be used. The need is for a universal standard for the entire country, so that buyer and seller may have a just and stable basis for their transactions, regardless of season, section or other factors."

What Michigan Growers Hold.

State potato growers at their recent Lansing meeting adopted a resolution in favor of a single grade, called Michigan Standard No. 1, to include all the marketable stock passing over a one and three quarter-inch round mesh screen.

A Kent county grower expresses the situation as follows: "Grade the potatoes? Sure! But why have two grades? Did the consumer ask for two grades? Haven't many city consumers been buying potatoes all winter without even knowing that there is such a thing as two grades? The No. 2 grade at present is not what farmers used to peddle out in Grand Rapids and Muskegon as small potatoes—the No. 2's are really medium-sized potatoes. To the sand farmer who raises quality stock this new grade is a bad blow."

Pendulum Goes to Other Extreme.

And now is the pendulum swinging too far the other way? Senator Wm. Alden Smith has added to the agricultural appropriation bill an amendment forbidding the grading of potatoes at all, and the senate has passed this measure. It would almost appear that the remedy is worse than the disease in this case. Everybody stands for the grading principle and the growers now stand for a single grading through a mesh of reasonable size that will enable

(Continued on page 518).

Planting Soy Beans with a Drill

PRACTICES and methods of sowing soy beans vary somewhat, but most of the farmers in this community have been using the grain drill for this purpose. We have used a three-horse grain drill, and have worked out a table by which the proper amount of seed per acre may be sown. The drill has an indicator on it which shows the approximate acreage sown at any time, which is fairly accurate.

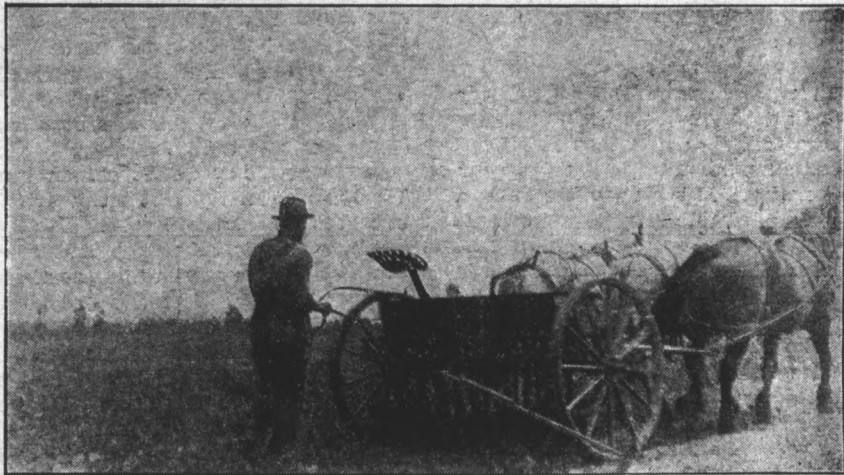
We have been sowing the Hollybrook and Ito San varieties. The seeds of both these varieties are about the same size. When drilling the beans solid for either hay or seed the indicator is set to sow on the wheat scale:

With the indicator set at No. 9, which is equivalent to sowing one and

portion to the size of the hole than wheat.

When drilling them in rows, the hoes were stopped up so that the rows were between twenty-nine and thirty inches apart. It is difficult to figure the acreage by the indicator with this method of sowing because the drill does not cover all the land sowed and must travel a little less than the width of one row away from the last round.

For drilling in rows the feed was set to sow on the oats side. When the indicator was set at No. 9 on the oats side it sowed at the rate of 50.5 pounds of soy beans to the acre, which is about enough seed to sow when drilling in rows. We tried sowing a few rounds on No. 10, but thought that a



In Good Soil we Found that Drilling Seeds About One and a Half Inches Apart in the Rows Gave us a Good Stand.

one-half bushels of wheat per acre, the drill sows with all the hoes open, sixty-three pounds per acre of soy beans.

With the indicator set at No. 7, (five pecks of wheat per acre), it sows forty-eight pounds of beans per acre. And at No. 8, (five and one-half pecks of wheat), it sows forty-six pounds of beans per acre. It will be noted that there is a much bigger difference between the amounts sown by Nos. 8 and 9 than Nos. 7 and 8. This is due very largely to the nature of the beans, as they are oval in shape and very slick which makes them feed faster in pro-

little too heavy. If the beans are drilled about one inch apart in the rows, that will be sufficient to make a heavy growth of vines in black ground. The soy beans do not grow either so high or rank in clay ground and it is well to sow them moderately heavy if a good yield of seed or hay is desired.

When a slow walking team is used the drill will wobble sideways considerably, making very crooked rows which are not so easy to cultivate. A good driver and a fast walking team can succeed in making fairly straight rows.

Indiana.

J. L. JUSTICE.

Farmers and Business Men Cooperate

By J. H. BROWN

OVER a third of a century ago one of the most prominent farmers of Calhoun county was a "path-master" in his road district. There was a very long, steep and sandy hill on his road to Battle Creek. It was impossible to haul ten bags of wheat up that hill with an ordinary team. So one day Leonard Spaulding got the farmers together and commenced paving the hill with cobblestones. The first picture (page 1) shows that stone-paved hill just as it looked after it had been used for over thirty-five years. The road always was a bad one, even after the worst hill was stone paved. After driving down this hill, and across the hollow, there was still another longer hill, though not quite so steep. Finally, the farmers got so sick of the steep hill, even though it was so well paved that not a single stone ever came loose, that they decided to cut the hill down to six per cent grade and gravel the bed.

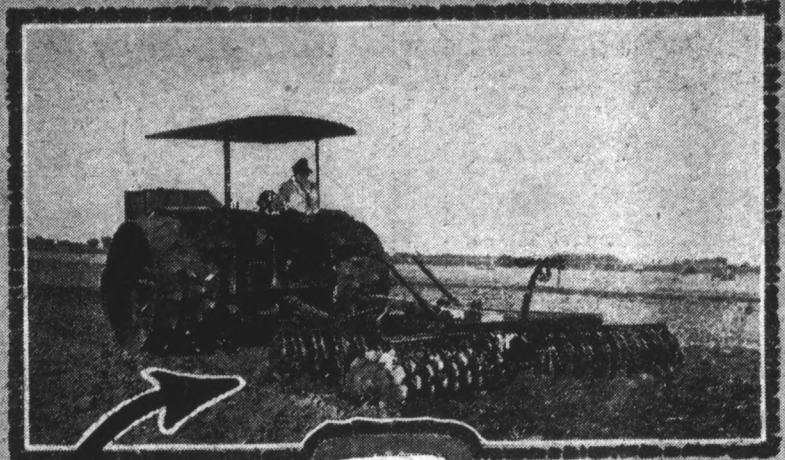
Now that hill is finished and this spring there are hundreds of farmers who are enjoying driving up and down that old hill with all the load they can pile on their wagons, even while the frost is coming out and mud reigns elsewhere.

All the paving stone had to be dug out and thrown up on the bank before cutting down the road bed. A comparison of the first and second pictures shows what a transformation was

made in the grade. The road bed was lowered over twelve feet along the upper part of the hill.

The part played by the city business men was not only to contribute money for improving this bad hill, but a lot of these men went out two different days and helped pick up and carry stone across the road. After the grade was made and graveling begun, the writer, as chairman of the chamber of commerce agricultural committee, invited a score or more of the leading business men of Battle Creek to go and help carry stone from the high bank to pave the gutters on each side of the road bed. It was so very sandy in these gutters that it was deemed essential to get the gutters paved, both sides of the long hill before torrential rain set in and cut out the road completely. This stunt, and the working together of city men and farmers, was not only novel, but shows how both classes can get together and work for mutual interests.

Russia failed to support its army and its army failed to fight for Russia, and today Germany is taking over thousands of square miles of rich farming and mineral lands, title to which is held by Russians who will have their deeds considered mere scraps of paper by the conquerors. Make the United States a success instead of a failure like Russia.



Increase the Tractor's Value!

Use the tractor disk harrow that can take the place of a plow—gives greater acreage yields under all conditions.

Cutaway
(CLARK)
DOUBLE ACTION

Tractor Harrows

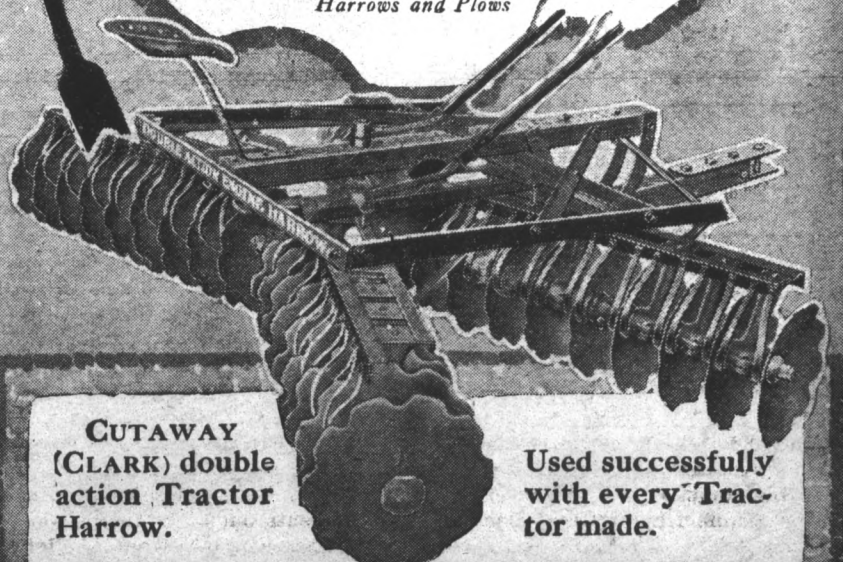
get in deep—cut and stir every inch of ground—pay big dividends on your tractor outfit. A size and type for every tractor—small and large—proven beyond experiment by 15 years' use and development of Rigid Main Frame principle applied to tractor work. Adjustable hitch, double levers, forged disks (solid or cut-out). Thousands in use. Favored by tractor manufacturers.

Don't try to make an inferior disk do—you can profit by writing to-day for full specifications and name of nearest dealer, whether you have a tractor now, or expect to buy one. Give make and size of tractor, work to be done, etc., for free tillage advice.

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Rouge-Rex shoes are made for the farmer. They are well constructed, fit well, are comfortable on the feet and will give longer and better wear than any other shoes at anywhere near the price.

During the war the United States is in need of all the leather it can get. By buying Rouge-Rex shoes you will indirectly help to conserve leather, because Rouge-Rex shoes wear longer than any other shoes.



Buy Shoes Especially Made for Your Work

If you buy Rouge-Rex shoes you get a pair of shoes especially made for your use. If the soil on your farm is sandy, we recommend Rouge-Rex high cut shoes as they prevent sand from getting into the shoes. For heavy or loamy soils, Rouge-Rex low cut shoes are more practical. Rouge-Rex shoes will outlast any other work shoes. When you buy Rouge-Rex shoes you do not have to buy shoes so often and therefore you conserve leather.



The leather that goes into Rouge-Rex shoes is from especially selected hides, tanned in our own tannery and the shoes are manufactured by us. We know exactly what quality leather goes into Rouge-Rex shoes and can confidently say that you cannot get a pair of shoes that will give you better and longer wear or more satisfaction than Rouge-Rex.

Rouge-Rex dealers are in practically every city in the state. If you do not know who handles Rouge-Rex shoes in your city write us for the name of the Rouge-Rex dealer.

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Has ball-bearing turntable; always stands squarely into the wind. Self-governing—will not run faster in a 40-mile gale than in a 12-mile wind. Spider pressed onto the main shaft—perfect oiling system—all working parts enclosed. Galvanized channel steel rim is used for holding sails—no bolts, rivets or pins used. Sails are driven into the channel frame, making a wheel that is stiff and strong, yet light in weight. Made in 10 and 12 ft. sizes. We also make Kalamazoo back-geared mill (8 ft.) with either galvanized steel or wood wheel.

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RECLEANED. BAGS EXTRA 25c. **YOUNG-RANDOLPH SEED CO., Owosso, Mich.**

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Buckwheat for 1918

THE growing of buckwheat has fallen into disrepute in most places. The fact that it is often spoken of as a lazy man's crop should not deter others from raising it, and the old principle that it requires little or no cultivation should not be followed. When the country was new, and the soil rich, any kind of scratching of the soil was considered sufficient, and in this way, very few gave to the crop the proper cultivation.

Easy to Produce.

Buckwheat is really one of the easiest crops to grow. The seed costs even less than corn per acre, and it requires planting at a leisure time, and will grow a good crop on land that is almost worthless. These commendatory qualities of the crop seem sufficient to overcome those put in the opposite scale.

If buckwheat is grown on the true and right principle that whatever is worth doing at all is worth doing well, there is little doubt that it will prove profitable, whether the soil is poor or otherwise. If for no other reason, it seems advisable to grow a small patch of it for the breakfast cakes that it yields the family during the winter season.

Suits Many Soils.

The buckwheat that is sown on rich soil will, of course, yield better than that sown on new land which has just been scratched over by the plow and harrow. If the soil is mellow and well worked, a peck of seed per acre will give a good yield. There is one advantage in thin seeding, and that is that

it encourages the branching of the plant so that the seed is borne very thickly.

The choice of the seed also affects the growth of the plants considerably, although the black and the gray appear to grow almost equally well on average soils. On a thin, gravelly soil, which is in good condition, the gray variety yields more and better flour than the dark, thick-skinned kind.

The question of fertilizers for buckwheat is one to which little attention has been given. Why any fertilizer of any kind should be used may seem strange to those who have been accustomed to raise the grain on poor land where it seemed to flourish under the most unfavorable circumstances. On rich soils it would at first glance seem that manure would be sheer waste. It may be said that this is partly true, but we have found that lime applied to the soil is not time or money lost. The application of plaster is also beneficial.

A Short Season Crop.

Buckwheat is a short season crop. We have sown the last week in July and secured a mature crop. The first week in July is, all things considered, the best time to sow in this (northern) part of Indiana. If frosts are unusually early, they may catch the crop when in blossom and thus kill the grain. Such an occurrence is unusual, however, in this section. The best way to harvest it is to cut it with a mower, let it lay in the swath for some days, then put it into cocks, allowing it to cure thoroughly before threshing. Indiana. K. K.

THE MICHIGAN POTATO SITUATION.

(Continued from page 517). ble them to market all potatoes of good eating size and no others. They do object strongly to a system that leaves on their hands a large quantity of stock that is just as good for the consumer's table as the No. 1's.

War Board Gets Busy.

The potato situation has stirred the state war board to action and the sum of \$25,000 has been set apart for experiments in dehydrating or drying potatoes for government use. The potato is seventy to eighty-five per cent water and to dehydrate means literally to unwater the tuber, greatly reducing the bulk and preserving same for years. The dehydrator is a quick-action dryer or evaporator and though looked upon as a new experiment the principle is centuries old. Several carloads of Michigan potatoes have been shipped to a plant at Elba, N. Y. Michigan also has a dehydrating plant at Casnovia, which has been idle for some time because of the financial difficulties of its promoters, but it is announced that the plant will now resume activities. It is said that the government will be in the market for dehydrated potatoes in large quantities. That is, if the product is good. "The proof of the pudding is in the eating," and if the dried potato is less palatable than the tuber in its natural state, then away goes the dried potato market. We haven't the least thought or desire of throwing cold water on the state's experiment, but the efforts made by the Casnovia people to find a market for the product, and keeping it, have a sobering influence at least. Even Governor Sleeper cautions growers not to expect too much. It is stated that General Goethals is willing to accept dehydrated potatoes for the army in France, provided they will meet the tests of the quartermaster general's department.

A Lesson from the Enemy.

Germany might teach us some things perhaps about the use of potatoes in flakes, flour, starch and other products. At least our enemy country is credited with having dehydrated annually 800,

000,000 bushels of potatoes for several years previous to the war, thus preserving this valuable food indefinitely as a reserve supply to draw on in case of war. While the common method is to slice and dry the tuber, a more recent method used in Germany is to reduce to pulp by treatment with steam jets. Then this paste is run through hot rolls to expel the water and the final result is light flakes that are put up in 125-pound sacks. In 1916 Germany produced 4,000,000 tons of these potato flakes.

Potato flour is known to be valuable for "war bread" and it has been suggested, why not set the beet sugar factories at work on this product during their idle period at the present time. The leading potato flour plant in this country is located at Caribou, Maine, and an expert from this mill is experimenting with beet sugar plants in Michigan to see what may be done here. Michigan has the potatoes and they should bring the farmer a fair price. Not one of them should be wasted in these war times.

URGES USE OF MORE POTATOES.

Resolutions passed by the Antrim County Farm Bureau:

Whereas, there is a large supply of potatoes in the United States and in Michigan,

And whereas, most of the hotels and eating houses are not serving portions that meet the ordinary requirements of their patrons,

Therefore, be it resolved by the Antrim County Farm Bureau, that the hotels and eating houses of Michigan be asked to serve potatoes more liberally to their patrons, in order that the large stock of potatoes now on hand may be more nearly used before the new crop is harvested, and for the further reason of conserving meat and grain foods by substituting potatoes in their stead.

MILK PRICES FOR APRIL.

The Milk Commission fixes the price for April milk at \$2.85 in the first zone for eighty per cent, and \$2.35 for the surplus in all zones. This announcement is made by R. C. Reed, Secretary of the Michigan Milk Producers' Association.

Renovating the Rhubarb

THE gardener stopped before the rhubarb patch and said, "It is more than five years old and it has not been fertilized since it was planted. The blossom stalks have been allowed to develop and the production of seed has been a severe tax on the strength of the roots. Why not renovate the rhubarb, give it a new lease on life and raise stalks that are fit to market?"

Then the farmer remembered that quality rhubarb was one of his favorite side dishes and rhubarb pie was cheap but good and healthy. He began to pick up a few points about the plant with the idea of making the rhubarb patch more productive. The rhubarb is the only useful member of its genus as the docks to which it is closely related are prominent among the black sheep and of no value on any farm.

A Warm Location Best.

A warm soil on a southern slope will bring out the rhubarb early in spring when the price is best. A deep sandy loam which is well drained will pro-

duce the best results and it can scarcely be fertilized too heavily. The root cuttings can be started to the best advantage in trenches about one and a half feet deep which have been filled with composted manure. An annual application of manure in the fall will keep up the quality of the crop.

there are many old rhubarb beds which are not producing the quality stalks which they are capable of growing if plenty of fertility is furnished. Other beds are so old that their renovation is hardly worth the trouble and new beds can be started in fertile soil by the division of the roots.

The plant is quite free from insect enemies. The rhubarb curculio and the rhubarb flea-beetle sometimes cause slight injuries but are seldom serious. The curculio punctures the stems, causing exudations, and while the stems cannot be sprayed with arsenicals for obvious reasons, these pests are not active and they can be picked off by hand if their damage appears to be serious. Many fine crops of rhubarb are produced with no regard to insect enemies and this is more than can be said about the majority of garden crops. As a spring tonic the rhubarb is of great value and it should be more generally used. In a section where winter is long and severe the use of canned rhubarb will



A Profitable Rhubarb Patch.

duce the best results and it can scarcely be fertilized too heavily. The root cuttings can be started to the best advantage in trenches about one and a half feet deep which have been filled with composted manure. An annual application of manure in the fall will keep up the quality of the crop.

Root cuttings are the most desirable for starting a rhubarb plantation. They can be started from seed but this is apt to produce plants which are not uniform. Divide the root, allowing a strong eye to each piece and the cutting will produce a good plant in one season.

Growing Quality Rhubarb.

In growing rhubarb it is well to remember that the size and quality of a crop depends upon the care during the preceding year. Large stalks bring the best prices and, of course, a fertile soil free from weeds means a rapid development of the rhubarb stalks early in the spring when the prices are the best. Placing the plants three or four feet apart in rows four feet wide is the usual custom.

The cultivation of a commercial rhubarb plantation should be thorough but not deep. The large expanse of leaves means that the plants need plenty of moisture and so the weeds must be kept down and the soil maintained in a mellow condition. When the plants are bearing heavily, which is the case by the third year, it is best to delay cultivation until after the crop is harvested. Then well rotted manure can be worked into the soil to prepare the roots to undergo the strain of producing another crop the next spring. The blossom stalks must not be allowed to grow or they will cause serious injury to the crop during the succeeding year.

Profitable to Grow.

In general, a crop of rhubarb is not difficult to produce and with the increased cost of early vegetables, together with the scarcity which may result from labor shortages, the rhubarb should bring a fair price. At present

undoubtedly be of great value in improving the health of the family, especially if pork and potatoes have been playing too heavy a part in the daily diet.

R. G. KIRBY.

ARSENICALS FOR SPRAYING THE APPLES.

Safety and cost are the important considerations in purchasing spraying materials. The prevailing high prices make cost doubly important this year. Most arsenicals are effective. Some are likely to cause injury. The most serious injury is a blackening of the blossom end of the apple, commonly termed calyx burn.

Calyx burn is induced during the application of the calyx spray, though it usually is not noticeable until the fruit begins to approach maturity. The direct cause may be unsuitable arsenicals, mishandling of materials, or over-heavy spraying.

Arsenate of lead is made in two chemical forms, neutral and acid. The acid form is the usual commercial or standard arsenate of lead. The two forms differ in the amount of arsenic that is in combination with the lead. The neutral form contains less arsenic, is more expensive to make, and sells for a cent or two more per pound than the regular commercial product.

The neutral form is more stable and less affected by general atmospheric agencies than the acid form, consequently it is less likely to cause injury. It is the safest to use on peaches and other tender plants, and should be used on varieties of apples susceptible to serious calyx burn. The neutral product is sold by different manufacturers as neutral arsenate of lead, ortho arsenate of lead, tri-plumbic arsenate of lead, or some other name which designates the chemical nature.

Varieties of apples vary in susceptibility to arsenic injury. Ingram and Missouri Pippin are most severely injured. Jonathan and Ben Davis follow in the order of susceptibility to calyx

Food-producers that meet the demands of the hour

"Food will win the war." Plant larger acreage and produce the food! Use Planet Jr implements to take care of the increased acreage.

No. 25 With Planet Jr implements you can do the work of 3 to 6 men using ordinary tools. They lighten labor, save time, and cultivate so thoroughly you can raise bigger crops than ever before. Built strong, yet light enough for woman or boy to use. They last a lifetime. Fully guaranteed.



No. 25 Planet Jr Combined Hill and Drill Seeder, Double and Single Wheel-Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and

marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. A double and single wheel-hoe in one. Straddles crops till 20 inches high, then works between them. Steel frame and 14-inch steel wheels. A splendid combination for the family garden, onion-grower, or large gardener.

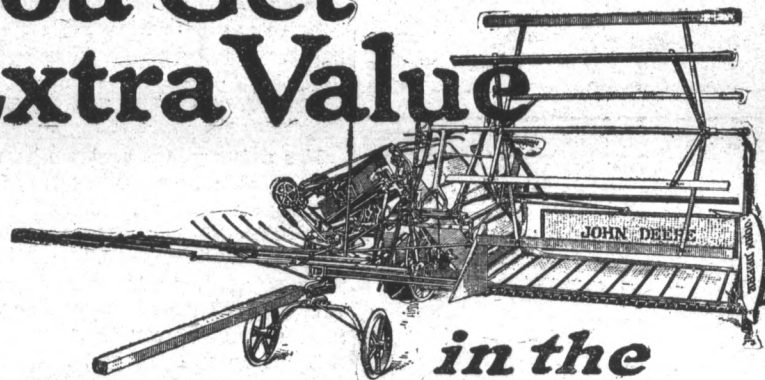
No. 17 Planet Jr is the highest type of single-wheel hoe made. It is a hand-machine whose light durable construction enables a man, woman, or boy to do the cultivation in a garden in the easiest, quickest and best way. We make 24 styles—various prices.

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You Get Extra Value in the JOHN DEERE Grain Binder

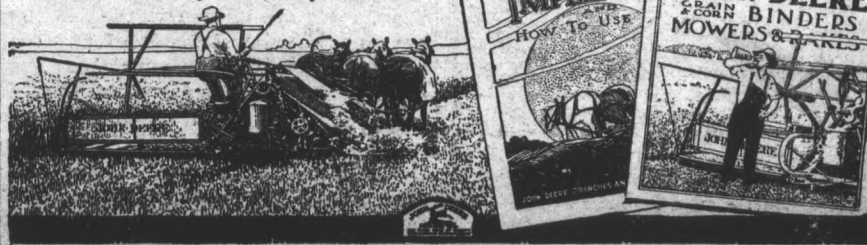


—extra value that means lower cost for repairs, fewer delays in the field, less loss of grain, better binding in heavy, tangled grain, more years of satisfactory service. The John Deere Binder reduces harvesting costs—its purchase means extra profits for you. You will recognize, quickly, the extra value of the John Deere Binder. Three packers are used instead of two—makes better bundles—handles the heavy, tangled grain without clogging. Drop Forged Steel packer shaft with bearing surfaces ground and polished, like good automobile construction.

Drop Forged Knotter parts, with wearing surfaces case hardened. Bigger and better main and grain wheels—equipped with roller bearings. Wide-lapped, hot-riveted main frame. Bearings are self-aligning. Binder platform unusually rigid. Knife always runs free. Quick turn steel tongue truck relieves the horses and operator when turning. These are only a few of the many better features that give you extra value in the John Deere Binder.

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YOU can increase the output of your garden—and do it easier than the old way—by using a Pull-Easy. The

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ADJUSTABLE

Garden Cultivator

is just the tool for keeping your garden clean and free from weeds—the only tool you need all summer long. Instantly adjustable to cultivate any width row from 7 to 18 inches. Middle tooth is easily removable for working two rows at once.

Strong, sturdy—can be used as either cultivator or rake—the ideal garden tool.

For sale by most dealers. If your dealer can't supply you, send your dealer's name with \$1.50 and your Pull-Easy will be forwarded promptly by Parcel Post, prepaid. Literature on request.



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How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder
solves the garden labor problem. Takes the place of many tools—sows, covers, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 30 combinations. \$4.50 to \$30.00. Write for booklet.

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SEED BARLEY \$2.40 BU
RECLEANED. BAGS EXTRA 25c.
YOUNG-RANDOLPH SEED CO., Owosso, Mich.

burn, but usually are no so seriously injured.

During the season of 1917 Ingram and Missouri Pippin trees sprayed with a neutral arsenate of lead were practically free from calyx burn, while on trees of the same varieties, sprayed with the regular standard product, the injury ranged from about fifty to nearly one hundred per cent. Much of this injury was severe enough to materially increase the number of culls.

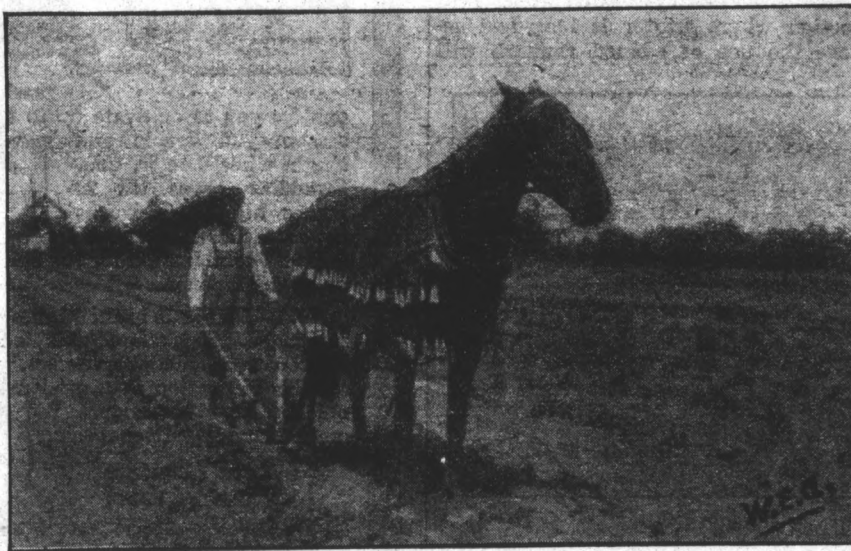
Arsenate of lime is a less expensive product than arsenate of lead. In combination with lime-sulphur it is just as effective in the control of orchard insects as is arsenate of lead, according to F. W. Faurot of the University of Missouri College of Agriculture. With it there also appears to be less tendency for the substances of which the combined spray is composed to break down through chemical action than when arsenate of lead is used. Arsenate of lime, however, either alone or in combination sprays, has somewhat greater, tendency to produce injury

tute. By careful selection it is quite possible to develop superior strains of most vegetables. Market gardeners have done this in many cases and there is no reason why home gardeners should not practice the same economy. New Hamp. C. H. CHESLEY.

LIME-SULPHUR GUARD AGAINST RASPBERRY DISEASE.

Anthraxnose, a disease which heretofore has done much damage to the black raspberry crop in Michigan, can be satisfactorily controlled by spraying with lime-sulphur, the experiment station of the Michigan Agricultural College has learned. The announcement comes as the result of work begun in 1914 by W. C. Dutton to determine which of the common spray materials (lime-sulphur, soluble sulphur, copper sulphate and Bordeaux mixture) is the most effective as a preventative of this disease of the black raspberry.

"These experiments show that at least three applications of lime-sulphur



To Grow Good Vegetable Seed Cultivate Thoroughly.

than arsenate of lead. Yet, if a good product is obtained, it may be safely used on apples, particularly on those varieties which are not specially subject to calyx burn. Arsenate of lime is also one of the cheapest and most satisfactory arsenicals to use for spraying potatoes.

GROWING VEGETABLE SEED.

For a few years past we have found it profitable to grow part, at least, of the vegetable seeds we plant each season. Judging from the present outlook it will be even more profitable next year. Good seed will be higher in price this year than ever before and indeed it seems quite probable that there will not be enough of some kinds to go around. Of course, this is in part due to increased plantings but it is particularly due to the fact that the source of supply, Europe, is not in position to produce much in this line of export.

We have grown one variety each of beets, carrots, parsnips, rutabagas and cabbages each year. These vegetables mature seed the second year from planting. In the fall good specimens of each are selected and kept in a dark place until spring, when they are planted in good garden soil. Plenty of cultivation is given and the tall stalks tied up so the winds will not break them down. Considerable moisture is also needed to develop good seed, hence the soil should be a deep moist loam. It is not advisable to select over-grown roots to grow seed from, rather take medium specimens that are smooth and true to type. In the case of cabbage, roots are chosen in the fall that have not developed heads of any considerable size. Other vegetables that produce seed in the same way, which we have tried, are Hamburg parsley, white turnip, onion, kohlrabi and winter radish. The summer radishes produce seed from spring sowings. The same is also true of spinach and let-

should be made to insure success," Mr. Dutton declares in a bulletin on the subject, "for three applications of lime-sulphur gave better results than any other material.

These applications should be made as follows:

First. In the spring, before growth starts, using lime-sulphur diluted at the rate of two and a half gallons in fifty.

"Second. When the new shoots are six to eight inches high, using lime-sulphur diluted at the rate of one and a quarter gallons in fifty.

"Third. Just before the blooming period, using lime-sulphur diluted at the rate of one and a quarter gallons in fifty.

"Clean cultivation should be practiced, as grass or weeds in the rows will hold moisture, which favors anthracnose development. Remove all bearing canes as soon as the fruit is harvested."

A bulletin, telling in detail of the experiment, is now on the press and will be available within a few days to individuals who write to the Division of Publications, East Lansing, for a copy.

SOOT AND WOOD ASHES ENRICH GARDEN SOILS.

Conserve your wood ashes and soot. Both these materials are excellent for the garden.

Common soot from chimneys where soft coal is burned is most helpful to all vegetable crops. When stored it should always be kept dry. In applying it to the garden it may be sprinkled on the ground, and hoed in, or it may be used in the form of a liquid—using one peck of soot to thirty gallons of water, mixing it, and allowing the water to stand until it is clear again.

Save wood ashes, particularly those from hard woods. These are very rich in potash. Coal ashes, however, are not good for the garden.—M. A. C.



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INSTANT POSTUM

is now used regularly by thousands of former coffee drinkers who live better and feel better because of the change.

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a new combination which bids fair to replace the old Lime Sulphur-Arsenate of Lead and Bordeaux-Lead mixtures, in both orchard and garden. It is more powerful and much less expensive. 1 gallon and 3 lbs. makes 150 gallons of spray.

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TIMOTHY SEED \$4.00 per bushel. High purity and germination. first class in every way. Timothy-Alsike Mixture \$4.50 per bushel, 45 lbs. Bags extra at 25c. each. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

Potato Growers Convene

THE executive committee of the Michigan Potato Growers' Association held a conference in Grand Rapids on April 3. A. M. Smith, of Lake City, president of the association, presided and the situation was gone over carefully. Michigan's 1917 potato crop has been estimated at thirty million bushels and the shipments to date have been about five million bushels, leaving twenty-five million bushels still on hand. President Smith says: "Let us be conservative and say that one-third of the total crop, or 10,000,000 bushels, are still in the hands of farmers. We'll say that there's 6,000,000 bushels that must be shipped out, and ten weeks to ship them in. That means you must ship 600,000 bushels a week at 1,000 bushels to the car. Right now the country over the average of cars is only about 300 per day. Michigan must have 100 cars a day, but has been getting only thirty-five."

On suggestion of State Director of Markets McBride the committee went on record as willing to sell potatoes to the government and accept Liberty Bonds in payment. It was also voted to urge upon congress the passage of an act that would permit the quarter-master general to buy potatoes direct

from the farmers without the formality of bidding. A communication from Congressman McLaughlin, of Muskegon, stated that Senator Wm. Alden Smith's amendment to the agricultural bill forbidding grading of potatoes was now in conference, not having been passed by the house. He said that he would urge its passage but that the Department of Agriculture was strongly opposed to elimination of grading rules. The committee of growers wired Congressman McLaughlin favoring one grade made up of tubers passing over a one and three-quarter round mesh screen, instead of the present federal standard of one and seven-eighths inch.

In order that the farmers may get in closer touch with the food administration the growers adopted a resolution offered by Jason Woodman, of Paw Paw, asking that "a practical farmer, living on his farm, and familiar with the production of potatoes, beans and sugar beets, be appointed on the advisory committee of Mr. Hoover's department."

Reports at the meeting indicated that the potato acreage in 1918 will be much smaller than last year.

Kent Co.

ALMOND GRIFFIN.

Cooperation In Washtenaw

WASHTENAW county has turned several somersaults on cooperation's lawn in very recent months. These acrobatic stunts were not accomplished without long and repeated attempts to put them over, although the first has been followed by others with surprising closeness.

Last spring, under war's emergency, Washtenaw was one of the counties to be assigned a temporary farm agent. Up to that time county sentiment had not waxed strong enough to win an appropriation for a regular agent from the board of supervisors. At the October meeting, however, this appropriation was voted and March 1 saw such an agent installed in his new office.

On the day the agricultural agent arrived, there was being held in the city of Ann Arbor a banquet attended by two hundred farm men and women who took that pleasant way of completing the organization of a county farm bureau.

Farmers Take Initiative.

Happily, the agent chanced to arrive in conjunction with the bureau. While they will no doubt mean much to each other, the bureau had visions and plans it meant to see through, whether it had an agent to work with it or not. Recognition of the need of some such federation of rural forces had grown out of a farmer's Thanksgiving festival, held at the county seat last fall, from which \$2,000 was turned over to the Red Cross. The work of this bureau is now in the care of Earle W. Martin, president, associated with an executive committee consisting of six men and one woman, representing different sections of the county.

The Washtenaw Cooperative Association broached last August, is now organized on a county basis for purposes of "handling, buying, selling, shipping or placing upon any market agricultural or dairy products, or any substance or commodity raised, grown or produced from agricultural or dairy pursuits or auxiliary thereto."

Profit by Others' Experience.

In forming this association, the farmers took council of officers of the Square Deal Live Stock Shipping Association, of Charlotte, and will operate along similar lines as that successful organization. It began operations in January last by shipping live stock regularly every week from Ann Arbor. The scope of its undertakings will be extended as opportunity and need de-

velop. It had eighty members, when it began to ship, on a basis of \$5.00 per member, one-half paid in. Its board of directors is composed of the following substantial farmers: George Laverder, president; George McCalla, vice-president; Charles McCalla, secretary-treasurer; Charles P. Knight, manager; Charles Seybold, Charles S. Foster and R. J. Bird.

Organize Dairy Company.

The organization of the Ann Arbor Dairy Company is still another cooperative effort to be credited to heretofore conservative Washtenaw. This is an association, on the part of milk producers roundabout the city of Ann Arbor, to get their dairy products from farm to consumer, in the most approved condition, at least expense, and to do it themselves.

This aim, on the part of the dairy-men means a grading up of the quality of milk they produce, the cutting out of duplication in delivery routes, reduction of all cost of handling, and utilization of by-products to best advantage. To do these things in the most sanitary and economical manner, by methods and with results above reproach by either consumer or producer, is a high-minded undertaking. It is, moreover, a job that calls for discrete management and the most modern equipment.

The milk farmers went about attaining these ends—having once agreed to accomplish them—by organizing and incorporating under Act 398 of the laws of 1913. They organized with \$35,000 capital stock, shares being \$100 each. Members vote—not stock—is the rule. Their first step was to buy out the largest existing milk distributing firm and hire its proprietors to manage their distributing depot for the farmers. To this depot all members bring or send their milk daily. This enabled the association to lay off a portion of the delivery wagons at once and further reduction will be made as soon as the company has adequate quarters and equipment.

Equip a Modern Creamery.

These quarters are now being provided as rapidly as possible. Ground is already broken and erection of an \$18,000 modern creamery and receiving plant is being pushed. June 1 is the date promised for its completion.

This beautiful building designed by an experienced Holland dairyman to meet every up-to-date dairy need, will



"FARM-WEAR" SHOES For Farm Wear

More than a hundred thousand thoughtful American farmers would no more think of starting out to do farm work in any other shoes than

than they would of starting out to cultivate a ten-acre field with a garden rake.

This message is for those of you who are not wearing these especially made shoes. They are made of solid leather over standard lasts and are

Double Tanned to Resist Uric Acid

They fit better, feel better and look better than the ordinary shoe and are made in four heights, all sizes, black and chocolate—extra wide tread.

You can trust the judgment of a hundred thousand farmers.

If your dealer doesn't carry "Farm-Wear" Shoes, tear out this advertisement, write your name and address in the margin, also size and height of shoe wanted—if single or double sole—and advise us if we shall mail you a pair.

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Every buyer of a Silo, as a protection to himself, should have the ROSS Silo Catalog. Information therein is of benefit in more ways than one.

The ROSS Wood Stave "HINGED DOOR" Silo is recognized as "THE LEADER" in Wood Stave Silo construction.

Every buyer of a silo will make money if he buys at once and to be shipped at once. Don't gamble with the market.

Buy a "GUARANTEED" PRICE. Buy a ROSS Silo the guarantee on which is equal to what the purchaser himself would write.

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Special Proposition to Agents

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Open Hearth, full weight, heavily galvanized Fence. Factory to you. Freight prepaid. Get our prices. STANDARD WOVEN WIRE FENCE CO., Dept. 16 Cleveland, O.



SAVE: Use Ajax Fence for Every Need! Gives more service because of extra quality wire—extra heavy galvanizing—extra strong construction. These are Ajax virtues. Though reasonable in price, the cost per rod per year is the only "cheap" thing about it. Write—Address Dept. O 110

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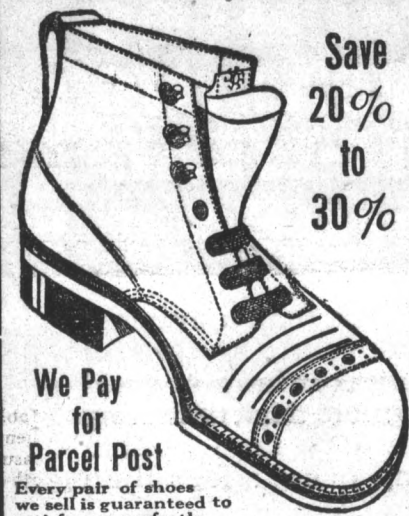


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Money refunded if not satisfactory. State size and send outline of foot on paper. Our catalog describes many styles of underpriced shoes. Send for it.

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Corn grown by men who make a business of growing corn for seed. Grown far enough North to ripen in Michigan. All germinates 70% or better.

White Cap Yellow Dent	\$8	Improved Leaming	\$8
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Bags Extra 50c each.

All shelled corn, 56 lbs. per bu., f. o. b. Ypsilanti.

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Farm, Garden and Orchard Tools

Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The IRON AGE Potato Planter solves the labor problem and makes the best use of high priced seed. Means \$5 to \$30 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

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No Doubles
Bateman M'fg Co., Box 24B, Grenloch, N. J.

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The greatest labor-saving tool ever invented for garden work. Runs easier and does better work than any other garden cultivator upon the market. Carries its own weight. Set it to stir the soil any depth you wish. Works the soil at an even depth all down the row. Easier to push than a lawn mower. Use it two weeks; if not satisfied, return it to us and we will refund your money. Write today for catalogue and price list.

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40 styles and sizes for every purpose. Catalog free. COLLINS PLOW COMPANY, 1117 Hampshire St., Quincy, Ill.

Please Mention The Michigan Farmer When Writing to Advertisers

hospitably inviting inspection and patronage. Closer view will discover the best obtainable equipment and methods for receiving, pasteurizing, cooling, bottling and cold-storing milk, butter, buttermilk and cream. The very blueprint plans of this fine building make a dairy farmer hold his head higher. He recalls, as he peruses details for testing and giving highest sanitary care to the product of his heard, that it is a tedious road he has been traveling from cow to consumer. He recalls, also, the poor equipment

he started with, the increasing cost as outside inspectors scored his premises, the time and expense of peddling his milk from door to door, and the slow-to-rise pay for it all. Small wonder that his back straightens as he contemplates his share in this new way of improving and owning the entire business. That he will be found faithful to the trust—sanitation and cream tests included—and produce a better article than under the old conditions, no one needs fear.

JENNIE BUELL.

Wire Worms and Their Control

By DON B. WHELAN

WIREWORMS are to be recognized as one of the worst pests of corn, and carry their destructiveness to wheat, oats, potatoes and many other crops. They are yellowish-brown larvae having hard polished skins, the bodies slender and cylindrical in shape, measuring from three-quarters of an inch to an inch in length. The most injurious form in Michigan prefers low, mucky or poorly drained soils, feeding on the roots of grasses, grains and the like. Two or three years are required for them to reach maturity, which accounts many times, for the damage done by this pest a year or two after sod has been turned under. The adult of the wireworm is a brownish beetle which, from its habit of snapping its body up in the air, when turned on its back, is known as a "click-beetle," "skipping-jack" or "snapping-beetle."

Where They Live.

Early in the spring these beetles come out from the soil and soon lay their eggs in sod land or land thickly overgrown with grass. These eggs hatch into tiny wireworms. It frequently happens that, during the first year, the young worms feed upon sod, that has been turned under, and do not do their greatest harm, to the cultivated crop until the second season. They require about three years to turn into beetles. Towards midsummer of the

year in which they become full grown they form little cells in the soil in which they transform to the pupa or resting stage. About a month later they change into the beetles but stay in the ground until the following spring.

Control Measures.

Susceptible crops like corn, potatoes or root crops should not be planted after plowing up grass sod, especially if wireworms are known to be present. They do not thrive well in clover land and so this crop is a good one to use on infested soil. If wheat is going to follow infested corn land it will be best to have the land well tilled as soon as the corn is removed. Plowing kills many worms by destroying their food supply and preventing them from preparing suitable quarters for the winter.

Inasmuch as many of our worst cutworms live in poorly drained soil it will be well to have such land tiled.

The use of commercial fertilizers has a tendency to overcome wireworm injury. It will not kill the insect but will aid the plant in overcoming its work. It is sometimes advisable to drain land and add lime in order to make it possible for the clover to establish itself, and this has given rise to the impression that lime itself kills wireworms. The action of the lime is simply to change the physical character of the soil which makes it unfavorable to these pests.

REAL NEED OF MICHIGAN AGRICULTURE.

(Continued from page 513).

those constructive lines that help you get a fair share of the consumer's dollar; help you to adopt a permanent system of soil fertility instead of keeping your soil on the downward road as the years roll by, for you must grow a good crop or it cannot be produced economically.

Again, only well bred and well fed live stock can make you anything but expense, so in his duty the agent fails unless he stays by the job until you grade up your stock to an efficiency standard. Not only must you have a good price for live stock output but stock that will give you the greatest value for food and labor consumed is a crying necessity.

Again, Mr. Farmer, unless you get together in your community organization and standardize the product that you grow commercially how can the county agent meet his obligation? He knows that all other business is standardized for best service and now the world is demanding that you come and do likewise if you would hold the land as a good husbandman.

If your county agent is the mouthpiece for the best forces at work in your community and diligently strives to develop in your county the vital thing that will make your people independent, efficient and prosperous, get back of him with all your influence and take a hand in the good work else you are fighting against the common well and become an enemy to the country's highest good. The issue is now squarely up to you, Mr. Farmer, to feed the world is not only your opportunity but your sacred duty.

To produce food stuffs at a fair margin of profit to yourself is a universally conceded right. If you fail to do this everyone shares your misfortune for a business to become a great and permanent factor in our commonwealth, must be profitable. The middleman will have his share and no one but yourself can be blamed if you through your own organization do not champion your own needs and get them recognized. The distributor hears your murmurings on one hand and the consumer's trouble on the other, and wonders how he can organize for expansion and greater activity. His ranks are small and his dreams easily realized.

The consumer, too, often pictures you, Mr. Farmer, hoarding your dollars and a large part of your potato crop for still higher prices and he really believes you are leisurely enjoying the huge war profits of your business. If we try to tell him the truth and give you a defense that is more than justified by conditions, like yourself, he accused us of an effort to protect and still farther enrich the man on the land. He comes back with this final argument: "I pay forty-five cents for a peck of potatoes and sixty-five cents for a peck of inferior apples. What farther proof do I need?"

The officers and members of the farm bureaus of Michigan have already reached the stage in their development where a state-wide affiliation of the best and most constructive forces at work in every county in our state could be coordinated for the most representative body of economic and industrial workers the state has ever seen. Such an organization of constructive units could speak authoritatively for the farmers of Michigan in

a voice that would be heard. Under such a democratic body the misunderstandings that have arisen in the minds of the producer, distributor and the consumer in regard to the gross neglect or willful manipulations of the other fellow who very largely is innocent of the great transgression, could be clarified and in its stead could be worked out a plan based on mutual understanding, confidence and a square deal for all. In the last analysis the great principal at the base of the economic world today is service. On a community service platform all interests can get together for mutual good and cooperation. When a service is squarely and fairly earned with a fair margin of profits run openly and above board all can get behind the program with enthusiasm and power.

NATIONAL CROP REPORT.

The Crop Reporting Board of the Bureau of Crop Estimates, United States Department of Agriculture, makes the following estimates from reports of its correspondents and agents:

The average condition of winter wheat on April 1 was 78.6 per cent of a normal, against 63.4 on April 1, 1917; 78.3 on April 1, 1916, and 83.6, the average condition for the past ten years on April 1. There was a decrease in condition from December 1, 1917, to April 1, 1918, of 0.7 points, as compared with an average decline in the past ten years of 5.7 points, between these dates. Upon the assumption of average abandonment of acreage and average influences on the crop to harvest, condition April 1 forecasts a production of about 560,000,000 bushels, which compares with 418,070,000 bushels, the estimated production in 1917, and 480,553,000 in 1916.

The average condition of rye on April 1 was 85.8 per cent of a normal, against 86.0 on April 1, 1917, 87.8 on April 1, 1916, and 89.0, the average condition for the past ten years on April 1. The condition of rye forecasts a production of approximately 86,000,000 bushels; last year's estimated production was 60,145,000 bushels; the 1916 crop 48,862,000, and the average of the preceding five years 41,399,000 bushels.

HENS SHOULD NOT BE HURRIED TO MARKET.

"A rush of too many fowls to market as soon as the restriction against selling laying hens is removed, may result in food losses," says the United States Department of Agriculture. "Think twice before selling a hen that is still laying. Green food is becoming more plentiful and the demand for eggs continues. Universal marketing of fowls may react on prices as well as cause spoilage of dressed poultry."

A GOOD LETTER.

The writing of good letters is an art that seems to come with practice and the farmer who writes frequently to his friends and relatives seems to have less trouble with business letters than the farmer to whom writing has always been drudgery, which he liked to leave to his wife. The more that a farmer writes the easier it becomes and the faster the letters can be finished. If no effort is made to write letters for a long time the work of writing is apt to be dreaded. A course in letter writing should be emphasized in our rural schools and the pupils should be encouraged in writing to boy and girl friends in distant communities. When Bill and Jimmy write to each other once a month and tell all that is happening on their home farms, they are learning to express themselves clearly on paper and later in life the training will be valuable to them in the writing of business letters.

Ingham Co.

R. G. KIRBY.

"Give me a quart of Oil"

This careless request may bring costly penalties



THE garage man comes out. The motorist says, "Give me a quart of oil." His "quart of oil" is poured into the crank-case, or reservoir. The car goes on. No doubt the motorist thinks he has amply protected the 1500-odd parts of his engine.

Far from it. One of the surest ways to invite friction-drag and engine trouble is to say, "Give me a quart of oil."

"Give me a quart of Oil" invites LOSS OF POWER

Escape of explosion past the piston rings, loss of compression and loss of power frequently result from oil of incorrect body. The power-loss is felt most on heavy roads and on the hills.

You can get full compression—complete power—only by using oil whose body suits your engine. Correct body is seldom secured by saying, "Give me a quart of oil."

"Give me a quart of Oil" invites WEAR OF BEARINGS

The problem of bearing lubrication is far from simple. Bearings differ widely in type and size. The oiling systems which supply them also differ. Adjustments vary.

Both the quality and body of the oil must suit these conditions. For every oil that suits your engine bearings, you will find many which will cause undue friction. An almost sure start toward bearing trouble is "Give me a quart of oil."

"Give me a quart of Oil" invites CARBON DEPOSIT

Guesswork won't eliminate this trouble.

Both the quality and the body of the oil must be considered.

Suppose the body is too light for the piston clearance. The oil then works too freely into the combustion chambers. In burning, excess carbon accumulates unless the oil's ash is light and naturally expelled through the exhaust.

An easy road to carbon trouble is, "Give me a quart of oil."

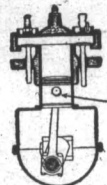


"Give me a quart of Oil" invites WEAR OF PISTON PINS

Piston-pin lubrication is a difficult problem and little understood.

The location of the piston pins within the heated pistons and the slight oscillating motion of the pins or bushings demand an oil which will spread readily, yet maintain the proper film between the pins and bushings.

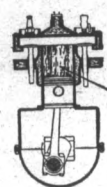
Quick damage will come if the oil fails to meet these conditions. To encourage piston-pin troubles prematurely, it is only necessary to say, "Give me a quart of oil."



"Give me a quart of Oil" invites SCORED CYLINDER WALLS

Scoring frequently results from oil of low lubricating quality. Often, also, the oil's body is too light. Then the cylinder walls have no protecting film. Scratching results.

Too often the blame can be traced straight to "Give me a quart of oil."



How to secure the Correct Oil for your car

DO NOT say, "Give me a quart of oil." You want an oil of the highest quality and of the correct body to meet the lubricating requirements of your engine.

Ask for that oil and get it.

At the right we print, in part, our Chart of Automobile Recommendations.

This Chart is the result of the most far-reaching and thorough study of automobile lubrication that has ever been made.

It was prepared by a company whose authority on scientific lubrication, for every class of machinery, is recognized throughout the world—the Vacuum Oil Company.

It was prepared after a careful analysis of the lubricating requirements of each make and model of American and foreign car.

For years this Chart has been recognized as the scientific guide to correct automobile lubrication.

The superior efficiency of the oils specified has been thoroughly proven by practical tests.

Make a note of the grade of Gargoyle Mobiloils specified in this Chart for your engine. Then make sure that you get it.

You will then give your engine oil of

"Give me a quart of Oil" invites NOISE

Noise is often a sign of worn parts—resulting from friction.

It may be a dull "thump" at every revolution of the main shaft. It may be "knocking" of worn piston pins. It may be "hissing" within the cylinders. It may be "knocking" caused by excessive carbon deposit.

When a comparatively new car pounds and racks its way along the roads it is seldom necessary to ask what brought on premature old age. Generally it is undue friction—resulting from incorrect lubricating oil. A way to invite premature noise is an off-hand request, "Give me a quart of oil."

"Give me a quart of Oil" increases MAINTENANCE COST

If the oil's quality is low, an excess quantity will be consumed and still the proper film will not be maintained.

If its body is incorrect, it may fail to reach and protect all moving parts.

In either case, excessive friction-drag results. Fewer miles are obtained from each gallon of gasoline. Your fuel and repair bills mount up.

This common waste is the frequent result of "Give me a quart of oil."

"Give me a quart of Oil" reduces SECOND-HAND VALUE

What fixes the selling price of a used car? (1) The condition of the engine. (2) The condition of the chassis. (3) The condition of the body.

The engine is the vital part of the car. The engine condition, therefore, is most important.

At an auction sale in New York City, second hand cars of uniformly prominent makes were auctioned off. The bodies were in good condition. The prices of the cars originally ranged from about \$1000 to \$3000. The selling price in some cases was as low as \$200.

Why? Because the engines and other mechanical parts were badly worn.

Was the wear due to long service? No. The age of most of these cars disproved that. Premature wear was evident.

It is safe to say the owners of these cars had used the common expression — "Give me a quart of oil." They paid a high price for their carelessness.

the highest quality and of the correct body. Its use will result in

Saving of fuel Saving of oil
Maximum power Minimum repairs

The requirements of the transmission and differential of your car are equally important. The correct grades of Gargoyle Mobiloils for the transmission and differential are specified in the complete Chart of Recommendations which you will find on your dealer's wall.

Write for 64-page booklet containing complete discussion of your lubrication problems, list of troubles with remedies and complete Charts of Recommendations for Automobiles, Motorcycles, Tractors and Motor-boat engines.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. If your dealer has not the grade specified for your car, he can easily secure it for you.



Mobiloils

A grade for each type of motor

VACUUM OIL COMPANY, New York, N. Y., U. S. A.

Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world

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Correct Automobile Lubrication

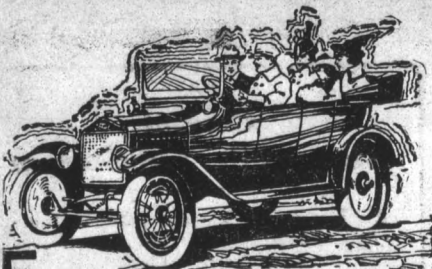
Explanation: The four grades of Gargoyle Mobiloils, for engine lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"
Gargoyle Mobiloil "E"
Gargoyle Mobiloil "Arctic"

In the Chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloils that should be used. For example, "A" means Gargoyle Mobiloil "A," "Arc" means Gargoyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

This Chart is compiled by the Vacuum Oil Company's Board of Engineers and represents our professional advice on Correct Automobile Lubrication.

AUTOMOBILES	1918		1917		1916		1915		1914	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Abbott	Arc	Arc								
Abbott-Detroit (8 cyl.)			Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Allen	A	A	A	Arc	A	Arc	A	Arc	A	A
Apperson (8 cyl.)	A	A	A	A	A	A	A	A	A	A
Auburn (4 cyl.)	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
" (6-38 & 6-39)			A	Arc	A	Arc				
" (6-39B) (Testor H)	A	Arc								
" (6-39B) (Cont'l.)	Arc	Arc	A	Arc						
Autocar (2 cyl.)	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Briscoe (8 cyl.)			A	Arc	A	Arc	A	Arc	A	Arc
Buick	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Cadillac	A	A								
Case	A	A	A	Arc	A	Arc	A	Arc	A	A
Chalmers (6-40)	A	A			A	Arc	A	Arc	A	A
" (6-30)			A	A	A	Arc				
Chandler Six	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Chevrolet (8 cyl.)	A	A	A	A	Arc	Arc	Arc	Arc	A	Arc
" (F.A.)	A	Arc								
Cole (8 cyl.)	A	A	A	A	A	Arc	Arc	Arc	A	Arc
Cunningham (8 cyl.)	A	A	A	A	A	A	A	A	Arc	Arc
Dart (Mod. C)	A	Arc	A	Arc	A	Arc	A	Arc	A	A
" (2 & 3 1/2 ton)	A									
Detroit	A	Arc	A	Arc	Arc	Arc	A	Arc	A	A
Dodge	A	Arc	A	Arc	Arc	Arc	A	Arc	A	A
Dort	A	Arc	A	Arc	Arc	Arc	A	Arc	A	A
Empire (4 cyl.)	A	Arc	A	Arc	Arc	Arc	Arc	Arc	Arc	Arc
" (6 cyl.)	A	Arc	Arc	Arc	Arc	Arc				
Federal	A	A	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
" (Mod. S-X)										
" (Special)	Arc	Arc								
Fiat	B	B	B	B	B	B	B	B	B	B
Ford	E	E	A	E	E	E	A	E	A	E
Franklin	A	A	A	A	A	A	A	A	A	A
Grant	A	Arc	A	Arc	A	Arc	A	Arc	Arc	Arc
Hal-Twelve	A	A			A	A				
Haynes	A	Arc	A	A	A	Arc	A	Arc	A	Arc
Hollier (12 cyl.)	A	A	A	Arc						
" (8 cyl.)	A	A	A	A			A	A	Arc	Arc
Hudson (Super Six)	A	Arc	A	Arc	A	Arc	A	Arc	Arc	Arc
Hupmobile	A	Arc	A	Arc	A	A	A	Arc	A	Arc
Jackson (8 cyl.)	A	A	Arc	Arc	A	A				
Jordan	A	A	Arc	Arc	A	A	A	A	A	A
Kelly Springfield	A	Arc	A	Arc	A	A	A	A	A	A
King (8 cyl.)	A	A	A	A	A	A	Arc	Arc	A	A
" (Com'l.)	Arc	Arc	Arc	Arc	Arc	Arc	A	Arc	Arc	Arc
Kissel Kar	A	Arc	A	Arc	A	A	A	A	A	A
" (Mod. 48)										
" (12 cyl.)	A	A								
Lexington	A	Arc	Arc	Arc	Arc	Arc	Arc	Arc		
Liberty (Detroit)	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Lippard	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Stewart					A	Arc				
" (Mod. M)					A	Arc				
" (Mod. MW)					A	Arc				
Locomobile	A	E	E	E	E	E	E	E	E	E
McFarlan	A	A	A	A	A	A	A	A	A	A
Madison (8 cyl.)	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Marmox	A	A	A	A	A	A	A	Arc	A	Arc
Maxwell	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Mercer (22-70)	A	A	A	A	A	A	A	A	A	A
Mitchell (8 cyl.)	A	Arc	A	Arc	A	Arc	Arc	Arc	A	Arc
Moline-Knight	B	A	A	A	A	A	A	A	A	A
National (12 cyl.)	A	A	A	A	A	A	A	A	A	A
Oakland (8 cyl.)	A	A	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Oldsmobile	A	A	A	A	Arc	Arc	Arc	Arc	Arc	Arc
Overland (8 cyl.)	A	A	A	A	A	A	A	A	A	A
Owen	Arc	Arc	Arc	Arc	A	Arc	Arc	Arc	Arc	Arc
Magnetic (Mod. M25)	A	Arc	Arc	Arc	A	Arc				
Packard (12 cyl.)	A	A	A	A	A	A	A	A	A	A
" (Com'l.)	A	A	A	A	A	A	A	A	A	A
Paige 14 (6 cyl.)	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	A	A
" (6-36)					A	Arc	A			
" (6-38-39)										
" (6-40)	A	Arc	A	Arc						
Paterson	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Pathfinder (12 cyl.)	A	A	A	A	A	A				
Peerless (8 cyl.)	Arc	Arc	A	A	A	A	Arc	Arc	Arc	Arc
Pierce Arrow	A	A	A	A	A	A	Arc	Arc	Arc	Arc
" (Com'l.)	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Premier	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Regal (8 cyl.)	A	A	A	A	A	A	A	A	A	A
Renault (French)	A	A			A	Arc	A	Arc	A	Arc
Reo	A	Arc	E	E	A	A	A	A	A	A
Riker	A	A	E	E	E	E	E	E	E	E
Saxon	E	E	E	E	E	E	E	E	E	E
Selden	A	A	A	A	A	A	A	A	A	A
" (1/4 ton)										
Simplex	A	A	A	A	A	A	A	A	Arc	Arc
Stearns-Knight (8 cyl.)	B	A	A	A	B	A	B	A	B	A
Studebaker	B	A	A	A	B	A				
Stutz	A	A	A	Arc	A	Arc	Arc	Arc	A	Arc
Vette (4 cyl.)	A	A					A	Arc	A	Arc
" (6 cyl.)	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
" (2 & 3 1/2 ton)	Arc	Arc	A	A						
" (4 ton)	A	A								
Westcott	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
White	Arc	A	A	A	Arc	Arc	Arc	Arc	Arc	Arc
" (16 valve)	A	A	A	A						
Willys-Knight	B	A			B	A	B	A	A	A
Willys Six	A	A								
Winton	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc



Oh! That AWFUL Vibration

HARD on the nerves. **HARD** on the tires. **HARD** on the engine. The jiggle and jar wearies both driver and passenger. They take all the joy out of motoring. Why not "iron" out the roads for your Ford? Make your Ford ride like a young Packard. Why continue to let vibration spoil your motoring?

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**Cure
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Shock Absorbers \$10 Except in Canada and West of the Rockies

Over 200,000 Ford owners now use the Aitchandee to give their cars the smooth, even glide and "road-ironing" comfort of a long wheel base car. The cantilever principle, first developed in Aitchandees, gives a different tension on the upward and downward thrust due to road bumps. This reduces wear and tear on engine and transmission. Doubles the life of a Ford, as well as its comfortable riding qualities. That's why Aitchandees are used on ambulances in France. That's why they should be on your car. Ask your dealer. Send your name and address on postcard for Free Booklet and Low Price List.

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When writing to advertisers please mention
The Michigan Farmer.

The Sheep Industry in Mich.

WITH ewe lambs selling around twenty-one to twenty-two cents a pound, the price is too high for the average farmer engaging in the sheep industry in Michigan. This is the opinion of H. H. Halladay, chairman of the State Live Stock Commission, and though he has contracts for six or seven carloads of sheep suitable for starting foundation flocks, he tells the farmers that they had better wait awhile. "We want every man who goes into sheep to be successful," he says, "even if he starts in a very small way. I am trying to handle this matter just as I would my own personal business, and am sure that I would not think of buying the stock at the present high prices to place on my farm."

"We are keeping close tab on the different stock yards and find that receipts are now largely wether lambs, while such of the ewe lambs as do come are either too fat or would not

May. Many of the sheepmen figure on shipping their sheep to the hay, leasing or buying large acreages cleared and in hay, with improvements, and winter their sheep here."

A newly organized sheep company has opened a demonstration ranch at Phillips, Wis., and is planning to open other ranches in Florence county, Wis., and Dickinson county, Mich. Wesley A. Stenger, of Milwaukee, is sales manager and in a recent talk at Menominee he said: "The amount of wool needed per capita is eight pounds per year and the amount of meat needed is seventy-five pounds. This requires one sheep for every person while statistics show that this country has less than one sheep for every four persons. The upper peninsula of Michigan and northern Wisconsin have wonderful possibilities for the sheep men. Our climate is far superior to that of the west and we are nearer the great con-

order to make good slop with the buttermilk, I think it would be just as well to purchase the hominy feed and mix the hominy feed and buttermilk to make a good, thick slop, just as thick as you can pour it from the pail, and give the pigs all they can eat of it three times a day. It would be advisable to have them have free access to water besides. I would advise putting a good handful of salt in each barrel of slop. I don't believe you can get a better ration for these growing pigs. Buttermilk at two cents per gallon is certainly a cheaper source of feed than tankage at \$4.95 per cwt.

BARLEY AS HOG FEED.

Barley will supply grain for hogs sooner than any other crop. A large number of farmers have been asking about this crop because of the scarcity of mature corn for feeding hogs this spring and summer, and because commercial hog feeds are so costly.

Success Beardless barley is the best



First Michigan Lambs to Sell at \$20. Shipped from Vernon and Bought by Parker, Webb & Co.,

be suitable for foundation stock. Those of choice quality with wool on are selling above twenty cents per pound on the Chicago market and one reason no doubt, for the high price is the fact that the growers expect to receive higher prices for wool in the near future. Michigan farmers can well afford to wait until the weather becomes more settled.

"During the summer months sheep can be handled off from grass and into their own pastures, thereby avoiding the expensive feed bills which will be incurred if they purchase at this time. I hope that the farmers who want sheep will not grow impatient, but will feel that we are trying to steer them right. I realize that this is a time when we need more wool and more meat and would suggest that the matter of purchasing thin cattle to place upon our grazing lands in Michigan is worthy of consideration at this time."

It is reported that the New York Central Railroad has bought sheep on the Buffalo yards for its grazing lands near Gaylord, Mich. Last year the railroad company pastured about 9,000 head there and it expected that the number this season will be larger.

Chas. R. Hutcheson, who is working among the western sheep men in the interests of the Upper Peninsula Development Bureau, says: "I feel that we can put 100,000 sheep into Cloverland during the summer, but we must know where they are going to get their winter feed for these western ewes. This movement is bound to be a great success if properly handled. I have a prospect for one Chippewa county tract from an excellent sheep man and breeder of pure-breds. He will ship 2,700 ewes to reach Michigan early in

suming markets. The upper peninsula is 2,000,000 sheep short of what it needs. The sheep industry will bring millions of dollars to this country, replacing the lumbering industry which is about through. The government is urging everyone to raise sheep for wool and Michigan people are performing a patriotic duty as well as starting a profitable business in engaging in this industry. With sheep raising the woolen mill industry will also develop in Michigan."

Kent Co.

ALMOND GRIFFIN.

THE BEST FEED FOR FATTENING HOGS.

We have a number of fall shoats and would like to fatten them as quickly as possible. For feed we can purchase hominy feed at \$65 per ton, oat middlings at \$2.30 per 100 lbs; buttermilk at two cents per gallon, and tankage at \$4.95 per 100 lbs. Would you advise using a self-feeder or feed it in a slop and what proportion should be used? Would like also a ration of the above feeds for brood hogs and growing pigs.

Wayne Co.

W. B.

If you would use buttermilk you would not need to purchase tankage because the buttermilk will supply all the protein you need.

While hominy feed at \$65 per ton seems high, yet, if we compare it with corn at \$1.75 per bushel we find the corn costs \$62.40 per ton. There is nothing better than the corn, but from experience that I have had in feeding hominy feed I should say that this food comes next to corn, if it is not the equal of corn, in fattening hogs.

To feed buttermilk in a fattening ration I would prefer to feed it in the form of a slop and as you would have to have the corn ground into meal in

variety for Indiana. Seed eight to ten pecks per acre just as early in the spring as the weather and the condition of the soil will permit. Seed it like oats, and on corn stubble land to save the labor of plowing. Barley does well in any part of the northern half of the state. It is ready to use between July 15 and August 1.

Barley is about equal to corn, pound for pound for feeding hogs. But while corn does not need to be ground for pigs, barley should. The grains are too small and hard to be masticated and digested readily when whole. While the pigs may not like the barley very well at first, they will soon become accustomed to it. But they will do better if ground barley is mixed half and half with middlings or some other palatable hog feed. Gains are more rapid, too, when some high protein feed like tankage is fed along with the barley and other feeds.—J. I. Christie, Purdue University.

FRENCH NEED SUGAR.

Official sugar production figures indicate the extent of the destruction, and emphasize the French sugar needs which must be filled by American aid. The year of 1912-13, 213 French mills turned out 967,440 short tons of sugar. For 1916-17, sixty-five mills produced only 204,405 short tons. To further complicate the French sugar situation the yield per acre of sugar beets decreased from 13.30 short tons per acre in 1912-13, to 11.70 short tons per acre in 1916-17.

Economy makes happy homes and sound nations. Instill it deep.—George Washington.

MICHIGAN FARMERS CAN HELP UNCLE SAM CONSERVE LEATHER.

There are one hundred and one different varieties of leathers on the market, each with its particular values and uses.

Leather of all descriptions has been constantly going up in price. This increase in price is caused directly by the enormous demand made by Uncle Sam for leather of all descriptions.

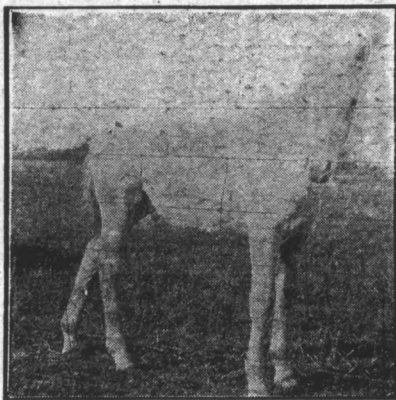
The one feature that concerns the farmer most is the manner in which the leather market and the price of leather affects the shoes worn by the farmer. In times past people were inclined to judge shoes more by appearance than by the leather from which they are made.

Now that the price of shoes has increased materially, people are beginning to realize the importance of the proper selection of shoes as they appeal to the individual person.

The very nature of farm work makes it necessary that the farmer buy shoes adaptable for his work. The farmer who gets the biggest shoe value for his money is the one who judges shoes as they appeal to his particular use.

No farmer would think of buying a pair of dress shoes for everyday wear, but why not go a little farther than that and buy shoes that are especially made to answer the demands of the farmer.

First, there's the style of the shoe to be considered. The farmer who works on a sandy soil naturally wants



Coming Farm Power.

a high shoe to prevent the sand from coming in at the top, while the farmer who works in heavy or loamy soil would find a lower shoe more practical.

When buying shoes the farmer should consider more than the first cost, because the pair of shoes on which the first cost is rather high may be lowest priced in the long run because they last longer. Year in and year out the farmer will pay out less per year for shoes if he pays a dollar or two more per pair than if he bought shoes on the basis of low first cost.

Shoe leather can be dressed up to give it almost any appearance and for that reason a good looking shoe may be made from a poor grade of leather. To make shoes that will give maximum wear for farm work a selection of the hides is the first important item. If the hides are selected with the view of making shoes that will give the maximum service for farm wear, then it is pretty certain that such shoes will be worth a dollar or two extra in comparison to shoes not made of such selected hides.

Over in Russia the deluded people thought an honorable peace could be negotiated with Germany, but they know differently now, as they toil in the fields for the kaiser's soldiers. The only way to negotiate a peace with the Kaiser is with a bayonet. We have sent our young men over to France to do the negotiating. Let us furnish them with the bayonets, food and clothing while they are using those bayonets.

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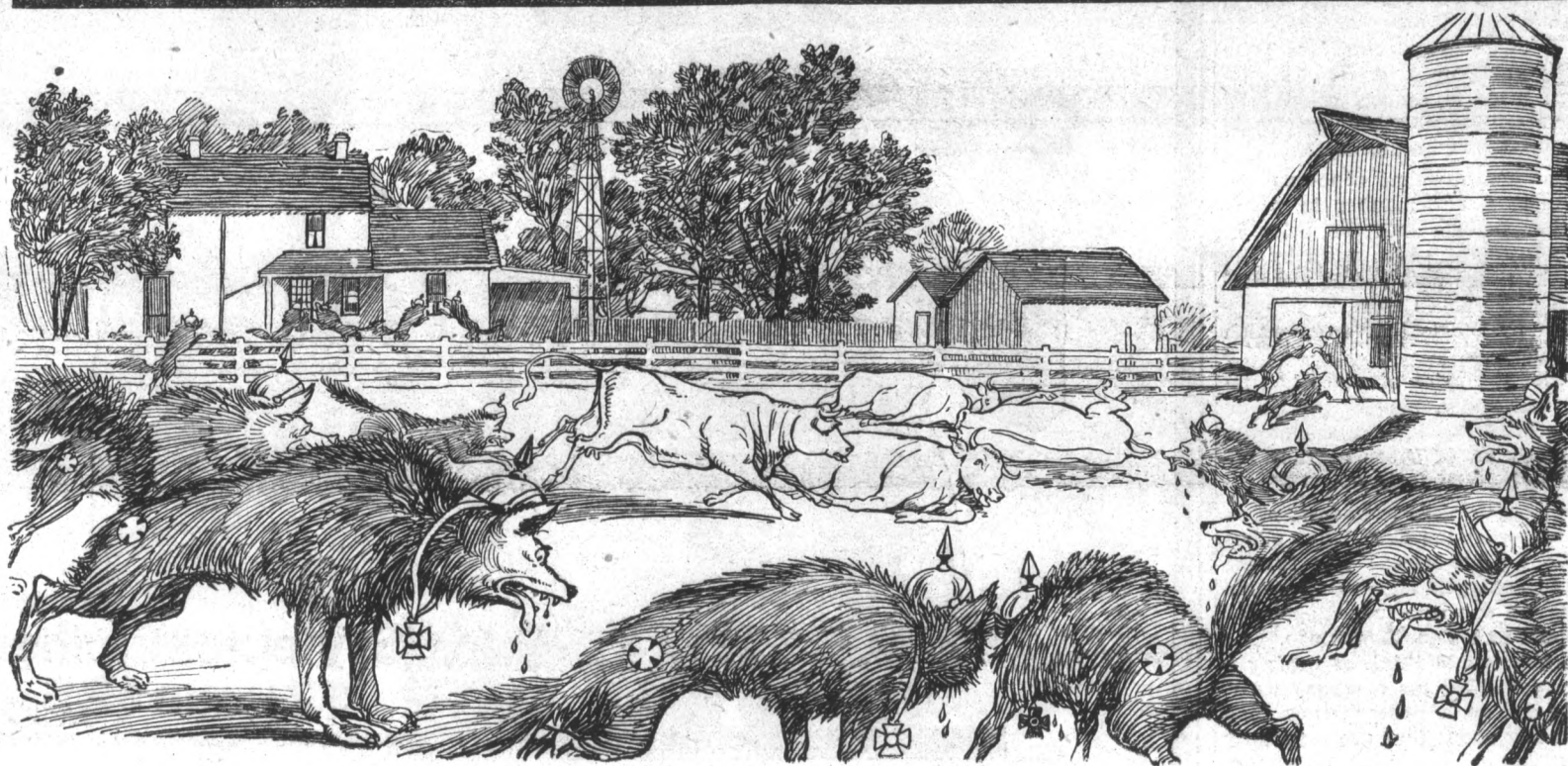
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The Wolves of the World

THIS is a world war! No human being in this world can escape its responsibilities. You, with all others, may share in its glory. The fighter, the financier and the farmer must put this War over. Put in two words, it is *duty* and "*dough*."

If Germany wins this War, there will be a permanent mortgage upon all the muscle, all the money and all the manhood in America. In that event the value of the money, which you may think you can save by not buying Liberty Bonds, will be cut in two.

Thousands who read this have sent their boys across the sea. We cannot say that our dollars are more precious than our boys. We must show the world that the farm dollar is a fighter. We cannot offer our flesh and blood to *The Wolves of the World*, and yet keep our money hidden in the ground.

Of all farmers on earth, the French farmer is most respected, and has the best chance in the market. That is because the French farmers saved France. At the end of the Prussian War, Bismarck demanded a ransom which he thought France never could pay. The bankers and large moneyed men would not have taken that debt, but Bismarck did not know the soul of the French farmers. They brought out their last dollar and laid it upon the altar of their country. *France has never forgotten, and her farmers dominate the Nation.*

Whoever finances America in this War will rule America for the next quarter century. Every farm dollar invested in Liberty Bonds is a nail in the coffin of German autocracy, and brings the world a step nearer pure democracy, by making our farmers, as they should be, the financial creditors of this country.

As an investment, the Liberty Bond is the surest thing on earth. Every dollar of the Nation's more than 125 billions of wealth is pledged to redeem your bond. After the Civil War there were times when the railroad bond, the bank stock, and other securities were in danger, but the Government bond always stood, as it always will, *like the shadow of a rock in a weary land.*

Make the future of your wife and children as "safe as a Government Bond." Protect their future with your money. That is what you do when you

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AND *LIVE STOCK*
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JOURNAL
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

WORLD EVENTS IN PICTURES



American troops passing through a French town on their way to the front to take part in the repulsing of German attacks.



After a stay in the trenches, nothing is more welcome than a hot meal, and this picture shows how happy the boys are, despite the mud.



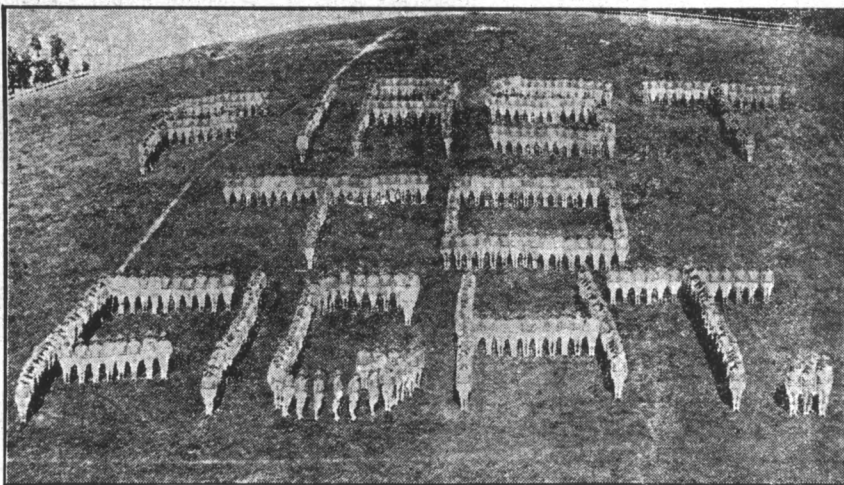
Dugout in a trench held by the American forces, used as a dressing station. These men of one of the medical squads have a stretcher in readiness, while at the right is a trooper keeping guard with a machine gun.



This is how the Tommies get ammunition to their guns at the front, over a line of temporary railroad. The shells on this hand car are for one of the eight-inch howitzers which are doing such effective work.



City of Amiens, objective of German drive, photographed from aeroplane. Should the enemy succeed in capturing Amiens, railway communication between French and British forces would be cut off.



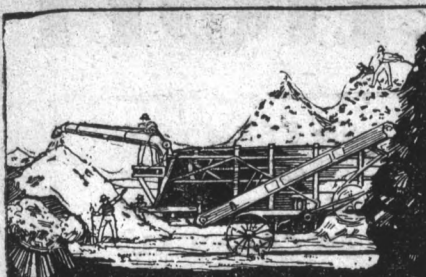
"First to Fight" is the slogan of the U. S. Marine Corps. It took just seven minutes from the time the word of command was given until every man was in his place, thus forming their slogan in living letters.



Monster shell used in latest type of British bombing aeroplane. The four rudders that keep the shell falling vertically—so it will hit the ground nose first—are seen attached to the rear of the projectile.



English women farmers "cleaning up" after a hard day's work. These happy looking women workers were some of those entered in the farm work competition at Birmingham, England.



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THE national food dictator has exactly the plan you want in threshing. Prevent waste, save food, increase production. His plan would say, thresh *clean*—save *all* your grain—don't lose a single bushel to the straw stack. This job would be an easy one if all threshing was done with a

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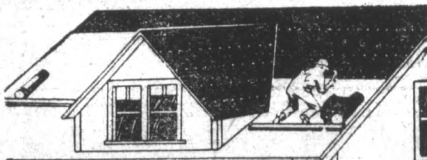
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The Grizzly King

By JAMES OLIVER CURWOOD

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Bruce and Metoosin were caught by his ruse, in spite of the fact that the dogs were again giving fierce tongue close to the rocks among which Thor had gone. They believed that from where he stood Langdon could see the progress of the bear, and that it was running toward the valley. Not until they were another hundred yards down the slope did they stop and look back at Langdon to get further directions. From his rock Langdon was pointing to the sky-line.

Thor was just going over. He paused for a moment, as Iskwao had stopped, and took one last look at man.

And Langdon, as he saw the lasts of him, waved his hat and shouted, "Good luck to you, old man—good luck!"

CHAPTER XXIV.

THAT night Langdon and Bruce made their new plans, while Metoosin sat aloof, smoking in stolid silence, and gazing now and then at Langdon as if he could not yet bring himself to the point of believing what had happened that afternoon. Thereafter through many moons Metoosin would never forget to relate to his children and his grandchildren and his friends of the tepee tribes how he had shot his own dogs to save the life of a grizzly bear. Langdon was no longer the same old Langdon to him, and after this hunt Metoosin knew that he would never hunt with him again. For Langdon was keskwao now. Something had gone wrong with his head. The Great Spirit had taken away his heart and had given it to a grizzly bear, and over his pipe Metoosin watched him cautiously. This suspicion was confirmed when he saw Bruce and Langdon making a cage out of a cowhide pannier and realized that the cub was to accompany them on their long journey. There was no doubt in his mind now. Langdon was "queer," and to an Indian that sort of queerness boded no good to man.

The next morning at sunrise the outfit was ready for its long trail into the northland. Bruce and Langdon led the way up the slope and over the divide into the valley where they had first encountered Thor, the train filing picturesquely behind them, with Metoosin bringing up the rear. In his cowhide pannier rode Muskwa.

Langdon was satisfied and happy.

"It was the best hunt of my life," he said to Bruce. "I'll never be sorry we let him live."

"You're the doctor," said Bruce rather irreverently. "If I had my way about it his hide would be back there on Dishpan. Almost any tourist down on the line of rail would jump for it at a hundred dollars."

"He's worth several thousand to me alive," replied Langdon, with which enigmatic retort he dropped behind to see how Muskwa was riding.

The cub was rolling and pitching about in his pannier like a raw amateur in a hookah on an elephant's back, and after contemplating him for a few moments Langdon caught up with Bruce again.

Half a dozen times during the next two or three hours he visited Muskwa, and each time that he returned to Bruce he was quieter, as if debating something with himself.

It was nine o'clock when they came to what was undoubtedly the end of Thor's valley. A mountain rose up squarely in the face of it, and the stream they were following swung sharply to the westward into a narrow canyon. On the east rose a green and undulating slope up which the horses could easily travel, and which would

take the outfit into a new valley in the direction of the Driftwood. This course Bruce decided to pursue.

Halfway up the slope they stopped to give the horses a breathing spell. In his cowhide prison Muskwa whimpered pleadingly. Langdon heard, but he seemed to pay no attention. He was looking steadily back into the valley. It was glorious in the morning sun. He could see the peaks under which lay the cool, dark lake in which Thor had fished; for miles the slopes were like green velvet, and there came to him as he looked the last droning music of Thor's world. It struck him in a curious way as a sort of anthem, a hymnal rejoicing that he was going, and that he was leaving things as they were before he came. And yet, was he leaving things as they had been? Did his ears not catch in that music of the mountains something of sadness, of grief, of plaintive prayer?

And again, close to him, Muskwa whimpered softly.

Then Langdon turned to Bruce.

"It's settled," he said, and his words had a decisive ring in them. "I've been trying to make up my mind all the morning, and it's made up now. You and Metoosin go on when the horses get their wind. I'm going to ride down there a mile or so and free the cub where he'll find his way back home!"

He did not wait for arguments or remarks, and Bruce made none. He took Muskwa in his arms and rode back into the south.

A mile up the valley Langdon came to a wide, open meadow dotted with clumps of spruce and willows and sweet with the perfume of flowers. Here he dismounted, and for ten minutes sat on the ground with Muskwa. From his pocket he drew forth a small paper bag and fed the cub its last sugar. A thick lump grew in his throat as Muskwa's soft little nose muzzled the palm of his hand, and when at last he jumped up and sprang into his saddle there was a mist in his eyes. He tried to laugh. Perhaps he was weak. But he loved Muskwa, and he knew that he was leaving more than a human friend in this mountain valley.

"Good-bye, old fellow," he said, and his voice was choking. "Good-bye, lit-



APRIL.

BY ALONZO RICE.

What form in yonder fields—a fretful child?

So changing is her mood! In such surprise,

Fair April comes, sweet summer in her eyes,

And glad content. Around the air is mild,

Green hills are vocal to the robin's wild

Impassioned lay; a tenant of fair skies,

Arrived today, his song the bluebird tries,

Though with the prospect scarcely reconciled.

Her skies are fickle; she may change her mind,

Her sudden tears may blur the bluebird's wing;

To faults like these her beauty makes me blind,

And through such moods her praises I shall sing;

Shall follow where she leads, sure there to find

Sweet odors and the freshness of the spring!

tle Spitfire! Mebbly some day I'll come back and see you, and you'll be a big, fierce bear—but I won't shoot—never—never—"

He rode fast into the north. Three hundred yards away he turned his head and looked back. Muskwa was following, but losing ground. Langdon waved his hand.

"Good-bye!" he called through the lump in his throat. "Good-bye!"

Half an hour later he looked down from the top of the slope through his glasses. He saw Muskwa, a black dot. The cub had stopped, and was waiting confidently for him to return.

And trying to laugh again, but failing dismally, Langdon rode over the divide and out of Muskwa's life.

CHAPTER XX.

FOR a good half-mile Muskwa followed over the trail of Langdon.

He ran at first; then he walked; finally he stopped entirely and sat down like a dog, facing the distant slope. Had Langdon been afoot he would not have halted until he was tired. But the cub had not liked his pannier prison. He had been tremendously jostled and bounced about, and twice the horse that carried him had shaken himself, and those shakings had been like earthquakes to Muskwa. He knew that the cage as well as Langdon was ahead of him. He sat for a time and whimpered wistfully, but he went no farther. He was sure that the friend he had grown to love would return after a little. He always came back. He had never failed him. So he began to hunt about for a spring beauty or a dog-tooth violet, and for some time he was careful not to stray very far away from where the outfit had passed.

All that day the cub remained in the flower-strewn meadows under the slope; it was very pleasant in the sunshine, and he found more than one patch of the bulbous roots he liked. He dug, and he filled himself, and he took a nap in the afternoon; but when the sun began to go down and the heavy shadows of the mountain darkened the valley he began to grow afraid.

He was still a very small baby of a cub, and only that one dreadful night after his mother had died had he spent entirely alone. Thor had replaced his mother, and Langdon had taken the place of Thor, so that until now he had never felt the loneliness and emptiness of darkness. He crawled under a clump of thorn close to the trail, and continued to wait, and listen, and sniff expectantly. The stars came out clear and brilliant, but tonight their lure was not strong enough to call him forth. Not until dawn did he steal out cautiously from his shelter of thorn.

The sun gave him courage and confidence again and he began wandering back through the valley, the scent of the horse-trail growing fainter and fainter until at last it disappeared entirely. That day Muskwa ate some grass and a few dog-tooth violet roots; and when the second night came he was abreast of the slope over which the outfit had come from the valley in which were Thor and Iskwao. He was tired and hungry, and he was utterly lost.

That night he slept in the end of a hollow log. The next day he went on, and for many days and many nights after that he was alone in the big valley. He passed close to the pool where Thor and he had met the old bear, and he nosed hungrily among the fish-bones; he skirted the edge of the dark, deep lake; he saw the shadowy things fluttering in the gloom of the forest again; he passed over the beaver dam, and he slept for two nights close to the log-jam from which he had watched Thor throw out their first fish. He was almost forgetting Langdon now, and was thinking more and more about Thor and his mother. He wanted them. He wanted them more than he had

ever wanted the companionship of man for Muskwa was fast becoming a creature of the wild again.

It was the beginning of August before the cub came to the break in the valley and climbed up over the slope where Thor had first heard the thunder and had first felt the stink of the white men's guns. In these two weeks Muskwa had grown rapidly in spite of the fact that he often went to bed on an empty stomach; and he was no longer afraid of the dark. Through the deep, sunless canyon above the clay wallow he went, and as there was only one way out he came at last to the summit of the break over which Thor had gone, and over which Langdon and Bruce had followed in close pursuit. And the other valley—his home—lay under Muskwa.

Of course he did not recognize it. He saw and smelled in it nothing that was familiar. But it was such a beautiful valley, and so abundantly filled with plenty of sunshine, that he did not hurry through it. He found whole gardens of spring beauties and dog-tooth violets. And on the third day he made his first real kill. He almost stumbled over a baby whistler no larger than a red squirrel, and before the little creature could escape he was upon it. It made him a splendid feast.

It was fully a week before he passed along the creek-bottom close under the slope where his mother had died. If he had been traveling along the crest of the slope he would have found her bones, picked clean by the wild things. It was another week before he came to the little meadow where Thor had killed the bull caribou and the big black bear.

And now Muskwa knew that he was home!

For two days he did not travel two hundred yards from the scene of feast and battle, and night and day he was on the watch for Thor. Then he had to seek farther for food, but each afternoon when the mountains began to throw out long shadows he would return to the clump of trees in which they had made the cache that the black bear robber had despoiled.

One day he went farther than usual in his quest for roots. He was a good half-mile from the place he had made home, and he was sniffing about the end of a rock when a great shadow fell suddenly upon him. He looked up, and for a full half-minute he stood transfixed, his heart pounding and jumping as it had never pounded and jumped before in his life. Within five feet of him stood Thor! The big grizzly was as motionless as he, looking at him steadily. And then Muskwa gave a puppy-like whine of joy and ran forward. Thor lowered his huge head, and for another half-minute they stood without moving, with Thor's nose buried in the hair on Muskwa's back. After that Thor went up the slope as if the cub had never been lost at all, and Muskwa followed him happily.

Many days of wonderful travel and of glorious feasting came after this, and Thor led Muskwa into a thousand new places in the two valleys, and the mountains between. There were great fishing days, and there was another caribou killed over the range, and Muskwa grew fatter and fatter and heavier and heavier until by the middle of September he was as large as a good-sized dog.

Then came the berries, and Thor knew where they all grew low down in the valleys—first the wild red raspberries, then the soap berries, and after those the delicious black currants which grew in the cool depths of the forests and were almost as large as cherries and nearly as sweet as the sugar which Langdon had fed Muskwa. Muskwa liked the black currants best of all. They grew in thick, rich clusters; there were no leaves on the bushes that were loaded with them, and he

(Concluded on page 533).



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DON'T STICK IN THE MUD—Get full service out of your car all the year 'round. Travel over any road, no matter how muddy, greasy or slippery with perfect safety and comfort.

Muddy Roads—heavy, slippery and uncertain are responsible not only for automobile accidents and delays but are *extremely treacherous* to life and property. **Why take chances?** Anticipate road troubles and avoid car troubles. Prepare for accidents *before* they happen—not after. Equip your car with

Weed Anti-Skid Chains

The only positive safeguard against slipping and skidding

Without Weed Chains it is impossible to secure traction. *Slipping and skidding are entirely due to a loss of traction.* Wheels equipped with Weed Chains automatically lay their own traction. Many lives have been lost; many cars have been damaged and wrecked; much time has been wasted because of lack of caution and because of *foolish dependence on rubber alone.* Rubber lacks the bite-and-hang-on ability to prevent slipping and skidding.

An Absolute Necessity

No other device has ever been invented that takes the place of Weed Chains. All kinds of make-shifts have been tried—all useless and worthless. They are the *only traction device* which can be absolutely relied upon at all times and under every road condition.

Weed Chains are free to "creep." They don't injure tires even as much as one little slip or skid. They are slipped on in a moment without a jack. Made of the hardest steel; *electrically welded and tempered*; carefully inspected; no rough edges; take up hardly any space when not in use. Packed in canvas bags with full directions. Sizes to fit all styles and makes of tires.

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PROSPERITY HITS WESTERN CANADA

Big crops with war-time prices have put Western Canada farmers on a prosperity footing that was undreamed of in pre-war days.

54 bushels of wheat and 90 bushels of oats to the acre were not uncommon yields last year; the average being 30 bushels of wheat and 53 bushels of oats. With wheat at \$2.20, Government set price, it is scarcely to be wondered that probably more Western Canada farmers are wintering in California than ever before.

As another evidence of their prosperity more than sixteen thousand motor cars were bought in Saskatchewan during the year, which was a greater number than the total number of cars in Saskatchewan up to 1917. Over-subscription to the Victory Loans and large contributions to various war relief organizations also point vividly to the wealth of the country.

Many of our neighbors' richest farmers acquired their land free, while still others bought their farms from the Canadian Northern Railway at \$15 to \$25 per acre.

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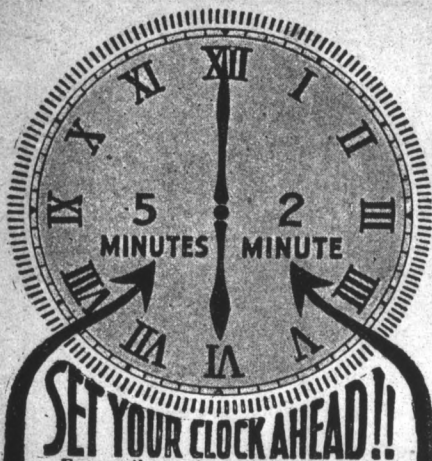
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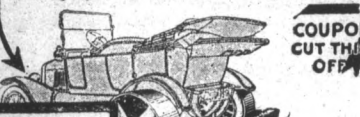
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Inside the Lines

By EARL DERR BIGGERS & ROBERT WELLES RITCHIE

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"Open this door! Open it, I say!" It was the general's voice, sounding muffled through the panels of his door; he rattled the knob viciously. Jane tried to run to the door, but the Indian seized her from behind, threw her aside, and made for the double doors. There his hand went to a panel in the wall, turned a light switch, and the library was on the instant drenched with light. Jaimihr Khan threw before the door of the safe the bundle of papers he was clutching when Jane discovered him and which he had gripped during the ensuing tense moments. Then he stepped swiftly to the general's door and unlocked it.

General Crandall, clad only in trousers and shirt, burst into the room. His eyes leaped from the Indian to where Jane was cowering behind his desk.

"What the devil is this?" he rasped. Jane opened her mouth to answer, but the Indian forestalled her:

"The sahibah, General—I found her here before your opened safe—"

"Good God!" General Crandall's eyes blazed. He leaped to the safe, knelt and peered in. "A clever job, young woman!"

Jane, completely stunned by the Indian's swift strategy, could hardly speak. She held up a hand, appealing for a hearing. General Crandall eyed her with chilling scorn, then turned to his servant.

"You have done well, Jaimihr."

"It isn't true!" Jane stammered. The governor took a step toward her almost as if under impulse to strike her, but he halted, and his lips curled in scorn.

"By gad, working with Woodhouse all the time, eh? And I thought you a simple young woman he had trapped—even warned you against him not six hours ago. What a fool I've been!" Jane impulsively stretched forth her arms for the mercy of a hearing, but the man went on implacably:

"I said he was making a fool of you—and all the time you were making one of me. Clever young woman. I say, that must have been a great joke for you—making a fool of the governor of Gibraltar. You make me ashamed of myself. And my servant—Jaimihr here; it is left to him to trap you while I am blind. Bah! Jaimihr, my orderly—at once!" The Indian smiled sedately and started for the double doors. Jane ran toward the general with a sharp cry:

"General—let me explain—"

"Explain!" He laughed shortly. "What can you say? You come into my house as a friend—you betray me—you break into my safe—with Woodhouse, whom I'd warned you against, directing your every move. Clever—clever! Jaimihr, do as I tell you. My orderly at once!"

Jane threw herself between the Indian and the doors.

"One moment—before he leaves the room let me tell you he lies? Your Indian lies. It was I who found him here—before that safe!"

"A poor story," the general sniffed. "I expected better of you—after this."

"The truth, General Crandall. I couldn't sleep. I came out here to the balcony to try to make out if the Saxonia was in the bay. He came into the room while I was behind these curtains, locked the doors, and opened the safe."

"It won't go," the general cut in curtly.

"It's the truth—it's got to go!" she cried.

Jaimihr, at a second nod from his master, was approaching the double

doors. Jane, leaping in front of them, pushed the Indian back.

"General Crandall, for your own sake—don't let this Indian leave the room. You may regret it—all the rest of your life. He still has a paper—a little paper—he took from that safe. I saw him stick it in his sash."

"Nonsense!"

"Search him!" The girl's voice cracked in hysteria; her face was dead white, with hectic burning spots in each cheek. "I'm not pleading for myself now—for you. Search him before he leaves this room!"

The governor's face reflected momentary surprise at this change of tack. "Quickly then," he gruffly conceded. Jaimihr Khan stepped back a pace, his eyes meeting the girl's coldly.

"How did you come into the room—when you found me here?" she challenged. The Indian pointed to the double doors over her shoulder. She reached behind her, grasped the knob, and shook it. "Locked!" she announced.

"Why not?" Jaimihr asked. I locked them after me."

"And the general's door was locked?"

"Yes—yes!" Crandall broke in impatiently. "What's all this got to do with—"

"Did you lock the general's door," she questioned the Indian.

"No, Sahibah; you did."

"And I suppose I locked the door to Lady Crandall's room and my door?"

"If they, too, are locked—yes, Sahibah."

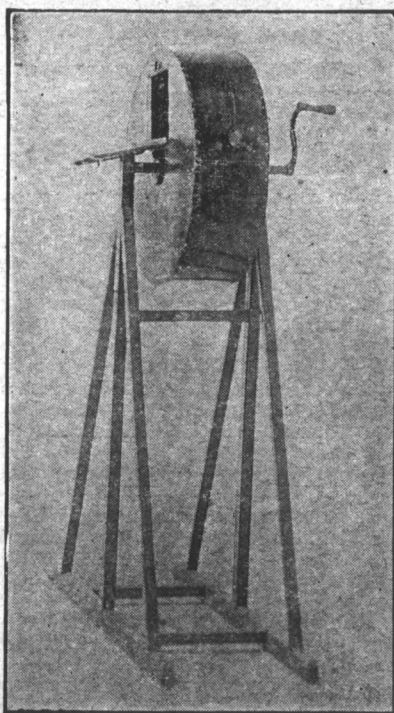
"Then why"—Jane's voice quavered almost to a shriek—"why had I failed to lock the double doors—the doors through which you came?"

The Indian caught his breath, and darted a look at the general. The latter, eying him keenly, stepped to his desk and pressed a button.

"Very good; remain here, Jaimihr," he said. Then to Jane: "I will have him searched, as you wish. Then both of you go to the tower."

"General! You wouldn't dare!" She stood aghast.

"Wouldn't I, though? We'll see



Draft Wheel, Civil War Days.

When the first draft requisitions were made an old veteran of Penn Yan, N. Y., restored from his attic an old draft wheel used during the Civil War in his county. Had the present draft been arranged as was those of the Civil War it was planned to use the old draft wheel once more in the world contest for liberty.

whether—" A sharp click sent his head jerking around to the right. Jaimihr Khan, at the door to the general's room, was just slipping the key into his girdle, after having turned the lock. His thin face was crinkled like old sheepskin.

"What the devil are you doing?" Crandall exploded.

"If the general sahib is waiting for that bell to be answered—he need not wait longer—it will not be answered," Jaimihr Khan purred.

"What's this—what's this!"

"The wires are cut."

"Cut! Who did that?" The general started for the yellow man. Jaimihr Khan whipped a blue-barreled revolver out of his broad sash and leveled it at his master.

"Back, General Sahib! I cut them. The sahibah's story is true. It was she who came in and found me at the safe."

"My God! You, Jaimihr—a spy!" The general collapsed weakly into a chair by the desk.

"Some might call me that, my General." Jaimihr's weapon was slowly swinging to cover both the seated man and the girl by the doors. "No need to search that drawer, General Sahib. Your pistol is pointing at you this minute."

"You'll pay for this!"

"That may be. One thing I ask you to remember. If one of you makes a move I will kill you both. You are a gallant man, my General; it is not so? Then remember."

Crandall started from his chair, but the uselessness of his bare hands against the snub-nosed thing of blue metal covering him struck home. He sank back with a groan. Keeping them both carefully covered, Jaimihr moved to the desk telephone at the general's elbow. He took from his sash a small piece of paper—the one he had saved from the packet of papers taken from the safe—laid it on the edge of the desk, and with his left hand he picked up the telephone. An instant of tense silence, broken by the wheezing of the general's breath, then—

"Nine-two-six, if you please. Yes—yes, who is this? Ah, yes. It is I, Jaimihr Khan. Is all well with you? Good! And Bishop? Slain coming down the Rock—good also!"

Crandall groaned. The Indian continued his conversation imperturbed.

"Veree good! Listen closely. I can not come as I have promised. There is—work—for me here. But all will be well. Take down what I shall tell you." He read from the slip of paper on the desk. "Seven turns to the right, four to the left—press! Two more to the left—press! One to the right. You have that? Allah speed you. And go quickly!"

"Room D!" Crandall had leaped from his chair.

"Correct, my General—Room D." Jaimihr smiled as he stepped away from the telephone, his back against the double doors. The sweat stood white on Crandall's brow; his mouth worked in jerky spasms.

"What—what have you done?" he gasped.

"I see the general knows too well," came the Indian's silken response. "I have given the combination of the inner door of Room D in the signal tower to a—friend. He is on his way to the tower. He will be admitted—one of the few men on the Rock who could be admitted at this hour, my General. One pull of the switches in Room D—and where will England's great fleet be then?"

"You yellow devil!" Crandall started to rush the white figure by the doors, but his flesh quailed as the round cold muzzle met it. He staggered back.

"We are going to wait, my General—and you, American Sahibah, who have pushed your way into this affair. We are going to wait—and listen—listen."

(Continued next week.)

THE GRIZZLY KING

(Continued from page 529).

could pick and eat a quart in five minutes.

But at last the time came when there were no berries. This was in October. The nights were very cold, and for whole days at a time the sun would not shine, and the skies were dark and heavy with clouds. On the peaks the snow was growing deeper and deeper, and it never thawed now up near the sky-line. Snow fell in the valley, too—at first just enough to make a white carpet that chilled Muskwa's feet, but it quickly disappeared. Raw winds began to come out of the north, and in place of the droning music of the valley in summertime there were now shrill wailings and screechings at night, and the trees made mournful sounds.

To Muskwa the whole world seemed changing. He wondered in these chill and dark days why Thor kept to the windswept slopes when he might have found shelter in the bottoms. And Thor, if he explained to him at all, told him that winter was very near, and that these slopes were their last feeding grounds. In the valleys the berries were gone; grass and roots alone were no longer nourishing enough for their bodies; they could no longer waste time in seeking ants and grubs; the fish were in deep water. It was the season when the caribou were as keen-scented as foxes and swift as the wind. Only along the slopes lay the dinners they were sure of—famine-day dinners of whistlers and gophers. Thor dug for them now, and in this digging Muskwa helped as much as he could. More than once they turned out wagon-loads of earth to get at the cozy winter sleeping quarters of a whistler family, and sometimes they dug for hours to capture three or four little gophers no larger than red squirrels, but lusciously fat.

Thus they lived through the last days of October into November. And now the snow and the cold winds and the fierce blizzards from the north came in earnest, and the ponds and lakes began to freeze over. Still Thor hung to the slopes, and Muskwa shivered with the cold at night and wondered if the sun was never going to shine again.

One day about the middle of November Thor stopped in the very act of dragging out a family of whistlers, went straight down into the valley, and struck southward in a most business-like way. They were ten miles from the clay-wallow canyon when they started, but so lively was the pace set by the big grizzly that they reached it before dark that same afternoon.

For two days after this Thor seemed to have no object in life at all. There was nothing in the canyon to eat, and he wandered about among the rocks, smelling and listening and deporting himself generally in a fashion that was altogether mystifying to Muskwa. In the afternoon of the second day Thor stopped in a clump of jackpines under which the ground was strewn with fallen needles. He began to eat these needles. They did not look good to Muskwa, but something told the cub that he should do as Thor was doing; so he licked them up and swallowed them, not knowing that it was nature's last preparation for his long sleep.

It was four o'clock when they came to the mouth of the deep cavern in which Thor was born, and here again Thor paused, sniffing up and down the wind, and waiting for nothing in particular.

It was growing dark. A wailing storm hung over the canyon. Biting winds swept down from the peaks, and the sky was black and full of snow.

For a minute the grizzly stood with his head and shoulders in the cavern door. Then he entered. Muskwa followed. Deep back they went through

a pitch-black gloom, and it grew warmer and warmer, and the wailing of the wind died away until it was only a murmur.

It took Thor at least half an hour to arrange himself just as he wanted to sleep. Then Muskwa curled up beside him. The cub was very warm and very comfortable.

That night the storm raged, and the snow fell deep. It came up the canyon in clouds, and it drifted down through the canyon roof in still thicker clouds, and all the world was buried deep. When morning came there was no cavern door, there were no rocks, and no black and purple of tree and shrub. All was white and still, and there was no longer the droning music in the valley.

Deep back in the cavern Muskwa moved restlessly. Thor heaved a deep sigh. After that long and soundly they slept. And it may be that they dreamed.

THE END.

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Watch for our new War Serial, "A Flying Fighter." A true story of an American boy's adventures while fighting the Hun, in the air, over the lines in France. The first installment will appear in an early May issue of the Michigan Farmer.

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Sawdust and "wood flour" have long been used for the making of artificial wood and now an inventor of Austrian nationality has applied for a patent on a new process by which dry leaves are employed for the same purpose, the greater advantage, of course, being the greater cheapness of the raw material. Any sort of leaves can be used, but oak, birch and beech are particularly good. The process is as follows:

It is preferable to begin by having the leaves ground up. They are then mixed with a suitable binder; for this purpose glue, rosin, waterglass, casein, etc., can be employed, but viscose is the best, and it is possible to make the viscose from the portion of the leaves used. For certain purposes, moreover, it is possible to make use of "fillers" to mix in with the mass, such as asbestos, infusional earth, wood flour, peat flour, etc.

The finely ground leaves are boiled in soda lye and are then without delay mixed intimately with an already prepared solution of viscose. The resultant mass is placed in suitable press (presz formen) moulds and subjected to pressure of 350 atmospheres.

The shapes obtained are dried and then subjected to a warm "after pressure." The viscose can be made from the "leaf meal" by treating the latter first with soda lye and then with carbon disulphide fumes.

To increase the binding power of the viscose, in consideration of the jelly-like cellulose separated out from its small quantities of other binders, such as glue, waterglass, casein, waste sulphite liquor, etc., can be added. Color can be added either to the mass or to the leaf meal.

Spring Fever

Time o' spring, with bees a-bummin',
Blades o' grass an' flowers comin'
Thru the earth, and earthy odors—
Close about us everywhere.
Comes a softness round us stealin'
With a lazy-yearning feelin'.
Tis the sneaking springtime fever
Creeping on us unaware.

Goin' no use to take a tonic
Nor indulge in thoughts sardonic
Sore we get a chance to fight it
It will have us powerless.
So don't sit there idly wishin'
Get your pole an' let's go fishin'.
Tis the only cure I know of
And I've tried them all I guess.

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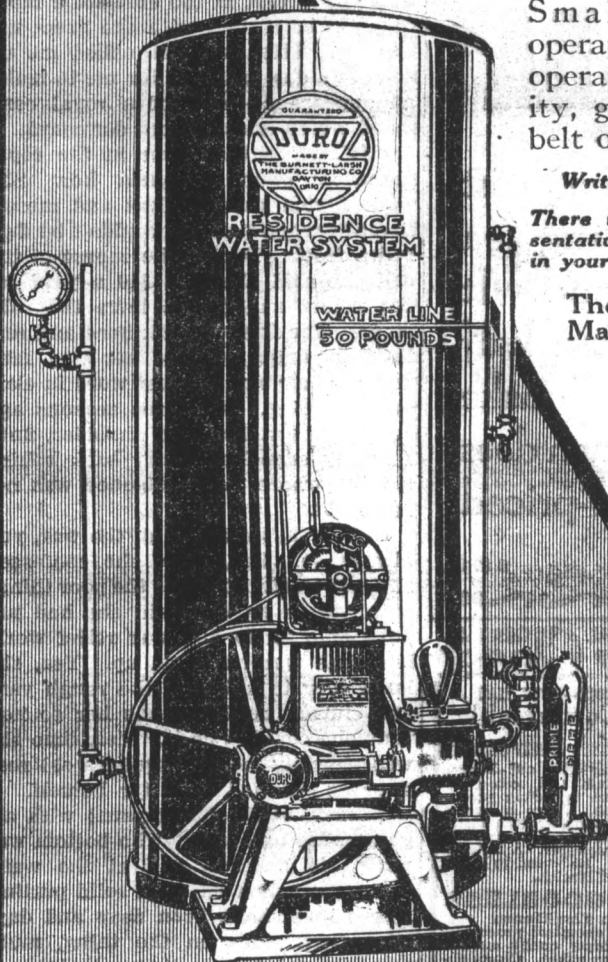
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Woman and Her Needs At Home and Elsewhere



Are We Simply Reflectors?

I DO not see her very often. She is one of those women whom you always feel you are bothering if you go to call. She gives you the impression that her time is too valuable to be wasted on ordinary mortals, or that she is cast in too delicate a mold to come in contact with the great unwashed. This time she called me up and set a day and hour for me to make an appearance—sort of a royal command which one dare not disregard.

I felt more than ever in the royal presence when I beheld her. She wore a rich panne velvet and messaline afternoon gown, it couldn't be dubbed a frock. During the course of the call she said she paid \$10 a yard for the velvet and \$40 to have the robe made. The finest of silk hose and real leather pumps adorned her tiny feet, and her hair was the last word in elaborate coiffing. My three seasons ago suit grew shabbier and shabbier, until I finally edged my chair back behind a table where the refulgence was not so bright.

Of course, we talked of the war, you always do. But, while she confessed she was really sorry for the poor things who had to go, she said she had not been able to do any war relief work, her time was so taken up. Yes, she knew how to knit, but the rough yarn and clumsy needles made her so nervous she couldn't do it. Meantime she was showing me an exquisite old rose sweater she had done for herself. It was made of the finest yarn; with angora collar and cuffs. The bottom was purled in squares, and at the waist there was a belt effect of solid purling. There must have been days and days of patient work on the thing, much more exacting than that called for in knitting army sweaters.

She had not been to the Red Cross to work either. People en masse always tired her to death. Even callers were tiresome. I began hastily to button my coat, but she commanded me to sit still, as I had not yet begun to wear on her.

"People are so terribly selfish, though, don't you think?" she explained. "There are one or two who keep coming here and take up so much of my time, I've just told Bertha to say I'm out when they come after this. They're from a little town where I used to live and the poor things get lonesome, but I can't be bothered listening to their troubles. I have too many of my own. Folks are so unconsiderate. Don't you find as you grow older that people get more and more selfish? Everyone seems so selfish to me. They are all thinking of themselves and what they can get out of you. Don't you find it so?"

"Why, no," I replied, and truthfully, too. "It doesn't seem so to me. The older I grow the better folks seem to me. Why, the longer I live and get acquainted with myself, and see what other folks have to put up with, the more I marvel that human beings are as good as they are. I find most folks pretty considerate and unselfish."

"Well, of course, you meet a different class," she explained. "Now, if you had money, you'd find everyone trying to see what they could get out of you. You wouldn't have such a fine opinion of human nature then."

"Then I'm glad, for once, that I haven't money," I replied. "I prefer to think that the common, or garden,

variety of individual is a fairly good sort. I've always found him so, anyway, ready to lend a hand or share a crust, and it seems to me this war is proving I'm right. Look at the way the poor are sacrificing to buy Liberty Bonds, and the way over-worked women are planning their time to do their bit of sewing and knitting. Why, I see more and more unselfishness every day.

Her lip curled just a bit skeptically. "You always were a little queer," she came back, "Don't you think you imagine a lot of things that don't exist?"

"Maybe," I said as I arose, "But I don't imagine any goodness in folks that isn't there."

I wondered as I left if there is anything in that idea that we see reflected in others what is in ourselves, and if that is why she saw so much selfishness. But then it couldn't be, for in that case I'd see it, too. But it does seem, though, that the ones who never have time to do for others are always the ones who complain at the hardness of folks in general and their own friends in particular.

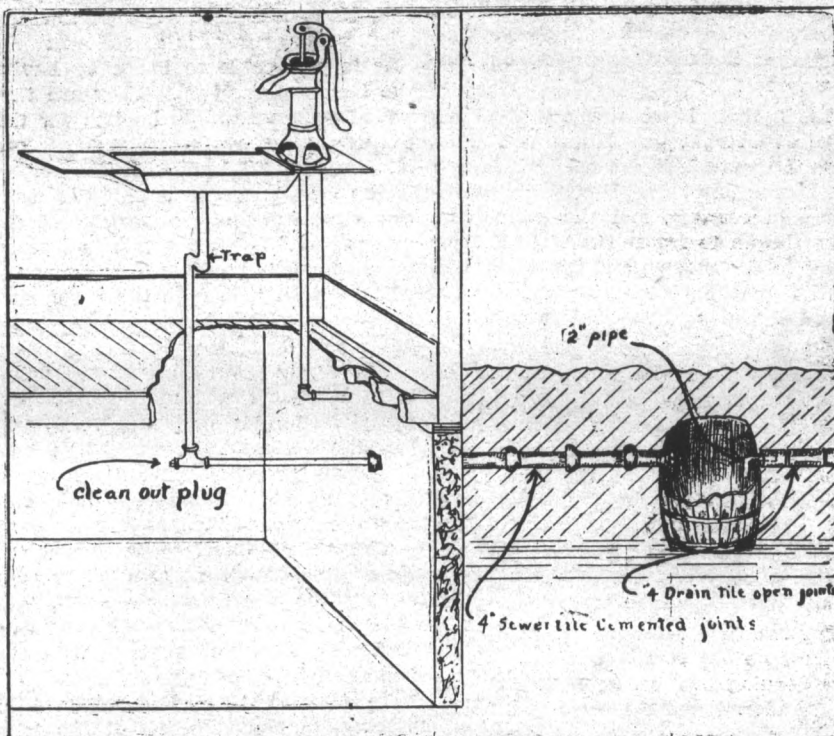
DEBORAH.

Installing a Kitchen Sink

A SUBSCRIBER has asked some very pertinent questions regarding a very great kitchen necessity—the kitchen sink. The kitchen sink, whether it is only one fixture of an elaborate plumbing system or the only plumbing fixture in the house, can be made a very great convenience for the housewife and other members of the family.

Supplying the sink with water and taking away the wastes can be made

than caring for the wastes from a complete bathroom. This is probably due to the fact that the problem seems so simple that nothing more than a drain is usually provided. Where the source of water in the kitchen is the cistern pump or a pail carried from a distant well, the supply is usually scanty. The waste water is pretty well contaminated with soap and some grease, perhaps and due to the scanty water supply and especially an absence of hot water,



It is Essential to have Trap, Clean-out Plug, and Tile Well-cemented to Catch Barrel or Tank, and Adequate Distributing Surface to Care for Wastes of the Kitchen.

one of the "big jobs" about the house if done by hand or it may be taken care of automatically and without labor or attention if the proper machinery is provided.

The value of a sink will be greatly increased if it is so located that a great variety of work can be done at it. Unless the sink is so located the work will be done elsewhere and less advantageously than at a properly located and equipped sink. The kitchen sink is primarily intended to assist in scrubbing, washing dishes, preparing vegetables and other kitchen tasks and not merely as a place to wash hands, but how often do we find the sink placed in some out of the way corner where it does not reduce the kitchen work but actually increases it by adding extra steps in securing water and disposing of the wastes.

The disposal of the slops from the kitchen sink is often more troublesome

there is nothing to dilute or dissolve the grease and soap and as a result it gradually "freezes" on to the sides of the pipes until they and the tile drain become completely choked. One experience in cleaning a clogged drain will usually set a person to thinking that something better to take care of the wastes should be provided.

The location of the sink is very important. Place the sink near the dish cupboard and the kitchen table. The kitchen table to the right of the sink with the drain board and dish cupboard to the left is a good arrangement for a right-handed person. The sink should also be provided with plenty of light. It should be so arranged, if possible, that you do not stand in your own light when working at the sink.

The next important thing, and one which is very often overlooked, is the height of the sink. The average sink is set too low, causing the woman

working at the sink to stoop and thus tire more quickly. Of course, the proper height of sink will vary with people of different heights, a good rule to follow is this: For a woman five feet high set the bottom of the sink twenty-eight inches from the floor. For women taller than five feet the sink should be raised one-half inch for each additional inch in height. Thus for a woman five feet six inches tall the sink would be raised three inches, making it thirty-one inches from the floor.

The waste pipe leading from the sink should be at least one and one-fourth inches in diameter, (one and a half is better), and would be better made of lead as it is smoother and can be made with less abrupt turn, thus preventing clogging. Ordinary threaded wrought-iron pipe can also be used, but great care must be exercised to prevent clogging. Sharp corners should be avoided; 45-degree elbows should be used instead of 90 degrees. It is better to use special drainage elbows, tees and Y's instead of the ordinary fittings as they are much smoother and less liable to clog. Wherever it is necessary to have a long horizontal run of waste pipe it should be provided with a "clean-out." A tee fitted with a plug is very good for this purpose. In case of clogging the plug can be removed and a wire inserted. It might be said right here that no matter how carefully a waste pipe is put in, it will occasionally clog and some means should be provided for cleaning it.

Since the grease and soap is what usually gives the trouble in disposing of the wastes, the "pit" should be made in the form of a grease trap to prevent this greasy substance getting into the drain. This is very simple of construction; it may be made of wood, brick or cement. An inexpensive method is to take a barrel similar to a kerosene barrel with the head removed, about eight inches from the top on one side, bore a hole large enough to insert a two-inch iron pipe. The pipe should fit snugly in the hole, as near water-tight as possible. Take two pieces of two-inch iron pipe fifteen inches long, each threaded on one end, connect the two threaded ends together with a good 90-degree elbow. Put one piece of pipe through the hole and let the other end hang down in the barrel. On the opposite side of the barrel cut a notch large enough to allow a four-inch sewer pipe to lay in and flush with the top. About fifteen feet away from the house dig a hole large enough to receive the barrel and deep enough so that the barrel will be about two feet below ground when standing in the hole. Connect the barrel with the waste pipe at the sink with four-inch sewer pipe as shown in the illustration. The joints of the sewer pipe should be cemented, care being taken that no cement is forced through into the sewer. A fall of five inches in the fifteen feet is sufficient.

From the two-inch outlet pipe on the opposite side of the barrel a ditch should be dug for fifty or sixty feet and four-inch drain tile laid with open joints at a fall of about six or eight inches. A tight cover should be provided for the barrel, then the whole thing covered up and the job is completed.

This outfit will be found quite satisfactory for taking care of the water from the sink. I had occasion recently of digging up one of these grease traps which had been working twelve years. It is usually advisable to open the trap about twice a year and remove the excess grease from the top. On very heavy clay soil it is sometimes necessary to put gravel under and around the outlet tile.

A more durable grease trap could be made in a similar manner out of concrete. Make a cement box thirty inches square and four feet deep, with a cement bottom and top. Arrange tile and piping the same as in the barrel.

WHEAT CONSERVATION A MILITARY MEASURE.

The conservation of wheat is now a military necessity. And while private homes will not be required to observe special days as wheatless, they are urged to go farther and make every day wheatless where circumstances permit. The housekeeper who cannot take wheat wholly from the menu is requested to cut each member of her family to at least one and one-half pounds per week. How she shall do this and how much greater reduction she can make is left entirely to the individual. The Food Administration believes that the imperative necessity for this measure will be well understood.

WHEN USING CORN MEAL.

To prevent the raw taste in corn cakes and bread, mix the meal with milk a few hours before baking the bread. When ready to bake add the salt, egg, flour, and last of all the soda, or if sweet milk is used the baking powder. Mush should be boiled a long time. I cook the mush thoroughly, being careful not to make it too thick, then place the kettle tightly covered, in the oven where it can be kept at a boiling point for several hours.

—E. G.

A WHEATLESS, SUGARLESS AND BUTTERLESS CAKE.

The following barley molasses cake is very good, and is a cake for a patriot: One cup of molasses, two eggs, quarter cup of fat, one cup of sour milk, one tablespoon of baking soda, two cups barley flour, spices, half teaspoon of salt.—N. Dak. Ag. College Bulletin.

HOME QUERIES.

Household Editor.—Being a reader of your valuable magazine, I thought I would like to ask a few questions.

1. What is a sure and easy method of cleaning galvanized ware, such as wash tubs, pails, etc?
2. What can I use to clean aluminum ware so it will look like new?
3. Also silverware that has turned dark and looks more like pewter? The silverware has not been used.
4. What is a sure cure for dandruff and falling hair?
5. What will remove hair, what some call scolding locks, as they are very unsightly, yet always in sight? Can someone recommend something that will remove the hair without injuring the skin?

7. Why should we turn our clocks ahead one hour March 31?—V. L. L.

1. I know of nothing better than either kerosene or gasoline; preferably gasoline.

2. Aluminum may be cleaned by boiling with an acid, vinegar, about one-fourth of a cup to a quart of water. Or it may be cleaned by polishing it with steel wool, or any of the aluminum cleaners sold for that purpose. Cooking an acid, as tomatoes, in a dish, will brighten it.

3. Whiting moistened with ammonia is a good silver polish. Use a flannel or a chamois skin to clean with, and wash in hot suds.

4. I do not know any "sure cure" for dandruff and falling hair. You had better consult a hair specialist.

5. I could not recommend a depilatory. You will do better to pin the "scolding locks" up snugly with invisible pins than to try to remove them.

6. We do not insert such questions in the Michigan Farmer as they are in the nature of advertisements.

7. Clocks were turned ahead one hour on March 31, so that we would get up that much earlier and have one more hour of daylight in which to work.

Household Editor.—Can you, or any of the readers of the Michigan Farmer, give me the pattern of the quilt called the "Star and Crown"? I saw one some years ago, but do not remember how to make it. I shall be very grateful.—Mrs. M. L. S.

Western Electric POWER and LIGHT



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MICHIGAN FARMER PATTERNS.

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

No. 2428—Ladies' Dress.—Cut in six sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 5½ yards of 40-inch material. The skirt measures about two yards at its lower edge. Price 10c.



No. 2427—2442—Ladies' Costume. Blouse 2427 cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require four yards of 36-inch material. Skirt 2442 cut in seven sizes, 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 24 will require 2½ yards of 44-inch material. The skirt measures 1½ yards at the foot. Two separate patterns, 10c for each pattern.

No. 2437—Girls' Dress. Cut in five sizes, 6, 8, 10, 12 and 14 years. Size eight requires 3¼ yards of 44-inch material. Price 10c.

No. 2186—Infants' Set, consisting of a cap, a sack, a night gown and dress. Cut in one size. For the dress of flouncing it will require 1¾ yards of 36-inch material with 1¼ yards of plain material for yoke and sleeves. Of nainsook or lawn 36 inches wide it will require 2½ yards of 24 or 27-inch material. The cap a half yard of 18-inch material. The sack requires ¾-yard of 27-inch material. Price 10c.



No. 2430—Girls' Dress.—Cut in five sizes, 2, 4, 6, 8 and 10 years. Size eight requires four yards of 27-inch material. Price 10c.



No. 2447—Girls' Dress. Cut in four sizes, 2, 4, 6 and 8 years. Size six requires 2¾ yards of 36-inch material. Price 10c.

Our Boys and Girls

At Work and play

Name Your War Garden After Your Own Hero

HERE is a new idea in the United States school garden army:

It is this: "What are you going to name your own little plot of ground, little sister, if you are lucky enough to have one of your own in your own back yard?"

What are you going to call your potato patch, brother, you with the bright eyes that weren't so bright the day you went down to the station to see big brother off with his regiment?

Oh, yes, you fell in behind the soldiers and kept fine step to the music of the band and held up your head and felt big enough and strong enough to march a thousand miles and take a million German prisoners—but when he had gone and you went home and mother put her arms around you and laid her head on your shoulder and asked you to help her to be brave—something queer happened to your heart and you have never felt quite the same since, have you?

And now they are beginning to tell you in school about Russia and what a rich country it is and how much it will mean in food if the Germans really get possession of it—and at home sometimes your grown folks look pretty serious and you wonder if it could be possible—no, it isn't, and you are going to help make it impossible. You and those strong little brown hands of yours.

You and your brave heart and your loyal soul. You and your war garden that you are cultivating for Uncle Sam.

You'll have good luck with your garden or good success with it. There

isn't much luck in the garden business. It all just simmers down to hard work to stick to the garden and do your and the right kind of care, and it is going to be hard work, too.

Nothing easy about it; not a thing.

There will be hot days when your back aches and you want to go swimming; and cool days when your knees ache and you want to curl up in the loft of the barn and read, and go out in the lot and play base ball, especially if you're a catcher and have a perfectly good catcher's glove; and you will have work for Uncle Sam.

Have you decided what you are go-

By WINIFRED BLACK

ing to name that little garden of yours?

I will tell you what I am going to name mine—mine is going to be called Sam Brown—because Sam Brown is a boy who never had a chance in his life till the war broke out, and then he saw his chance and took it, and he is over there in France today fighting for you and for me and for Uncle Sam, and I am going to name my little garden after him.

What are you going to name your garden? Who is the soldier you know? Who is the one you think of when you hear them singing "Over There" and "The Long, Long Trail?"

It's a long, long trail he's following, brave boy, a long, long trail and far away from home and those who love him—may he follow it 'till it turns and brings him home again. Home to love and shelter and friendship. Home to the old fireplace and the old books and the old songs at evening, and the little brother who has been so faithful to his memory ever since he's been gone.

And in the meantime let's name the little garden in our own back yard for him, so that if there is a county fair and some of our garden truck goes on exhibition the name of our particular soldier boy will be there at the booth for everyone to see—and remember.

Come, little sister, you are doing your part, too, and doing it faithfully whether you are tired or not; whether you wish you should go down town and have an ice cream soda and forget that there was such a thing as a rake or hoe in the world. You are the comfort of your lonely father's heart nowadays. Where's that picture of the boy in uniform? Your own particular Soldier?

You wouldn't take anything in the world for it, would you? How handsome he is, and how brave. It makes your eyes fill with tears of pride even to think of his name—call your little garden after him and write to him over there in the trenches and tell him about it, and just wait till you get back his letter in reply.

"Sam Brown," that is going to be the name of my garden.

What is going to be the name of yours?



This Year we are all Interested in Gardening.

HERE are many ways in which your banker can and will serve you, and we shall never be able to enumerate all of them.

If you are doing much business you will, from time to time, be receiving checks from other people in payment of debt, or for products sold, and not the least of the service your banker renders you is in becoming a "clearing house" for your checks and other items of paper you may receive. If it were not for the banker to handle them for you, you would be placed to no small amount of trouble in getting these items exchanged for real money, but when you have a bank account all of this is eliminated—you simply unload it on your banker. When you make a deposit you simply list all of the "items" as they are called, on your deposit ticket and the teller gives you credit for the amount no matter on what bank or where drawn.

Now, it costs the banker something to collect these items, in fact, it amounts to a goodly sum during the year's business, but in most cases and with most bankers, if you are carrying a regular account with a reasonable balance, he will pay this expense out of the bank's funds, charge it to expense and give you credit for the full amount at par. Did you ever stop to think about this, and that you get credit on the very day you deposit them, and it will take the banker from two to eight or ten days to collect and get his money back?

Now, because he gives you credit for the full amount of all the checks

you may list and deposit with him, don't jump at the conclusion that this is absolutely final and that the checks were all good and you have your money for ever and aye on them. When he shall send them to the bank upon which they were drawn, or when they shall finally come to such bank through the clearing house or otherwise, if the bank refuses them, if there are insufficient funds or no account at all, as sometimes happens, then that little check will take just the reverse route from which it traveled after it left your banker and will surely come home to "roost," i. e., it will come back to your bank and he will in turn make out, what he calls a "charge ticket" against your account, for the amount so the whole matter is one of credit and confidence from start to finish.

Your banker had confidence in your credit and ability to make good to him if it did not prove to be good, and every man or institution that handles it from start to finish is always banking on the fellow who has "gone before" or the chap of whom he obtained it, to make good to him if it does not prove to be good.

Now, when you accept a check from anyone in payment for debt or products sold, do not say, "well, this check

is good, I will slip it in my pocket and keep it until I need the money." This is not good business, and should never be done. If you don't need the money collect on your check promptly and deposit the money on your own account. For it sometimes happens that a check may be good when written and for some time thereafter, but later on the man "goes broke," or the bank upon which it is drawn goes broke, and then the check is not good and the courts have held that if you accept a check, that is good at the time you accept it, that you hold it for an indefinite length of time beyond what is needfully required to make the collection in the regular course of business and in the regular way, that you are guilty of negligence and that you cannot recover should the bank upon which it is drawn become insolvent and be unable to pay it.

At first thought one may say, "why, this is not fair," but if one will think it over for a few minutes he is quite apt to accept the decision as sound. If a check is given you, your debtor has a right to expect that you will collect on that check with reasonable business promptness, that you will at once put it through the channels usually pursued by you in the transaction of your

regular business. You owe it to your friend to do this.

You may next ask, where is my check good? It is good anywhere that people know you well enough to have confidence in you. If you are away from home and wish to cash a check, get some acquaintance to go with you to the bank and endorse the check for you, and his banker will pay it then, just as your banker would for one of your friends when you endorse for him. Remember, when you do this that you have become sponsor for that check, so don't do it unless you are sure you know the party for whom you are endorsing. If the check were not good it would come back to your banker and he would make a charge ticket to your account exactly the same as if it were your own check and was being returned. You will often be called upon to perform this service and you will usually feel perfectly safe and will be safe in accommodating your friends, but don't do it unless it is someone you know well, or would be willing to pay the check if he could not.

Don't endorse any promissory paper just to be a good fellow. It's bad business and will make your banker lose faith in your good judgment and business acumen as quickly as almost anything you can do. Stand on your own business foundation, build your own credit so clean and so clear and so high that you will not need to ask favors of others, and that you can afford to say, in answer to such a request, "I can't afford to spoil my credit by indiscriminate use."

How the World's Business Is Transacted - By COMFORT A. TYLER



Boys' and Girls' Club Notes

Conducted by E. C. Lindemann



Over two thousand school children in Grand Rapids have already enrolled in garden clubs.

The Boys' and Girls' Club Leaders of Michigan have voted to buy the necessary equipment to place one French family back on its farm in the destroyed region. Club members will soon be asked to contribute a portion of the profits to this cause.

The handicraft and garment-making clubs of Saginaw county will hold their annual round-up and exhibit at Saginaw on Saturday, April 27.

The Kent County Round-up for handicraft and garment-making clubs will take place on May 4 at Grand Rapids.

State, district and county club leaders of Michigan will hold their regular monthly meeting at Saginaw on April 26-27.

Glenn Aldrich, of Mecosta county, won the State Bean Club Championship with a yield of twelve bushels on a half-acre. His net profit was \$64.41. Among the second-year girls Florence Biddle, of Hillsdale, won first place in the senior class. Gladys Wescott, of Hillsdale county, won first in the junior class. Among the first-year girls Techla Pinozick, of Delta county, won first place in the senior class, and Adeline Dickey, of Branch, won first place in the junior class.

Club exhibits will be used as part of the graduation exercises in many schools this spring.

Six cities in Michigan are conducting weekly schools of instruction for vol-

unteer garden club leaders. Instructors are sent out by the Agricultural College.

Over one thousand French and Belgian baby outfits and Red Cross articles were shipped by the Girls' Clubs this week.

Mrs. Lucia Converse, of Union City, has been appointed Calhoun County Club Leader to succeed C. E. Ackley.

Mr. Percy Howe has been appointed garden club supervisor for the city of Jackson.

Eight cities in the upper peninsula have made arrangements for employing garden supervisors for the coming season.

Ingham county has twelve boys' and girls' clubs in operation.

One of the interesting visitors at the college during Farmers' Week was Clifford Felt, of Marquette county. He is the potato champion who raised 144 bushels on a quarter of an acre of land. The business men gave him a free trip to the College.

East Lansing boys gave handicraft demonstrations during Farmers' Week. The garden cultivator was constructed as a part of the demonstration.

Poultry clubs are becoming more popular each day. Eggs for setting may be secured at moderate prices through the Poultry Department of the College.

Community canning clubs will be popular this summer. Girls should prepare now for the details. No garden products can be wasted this year.

A Game for the Children

"Good Morning."

Requires ten to sixty or more players, and can be played in schoolroom or parlor.

This is a very pretty sense-training game, as it cultivates discrimination through the sense of hearing. Little children are very fond of it, and it is most interesting and surprising to note the development of perceptive power through the playing of the game.

One player blinds his eyes. He may do this by going to a corner of the room and facing the wall, with his hand over his eyes; or a very pretty method is to have him go to the teacher or leader, with his face hidden in her lap, and her hands on either side of his head, like the blinders of a horse.

The teacher silently points, then, to some other player in the class, who rises at once and says, "Good morning, David," (or whatever the child's name may be). The little guesser, if he has recognized the voice, responds with "Good morning, Arthur," (or other name). If he does not guess the voice after the first greeting, the child may be required to repeat it, until the guesser has had three trials. Should he fail on the third trial, he turns around to see who the player was, and changes places with him. If he names the right player, the guesser retains his position until after he fails to guess the voice of the one greeting him, one player after another being required to stand and give the greeting, "Good Morning!"

When pupils have become somewhat proficient in the guesser's place, the others should be required to change their seats after the guesser has blinded his eyes, so that he will not be assisted by the direction from which the voice comes, in his judgment, which is very easily the case, where the other players are in their accustomed seats.

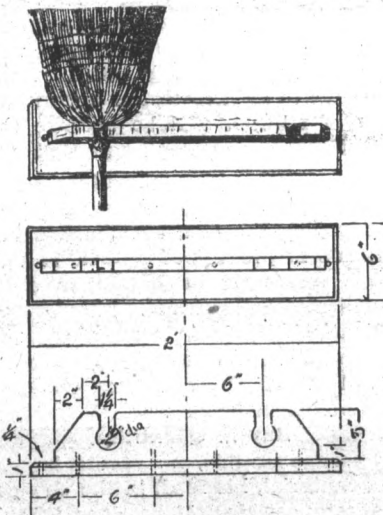
Of course, the greeting will be varied

according to the time of day, being "good afternoon," or "good evening," as may be appropriate. Occasionally, in a school game, a pupil from another room may be called in. Should a strange voice be heard in this way, the little guesser is considered correct if he answers, "good morning, stranger."

Broom Holder.

There are many kinds of broom holders now being used as exercises in handicraft work. The simple one here shown can be modified to hold more brooms or only one broom. It can also be modified for use in the barn for the forks, or manure pusher.

Care should be taken in the selection of the material that no cross-grained or brash pieces are used for the front piece since it would be apt to split easily.



Material.—One piece 1x6x24 inches; one piece 1x4x20 inches; half a dozen flat head No. 8 screws 1½ inches long.

Tools.—Cut-off saw, jack plane, try-square, two-inch extension bit, screw driver, brace and half-inch bit.



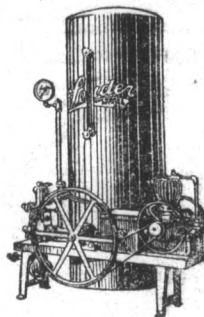
Can You Afford to Spend Time Pumping Water?

Time is money to the farmer—particularly this year with so many farm boys in Khaki.

Let the

Leader

Do the Work!



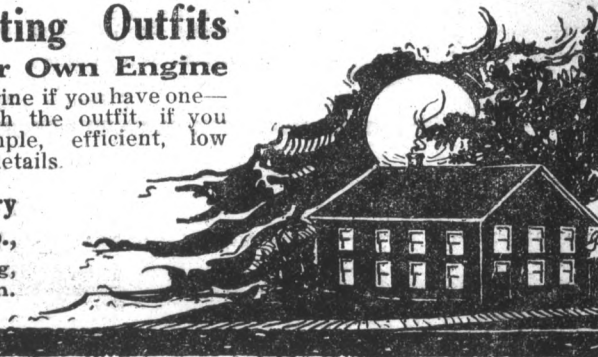
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Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

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

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

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

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

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

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

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

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

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

U. S. Employment Service,

Dept. of Labor.

Detroit, Grand Rapids, Sault Ste. Marie and Port Huron, Mich.



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INSIDE TYRES Inner Armor
for Auto Tires. Double mileage, prevent blowouts and punctures. Easily applied in any tire. Used over and over in several tires. Thousands sold. Details free. Agents wanted. American Accessories Co., Dept. 712 Cincinnati, O.

Plan Now For Greater Conservation Of Grains

Saving your grain to sell is doubly important this season—for the nation and for yourself. The more grain you can raise and sell the better fortified will the nation be. By using more ensilage and proportionately less grain feeds, you will make more money with which to buy Liberty Bonds or improve your farm for still greater production next season.

To cut your own ensilage economically and make money filling your neighbors' silos get one of the famous

Kalamazoo ENSILAGE CUTTERS

"The World's Standard"

—the only real center-shear cut machines on the market—the machines that have made good from the start and are now recognized as the strongest, safest, fastest cutting machines in the world.

Excess strength in every part—that's why they stand up so well. Malleable, unbreakable knife wheel insures durability and safety. The remarkable construction of the cutter head, which is the blower, makes fast cutting practical.



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KALAMAZOO TANK & SILO CO.
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Canada made me Prosperous

—that's what thousands of farmers say, who have gone from the U. S. to settle on homesteads or buy land in Western Canada. Canada's invitation to every industrious worker to settle in Manitoba, Saskatchewan or Alberta is especially attractive. She wants farmers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops to feed the world.

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or other lands at very low prices. Where you can buy good farm land at \$15. to \$30. per acre that will raise 20 to 45 bushels of \$2. wheat to the acre—it's easy to become prosperous. Canadian farmers also grow wonderful crops of Oats, Barley and Flax. Mixed Farming is fully as profitable an industry as grain raising. The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools and churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Can., or to

M. V. McINNES

178 Jefferson Ave.,

Detroit, Mich.

Canadian Government Agent.



Cooperate In Buying Feed

By W. F. TAYLOR

At present there is much interest in the buying of feed stuffs. This comes about, I think, on account of the great scarcity of feeds and their unusually high prices. People simply do not know what to do. All last summer the papers were full of advice to grow more pigs, to keep their cows, even the poor ones, because dairy products were going to be so high and so hard to obtain, to keep more hens because eggs would take the place of meat, and hens could be so quickly grown.

Mathematicians have been doing examples to prove how many chickens an old hen could add to the world's supply, and how largely an old mother hog might increase the number of her kind if she but performed her patriotic duty, and then last fall the chickens were here, but scantily fed, and the pigs were here, too, but their owners were trying to sell them because the corn was not in supply, sufficient to their needs, and prices of other feeds made them hesitate.

The feed situation is having a marked influence on conditions generally in the country. A few months ago a man in our town said to me: "Horses sold here last fall lower than any man would have guessed that they could sell, a few months before. People simply did not have the feed to winter them and had to let them go."

The dealer's margin on feed must be more for each ton than under former conditions, because he has to put so much more money into the business. To buy a car of feed now requires an investment twice as great as in normal times. This being the case, the dealer's profit must be great enough to warrant this added investment, otherwise he can not handle the feed.

On the other hand, the farmer who needs the feed for his cows or his hogs must buy it as cheaply as he can in order to be able to feed it with any profit. Upon the farmer, in this worldwide conflict, devolves the important task of furnishing meat and dairy products to our people and those of our allies who are in need of them.

It is our duty as American citizens to do our best to feed our people and those with whom we are engaged in this mightiest war in the history of the world. It is our duty, I say, but it is not our duty to do it at a loss. Our people will not do much of it at a loss. If the farmers keep and grow their hogs and their young cattle, if they continue to milk cows, and keep up the flow of milk, it will be because they believe they are going to get their pay.

The farmer is a manufacturer of meats and dairy products. His raw material is the feed consumed by the animals in process of growth, and the meat, and milk or butter or cream are his finished product. This he must sell at wholesale in competition with everyone else, who, like him, is engaged in dairying or in any branch of live stock husbandry.

Buy in Quantities.

Because of this, he should buy his raw material, his feed, in the cheapest market possible. If he does this, he can afford to keep his pigs until they are grown and fit for the block. If he does this, he can feed his cows with hope of profit when the milk or cream is paid for. Otherwise he can not be so sure. Because his government is at

war, because people are offering their lives in defense of her principles, because the products of his farm and his dairy are needed, not only to feed the soldiers, but for women and children at home, and because he can not afford to produce even food at a loss for very long, he should unite with his neighbors and buy the feeds he needs at the lowest possible price.

There is reason enough for doing this at any time, but today of all the days within our knowledge, it is demanded under the circumstances, that every man should do his best, and the feeder or the dairyman can not do his best while buying feed by the single bag, of a dealer who must buy it on time, pay freight on less than car lots, store it until he finds a buyer, trust the buyer for the pay, and now and then lose that, and so have to figure a percentage of profit large enough to make the good customer pay the bad man's debts.

Every man will not buy feed in cooperation with his neighbors, and so there will be room for the dealer for some time to come. We all need someone in our town who keeps feed on

hand, for when we get out, and our car has not come, we shall want to buy. When we do need the feed dealer, we should be perfectly willing to pay him his profit. Personally, I am willing to allow him to say what that profit ought to be, in my own case, for I do not often need him, and then not

for long. But in a general way, there can be no question but that we who feed cows and hogs ought to buy the feed we do buy, in carlots, and take it directly home from the car.

The Writer's Experience.

The writer has had a long experience in this sort of thing, he has ordered and delivered feed to his neighbors for years and so can speak from experience. I have told before in these columns how our community came to buy its feeds so largely in carlots, and will not repeat it here. I only wish to say that in all the years that have come and gone since we began this work I do not recall the loss of a single dollar because of the failure of anyone to pay for feed taken from the car.

No Elaborate Organization Needed.

Any community can secure to themselves the advantages of such a system of buying if they will go about it in the right way. Creameries can buy feed for their patrons, and there are a few distinct advantages in their so doing. The creamery company usually has on hand more or less money belonging to the patrons, soon to be paid out for butter-fat. When the car of feed arrives this money is all ready and may be used to take care of the sight draft. When the feed is delivered, the patrons have the money thus employed. Another advantage is, that the pay for the feed may be taken out of the cream checks at time of settlement. This is a greater advantage to the purchaser than to anyone else, as he does not in this case give the payment for the feed much thought. He simply goes to the car and gets it, knowing that the money will come out of his next check.

The writer has no creamery money to pay for the cars he orders, but has grown so used to having people pay for their feed promptly that he does not give the matter any more thought now, than does his neighbor, the secretary



Only \$2 DOWN ONE YEAR TO PAY

\$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

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

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

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Built of everlasting Brazil Vitrified Fire Clay. Reinforced with steel ribs bedded in cement. You'll never have to rebuild it. Your neighbor has one. Ask him. Send for Booklet D

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Sturges Steel Churns

Make Butter With Ease

Drawn steel barrel—smooth as a bowl—easy to clean. Cannot soak up moisture—saves work and time. Just what every housewife wants. Good for a lifetime use. Beautifully finished in red and blue. Ask your dealer or write us for circular No. 5.

Sturges & Burr Mfg. Co.
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Established in 1865

For Sale. 40 horse gasoline or kerosene engine in A-1 condition.
The BUNDAY BEDDING CO., Inc. Lansing, Mich.

Please Mention The Michigan Farmer When Writing to Advertisers

of our creamery, who also orders feed and delivers it from the car.

If the creamery company does not wish to handle feed, then some individual in the community should do it. I have read and heard much about cooperative companies for the purpose of buying feeds, but unless the cooperative company does other lines of business, I certainly should not consider it necessary.

Deliver to Farmers from Car.

Again, the idea of having a community building in which to store the feed is not wise. The feed should be taken directly from the car, and the farmer should store it for himself. If the neighborhood builds a building for the storing of feeds, and hires someone to look after it, that someone will not do the business any cheaper than the man in town, who is in business now, and understands a great many things that it would take the beginner a long while to learn, but which, nevertheless, he must learn if he goes into the feed business in competition with the men in town.

The man who delivers feed from the car has no competition as a rule. He has a business that is positively safe if he is a good business man.

I want to try to tell the reader just what this man should be like, and what he should do to make a success of this important work. To begin with, he ought to know something about feeding, in a general way. The more he knows about it the better. If he knows about feeds and feeding, he will be of much value to his community. There is a great chance to make mistakes in the purchasing of feeds. The man who reads, and thinks about feeding cows, and hogs, who watches experiments in the feeding of sheep and lambs and the fattening of steers, will be a safe man to advise his neighbors what to buy. This advice will result in the ordering of just what is best under the circumstances.

There are always two questions that confront the prospective buyer of feed stuffs. First, what is the value of this feed in a general way; and second, what is its cash value today in the market? For example, white middlings are better than brown middlings for feeding pigs. But what is the difference in the market value today? Cottonseed meal is a carrier of cheap protein, but what is the market value, and what are the values of gluten meal, oil meal, and wheat bran?

All the companies making ready-mixed feeds are looking for patronage. How shall we know whether or not to buy unless we know the relative values of these feeds, and consider them in relation to the prices at which they are offered? And how can we do this unless someone among us has made a study of feeds and is ready to give us the benefit of his advice?

If farmers are organized, this matter may be discussed in the Grange, in the Gleaner Arbor, or in the Farmers' Club, as the case may be. If the county agent is posted, he may be called in, and his help secured; but to supplement the work of these there should be someone right in the community who has given this matter enough study to make his opinion of value.

Again, it is important for the man who buys the feeds to keep very close to the market. Otherwise he will not know when to buy and is certain to make some mighty bad mistakes.

Once more, he should find some good reliable company to buy from and then stick to that company. It is always possible for a very large company handling feeds to favor a good customer in the buying of feeds when they would not feel like doing so with a man whom they did not know.

Again and again I have saved a nice little sum for my neighbors by sticking to one good company long enough to make it pay them to do me a favor.

Nothing is so necessary as that each deal should be for cash. Everyone

should understand that if he orders feed he must be on hand with his money when it comes.

It is a mistake to try to buy feed on credit. One can get better terms for cash, and just as soon as the public finds that the man who handles feed gets credit, they will want credit also and soon the object of the enterprise will be lost, and the work will have to be given up.

We should remember just here, that we are not entering into this work because we think the dealer is getting too large a profit, but because his method is wrong. If we farmers are to buy feed, store it in warehouses, and sell it on credit, then I doubt very much if we can do it a bit cheaper than the average dealer. But if we are always on hand with our money, if we buy the right kind of feeds, if the man who does the business is square with his neighbors, this thing can go on for years and years without the least trouble whatever, and thousands of dollars can be saved each year to the community.

HOLSTEIN SALES IN MICHIGAN.

The West Michigan Holstein Breeders' Association held its spring meeting April 3 in Grand Rapids, and H. E. Rising, of Woodland, the new president, presided. There were interesting talks on breeding registered Holsteins and on the outlook for the breeder now and after the war by Robert M. Monteith, of Martin, and Albert E. Jenkins, of Lansing, with discussion by Arthur Clarke, of Alto, T. J. Blanchard, of Sand Lake, H. G. Smith, Kent county's agricultural agent, and others. Very optimistic views were held as to the future and it was felt that the black and white herds in this country have an important part to play in winning this war, while the demand for this breed will be sharp and insistent after the war.

The annual spring consignment sale of registered Holstein cattle will be held in May at the West Michigan State Fair grounds, Comstock Park, Grand Rapids, under the auspices of the association, and seventy-seven head have been entered in the sales catalog. Secretary W. R. Harper, of Middleville, is sales manager, and Colonel Perry, of Columbus, Ohio, is the auctioneer.

Thomas Phoenix, president of the Holstein-Friesian Breeders' Sales Association in the Saginaw valley, announces that the annual sale of registered cattle at the Saginaw fair grounds will be held the last of April. Kent Co. ALMOND GRIFFIN.

1917 YIELDS OF GRAINS IN MICHIGAN.

Grain and seed threshed in Michigan up to and including March 23, 1918, as per returns of threshermen is as follows:

	Acres.	Bushels.	Yield.
Wheat	772,515	13,924,238	18.02
Rye	323,431	4,533,759	14.02
Oats	1,240,278	44,812,063	36.13
Barley	129,032	3,319,716	25.73
Buck w't	32,598	349,484	10.72
Peas	14,926	154,987	10.39
Seed:			
Timothy	1,988	9,828	4.94
June clo.	7,207	6,792	0.94
Mam. clo.	5,121	10,865	2.12
Alsike clo.	5,461	16,921	3.10
Beans:			
White ...	419,616	2,866,284	6.83
Red kid.	8,681	45,957	5.29
Brn Swed	2,237	12,359	5.52

LOST HIDES.

One custom tanner reports that a dozen or more hides have been shipped to him this season without the owner's name, freight bill, or any record whatsoever accompanying the shipments. It is, of course, impossible for him to make acknowledgement of the receipt of these hides or to return them. He assumes that other tanners are bothered in the same manner. Extreme care should be exercised in properly marking shipments, so that returns can be made. No doubt tanners are many times blamed for not returning the hides, when the fault lies with the customer.

"Harnessing the Air" to Save Butterfat

The air is a great wizard. Properly employed, (as in a Sharples Suction-feed Separator) it will save this country eighty million pounds of butter which fixed-feed separators waste because 95% of them are turned below speed much of the time.

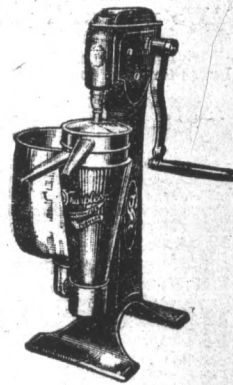
The Sharples Suction-feed principle really harnesses the air and makes it work for you. By means of the suction-feed, just enough milk enters the tubular bowl as can be perfectly separated. As your speed varies so does the suction-feed. Thus, Sharples saves the cream waste that results when fixed-feed separators are turned under speed.

SHARPLES SUCTION-FEED CREAM SEPARATOR

Skims Clean at Any Speed

While air is free to everybody, yet the suction-feed principle is exclusive with Sharples and fully protected. Bear that in mind when you investigate a separator and insist on knowing if it will skim clean at any speed. Get proof.

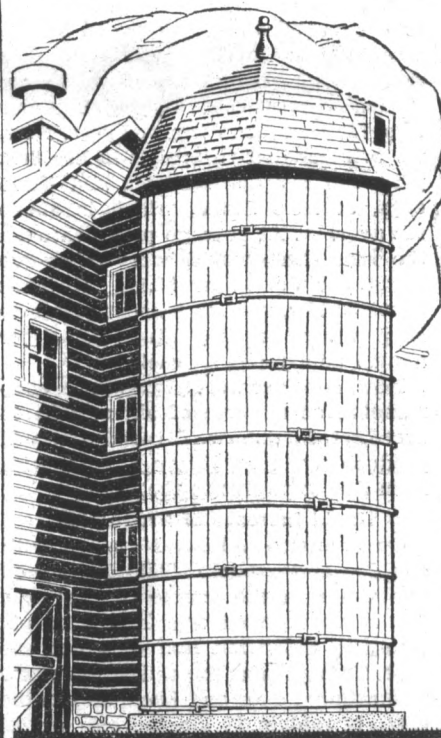
There are no discs in a Sharples tubular bowl, which adds further to its superiority. The one-piece bowl is easy to clean, easy to turn—even for a boy. Write nearest office for catalog, addressing Dept. 18



The Sharples Separator Co., West Chester, Pa.

Sharples Milkers—used on half a million cows daily

Branches: Chicago San Francisco Toronto



FILL THEM and EMPTY THEM

That's all you have to do with Century Silos. They need little care or attention. They are made for long, hard use—built to last a lifetime.

Besides preventing decay, the thorough creosote treatment makes it unnecessary to paint a Century Silo and thus does away with the biggest expense of silo upkeep.

Creosoting the staves also prevents swelling and shrinking. It is rarely necessary to tighten or loosen the hoops. Write for folder today.

The Michigan Wood Preserving Company

Reed City, Michigan Century Building, Pittsburg, Pa.

Century Creosoted Silos

"Last till the cows come home"

TOBACCO FOR SHEEP

Feed tobacco with salt now and escape stomach worms later. Three parts salt and one part tobacco siftings kept before sheep will kill stomach worms, etc. Our tobacco siftings are made by granulating Kentucky tobacco in manufacturing our celebrated brand, "Old Hill Side Smoking Tobacco," insuring high nicotine content. Price \$4.00 per 100 lb., f.o.b. Louisville. AXTON-FISHER TOBACCO CO. Inc., LOUISVILLE, KENTUCKY

PROFITS IN HONEY



Sugar is scarce. Honey is in great demand. High prices prevail. Make your bees produce more than ever before. Send for our catalog for prices on Bee Hives, Section Boxes, Comb Foundation, Smokers, etc. Beginner's complete outfit furnished with or without bees.

Beeswax wanted.

BERRY BASKETS

There is a scarcity of berry baskets and we advise prompt action. Let us know your exact requirements and we will quote you prices on standard quart baskets and 15-qt. crates. We can make immediate shipments at present.



M. H. HUNT & SON,
Box 525, Lansing, Mich.

FLEMINGS

EGG PRESERVER

No cold storage. No solutions. Indorsed by over one thousand egg producers and commercial institutions throughout the United States in the past four years. Send today for absolute proofs to BEARD & HOUSE, State Distributors for Mich. 616 & 617 Chamber of Commerce Bldg., Detroit, Mich. County Agents Wanted.

BEES PAY WELL.

Send for Free Illustrated Catalog. Bees and Queens a Specialty.

S. J. GRIGGS & CO., Dept. No. 29, Toledo, O.

POULTRY



BABY CHIX

Hatched for

5 Cents Each

Do you know that the chicks hatched by your hens cost you 22 cents each?

They do. Let us prove it to you.

We will hatch your eggs at 5c per chick hatched, and for less if you get a poor hatch.

We furnish container for eggs to be sent us and boxes for your chicks. Both sent parcel post.

Our Capacity---Two-thirds of a Million or 40 Tons of Eggs Every Three Weeks

We also sell purebred Barred Rock, White Rock, White Leghorn, Brown Leghorn, Buff Leghorn, White Wyandotte, Rhode Island Red, Black Minorca and Ancona chicks. Lowest Prices. Safe delivery and satisfaction guaranteed. Send for catalog.

THE SMITH STANDARD CO.,
1967 W. 74th Street, Cleveland, Ohio

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A Federation of Interests

Order Day-Old Chicks

Order Day-Old Chicks now of the following pure bred free farm-range stock: Barred, White and Buff Plymouth Rocks; R. C. and S. C. Rhode Island Reds; White Wyandottes; S. C. Black Minorcas; S. C. and R. C. White Leghorns; S. C. Brown Leghorns; S. C. Anconas.

Eggs for Hatching

All the foregoing pure breeds and also, at a lower price, eggs for broilers; sittings and in quantities for incubators. White Pekin Duck Eggs. Unlimited supply of Chicks and Eggs in Barred Rocks, R. C. and White Leghorns. Please send for descriptive circular and price list. HOMESTEAD FARMS, Bloomingdale, Mich.

ANCONAS--Winter Layers. Eggs \$1.50 per 15. W. E. WEST, R. 1, East Lansing, Mich.

Baby Chicks from Standard Bred S. C. White and Brown Leghorns. Good laying stock. \$13 per 100. Safe arrival guaranteed. Catalogue free. Book your order now for spring delivery. Wolverine Hatchery, Box 202, Zeeland, Mich.

Barred Rocks--EGGS FROM STRAIN with records to 280 eggs a year: \$2 per 15. Delivered by parcel post, prepaid. Circular free. FRED ASTLING, Constantine, Mich.

Barron English 240 egg strain White Leghorns, heavy winter layers, large size birds. Hatching eggs \$6 per 100. Chicks \$13 per 100. Guarantee satisfaction. Devries Leghorn Farms and Hatchery, Box A, Zeeland, Mich.

Barred Plymouth Rock eggs for hatching from full blood stock prize-winning strain \$1.50 per 15. J. A. BARNUM, Union City, Mich.

BARRON STRAIN S. C. White Leghorns Bred to Lay long bodied vigorous stock. Eggs and Chicks, prices right. Bruce W. Brown, R. 3, Mayville, Mich.

Baby Chicks Young's Strain S. C. White Leghorns free range stock, safe arrival guarantee, catalogue free. Knolls Hatchery, R. 3, Holland, Mich.

BABY Chicks. Bred-to-lay S. C. White Leghorns at last year's price, \$12 per 100. No catalogue or circular. Order direct from this adv. Cash in full with order. Hatch every Tuesday, beginning April 2. Sunnybrook Poultry Farms, C. G. Burroughs, Prop., Hillsdale, Mich.

BUFF Leghorns, Cockerels at reduced prices. Egg from a great laying strain, \$1.50 up, per setting. Cheaper by the hundred. Dr. William Smith, Petersburg, Mich.

Buff Orpingtons--Seventeen years. Best exhibition egg producing strain. Eggs or Baby Chicks. Circular free. WILL SCHADT, Goshen, Indiana.

BRED-To-Lay S. C. W. Leghorns and Barred Rocks. Eggs, \$1.25 for 15, \$2 for 25, \$3.50 for 50.

ALPINE POULTRY FARM, R. 2, Grand Rapids, Mich.

Choice Chicks April and May hatched heavy breeds and Leghorns \$2 for \$9. 104 for \$17.50. Eggs per setting of 15, \$1.50; per 105, \$7.50. Crescent Egg Company, Allegan, Mich.

Chicks, We ship thousands, booking orders now FREEPORT HATCHERY, Box 12, Freeport, Mich.

Chicks and eggs, standard bred stock, Leghorns, Minorcas, Spanish Rocks, Reds, Orpingtons, Wyandottes, Campines, Houdans, Polish, Scotch Greys. Tyrone Poultry Farm, Fenton, Mich.

DAY OLD CHICKS

250,000 for 1918. \$10 per 100 and up. Purebred. Hatched right. Strong guarantee. 10 leading varieties. Hatching eggs. Big brooder offer. Western Branch, Augusta, Kansas. Free catalog. Stamps appreciated. Hubers Reliable Hatchery, 333 W. Fremont St., Fostoria, O.

Get the Habit, Raise a Rabbit

GET the habit, raise the rabbit. For the woman who has to make her own living there is no occupation easier, surer or more profitable than a first-class rabbitry. It brings the greatest return in the quickest time from the smallest outlay of any branch of agricultural labor.

said first-class rabbitry, perhaps I should have said first-class stock, good-sized, healthy, pure-bred stock, stock that breeds true to type and color, not culls. No fancy equipment is needed, an old shed or barn, anything that will provide shelter for the hutches, but even a strictly modern rabbitry can be erected at small cost.

It takes but a few minutes to clean the hutches and if attended to frequently, making use of a good disinfectant, there will be no odor. They are remarkably free from disease, and a large number can be cared for in small space.

A Hooverite.

And the eats? Well, Mr. Bunny is a very strict Hooverite. His days are all meatless and he doesn't suffer in the least if they are also wheatless. No sugar is on his menu, so you see Bunny certainly deserves a boost from every loyal American. He makes profit from our surplus garden, our lawn clippings and our table scraps.

The erroneous idea still prevails with many that rabbits were intended merely for pets. It is true that the rabbit being a defenceless animal is harmless, easily tamed and makes fine pets for the children, but they also make the finest kind of eating. The meat is so nutritious, so easily digested, and requires very little time to prepare and cook. That is why hospitals seek it for patients, and that is why a few inquiring mothers have found it the ideal meat for the little ones. Rabbit may be prepared in any way that chicken is prepared.

A prominent Belgian Hare breeder asserts that rabbits are more profitable than hens or cows. I am quoting the following from his article:

The Hare and the Hen Compared.

"The United States census figures show the average annual value of eggs produced on each farm was a little less than \$52, and of poultry raised at \$48, or an average total value of \$100. The average egg product (as shown by the United States census), is sixty-four eggs for each farm hen per year. Now, we will say that the pullet in her first year will lay one hundred and three eggs, or nine dozen, which is above the average. At average prices through the year these would bring thirty-five cents per dozen, or \$3.15. It takes about \$3.00 a year at present prices to keep a hen, leaving fifteen cents per annum as a profit on each hen.

Now, consider the Belgian hare, commencing at the age of six months to breed. One doe well cared for will produce five nice litters a year, with from five to twelve to the litter.

Rapid Increase of Production.

On January 1, 1915, I started with one doe and a buck. This doe I bred five times in the course of the year, and she produced five litters of six young to the litter, half of which are does. This gave at the end of the year: The original does and buck, 18 months old; six rabbits 11 months old; six at eight months old; six at six months old; 24 at three months old; 18 at six weeks old, 18 at three weeks old; six at 19 days old; total 85.

Now, to make this easily understood I will say these hares of more than three months, weighed six pounds, and the balance two pounds each. This is more than fair, for the older ones will frequently weigh up to eight pounds and more. Then there will be forty-four hares at six pounds each, or 264 pounds, and forty-two of 348 pounds, or 331 pounds more than I started with,

a gain of fifty-seven pounds for each pound; 336 pounds at twenty-five cents a pound, the price in Portland, equals \$84. Two or three does will supply a large family with all the good clean nutritious meat they can eat. The cost of feeding the eighty-six hares one year was \$25. Summarizing the average common Leghorn hen produces fifteen cents per year over the cost of her feed, the Belgian hare \$59.

The general average dairy cows, excepting high-class pedigreed stock, do not produce more profit and the work of caring for them and disposing of the milk is far greater, also the cost of equipment."

For my part I think rabbits and chickens can be profitably raised under the same roof. The chickens soon become accustomed to them and it means more profit from the same amount of space.

I am aspiring to a yearly output of at least a thousand hares. I have plans for a new rabbitry, convenient, sanitary, and modern in every respect. So far I have had no disease to combat, not even ear canker or cold sniffles. I ship my hares all over the United States and frequently a number at a time. As a rule I have contracts for hares months in advance and I rarely fail to give complete satisfaction.

The keeping of record and pedigrees is engrossing and interesting work. I write all the letters myself, both be-

Increase Poultry Production



Edward Brown, English poultry commissioner, and one of the most noted poultry experts in the world, is touring this country for the United States Department of Agriculture to stimulate greater poultry production. In his talk recently given in Detroit he said that there was great need for poultry products for use in the care of the wounded soldiers.

In England eggs are twelve cents each and soon there would be a likelihood of the civilian population being denied eggs entirely. England does not have the feed to increase her poultry production so she is looking to America to furnish her with this food, so necessary in the feeding of the sick. Farm flocks should be maintained more efficiently, and everywhere possible back yard flocks should be kept. However, it is mainly upon the farm flock that we will have to rely for the necessary supply.

There are no animal products, with the possible exception of rabbits, which can be so quickly produced for human food as the hen and her products. Europe is practically swept clean of poultry and after the war there will be an unprecedented demand for stock to replace the lost stock. The poultry keeper need have no fear of an unprofitable demand for his products if he will care for his flock efficiently.

cause I know what to say and because I think the buyers appreciate this personal touch.

And now I am going to repeat, "Get the Habit and Raise the Rabbit." The work is three-fold, it brings pleasure, profit, and another chance to do your bit. It may be that we can't all knit, we can't all be soldiers of the soil but we can all raise a few rabbits to save that pound of pork, and that pound of beef for our boys, our allies, those tired women and those wistful, hungry little children over there.

Oceana Co. MRS. CLYDE DUNN.

SOME MISTAKES TO BE AVOIDED.

There are a few mistakes I have made in carign for brooder chicks which I will not have occur again, and will relate my experiences so others can profit thereby.

I had quite a bit of trouble at one time in regard to having chicks pick off the lining on the walls of the brooder house. Owing to lack of better material at the time I tacked several thicknesses of newspaper on the inside of the brooder house. While it had a tendency to keep out the cold it did not stay in place long. It was but a few weeks until the chicks had it torn to shreds. First they picked at it merely for the sake of something to do, but later they made it a practice and kept it up until every bit was removed as far up as they could reach. They not only picked it off but some took to eating the small particles. The whole brood finally contracted the bad habit and nothing could be done but allow the paper to remain off.

To correct the evil I decided to use material for lining that the chicks could not destroy. Thin board walls nailed as far up as the chicks could reach, with an air space between the walls will keep out the cold, and that is what I used.

Another trouble I had was with the earth covering on the brooder house floor. I made it a practice to cover the floor with earth to the depth of a half inch to serve as an absorbent and also to afford something for the chicks to scratch in. Having used up all the black loam which I kept for that purpose, I resorted to soil of a clayey nature, water from the drinking vessels was occasionally spilled on the floor, and when absorbed by the soil formed a sticky mass under the chick's feet. When the chicks scratched in this damp mass the clay would harden on the toes and could not be detached except by force. As a result, the chicks were unable to scratch and were decidedly uncomfortable. And to remove the substance from the toes every few hours was a task not welcomed. A few of the chicks had the ends of their toes broken by removing the hardened clay. All this could easily have been avoided had a little forethought been used.

O. E. HACHMAN.

HENS MUST HELP WIN THE WAR.

Uncle Sam has already drafted the hens and pullets of the country for the great army of the home food guard. Food Administrator Hoover, by his order against killing or marketing for table use any hens or pullets for a period of over two months, showed the necessity for producing more poultry, and more eggs, if the home population is to be properly fed during this year. Save the layers, so that they may produce eggs for hatching, for table use and for storage against the inevitable season of scarcity--this is the gist of his order.

The government says in effect that hens must help win the war. Of course Biddy didn't raise her chick to feed a soldier. But the use of more poultry on the tables of the folks at home will release just that much beef and pork for the use of our boys "over there." To do this the number of poultry flocks on farms and maintained in yards in

the suburbs and in every village and community in the land must be increased.

Last summer, autumn and during the winter hundreds of poultry raisers disposed of their flocks because of the high cost of feeds of all kinds. As a consequence, table poultry sold anywhere from forty to sixty cents per

pound, and eggs of the strictly fresh variety sold for as high as ninety cents and a dollar a dozen, and were scarcely to be had even at that price. This condition existed in the face of the fact that American hens in 1917 produced in round numbers 2,000,000,000 dozen of eggs—the equal in food values to three million beef cattle on the hoof.

Boiled Grains for Growing Chickens

By L. H. COBB

ONE season I fed chick feed while the chicks were small, but concluded that whole grains would be cheaper and better if I could get the little chicks to eat them. I used kaffir some, but I could not get much of it, and wheat and oats were the grains that were convenient to use. Years ago we used to boil the feed for our pigs because it was considered easier to digest and it made them thrive better. I figured that chicks would be more apt to thrive on boiled feeds than pigs, so I boiled a regular ration of oats and wheat, alternated.

The Chicks' Thrive.

My flock of young chicks consisted of one hundred and sixteen. They were a month old when I began to feed the boiled grains, and from that time they did not get any chick feed, but I fed coarse chop once a day. I never saw chickens grow like those did. I did not feed any bone or meat scraps, which I have always fed to my flocks since, but that flock had a large range in a garden, and there were plenty of insects, for the ground had been allowed to grow up to crab grass for several years, and when we say we could not keep it all clean we allowed a part of it to go back to grass. There were about two acres in the range, which I rented because it was fenced chicken tight.

While oats are not good feed for the chicks unless they are boiled, but when they are boiled the grain is soft, the hull will be easily removed by the chickens if they wish to do so, but it is all soft, and they generally eat it all. Wheat swells to an immense size, and

gets soft. I always drained all the water off while hot, and let the grains steam awhile which dried them somewhat, so they were not mushy no matter how thoroughly boiled.

The Need of Appetizers.

Sometimes I would put a tablespoonful of cayenne pepper in the wheat, and sometimes a little mustard. I always salted both grains, aiming to make them just a little less salty than I like my own cereal foods. Salt is beneficial to chickens as well as any other animal. Much of the success with chickens depends on keeping their appetites working full blast.

I paid more than double the price for wheat that I did for oats, but the wheat was as cheap as the oats in the long run, for the chickens would be as well satisfied with half the amount, and after much experimenting that is the proportion I always used in boiling them. While the chicks were especially fond of the wheat, and would hunt the wheat grains out if any were mixed with the oats when it was boiled, they would often clean up the oats more thoroughly than they would the wheat. I always aimed to give them all they would eat up clean, and no more.

In feeding all my flocks after this year I used boiled grains, but when I had several hundred chicks on a range I kept a mash of ground grains always before them with a liberal percentage of meat meal on it. When I could get milk I would use it instead of so much meat meal, but not to entirely supplement it unless there was a chance for the chicks to get a good many bugs.

Diarrhea Checked by Careful Handling

BY observing the methods of correct poultry raising, the loss from diarrhea in little chicks can be greatly reduced. Ninety-five per cent of the diarrhea is not due to the white diarrhea germ but to other causes. Among them are the following:

A little chick is apt to become chilled, which will cause it to have diarrhea. This chilling may result from indiscreet use of the nursery tray of the incubator. For instance, a correspondent recently wrote to the Missouri College of Agriculture that the nursery tray on his machine was registering eighty degrees, or twenty-three degrees below the egg tray. If newly hatched chicks were put in a temperature of eighty degrees, they would become chilled and diarrhea probably would follow.

Use Care in Transferring the Chicks.

Again, many are careless in transferring chicks from incubator to brooder in a cool room and they fail to warm the container which the chicks are to occupy. The hands should be warm and the cloths with which the chicks are covered should also be warm. After they are placed in the brooder, every precaution should also be taken to keep them warm. The brooder should be kept at a temperature of ninety-five to one hundred degrees the first week and reduced about one degree a day until the right temperature is reached. They should be kept warm enough so that they do not crowd at night and they should always be afforded a cool place to which they may go if they desire. Chicks raised with the hen

should not be let out until the grass has become dry because a wet chick is apt to become chilled.

Another cause of diarrhea is the overheated incubator or brooder which may interfere with the natural absorption of the yolk and cause trouble after the chicks are about a week old.

Then, too, diarrhea may be caused by feeding chicks musty or sour food. Corn meal which has become heated in the sack or bin and which has a musty odor should never be used for chick feeding.

Use Clean Chaff.

Diarrhea may also be caused by allowing the chicks to scratch in musty chaff. If this occurs, spores will become imbedded in the lungs of the chick and a white diarrhea with a high mortality will result.

In some cases, diarrhea may be caused by the white diarrhea germ which is said to be present in the ovary of the mother hen and if this is the case, extreme sanitary precautions should be observed. Care should be taken to use only the most vigorous breeding stock available. The incubator should be cleaned and disinfected between every hatch and the brooder should be disinfected every time a chick dies. The incubator door should be darkened at hatching so that healthy chicks will not pick up the droppings of diseased chicks. The drinking water should be colored a claret red by the use of potassium permanganate and the chicks should be fed sour skim-milk as soon as they begin to drink.

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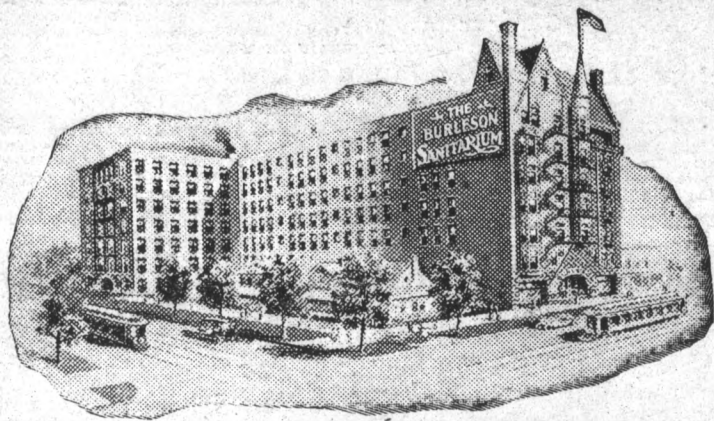
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Grange.

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

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.

Overseer—C. H. Bramble, Tecumseh.

Lecturer—Dora H. Stockman, Lansing.

Secretary—Jennie Buell, Ann Arbor.

Treasurer—Frank Coward, Bronson.

Executive Committee.—Jas. Helme, Adrian; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor.

RENEWED INTEREST IN GRANGE WORK.

It is most encouraging to note the new and growing interest in Grange work generally. Our own county of Oceana is in line with this general forward movement. Granges are increasing in membership, more interest is shown in the meetings, and altogether, the outlook is very satisfactory. I was talking with State Master Ketcham a few days ago and in his travels over the state he has noted like conditions.

If we look for the reason for these things we may perhaps find it in the growing interest in many questions pertaining to country life matters.

The farm labor situation, questions of production costs, the necessity of producing more food in the future than we have in the past, and that, with the odds against us and many other conditions growing out of the war make it necessary for farmers to get closer together. There was never a time in the history of the Grange when it was so important that it should do real constructive work. I am not going to name nor discuss the things that should be done. Space will not permit it. Moreover, it is not necessary because any Grange that will meet can easily discover its work today. The important things are to meet and then to do the duties that lie closest by. Not all of the Granges are yet revived; some counties have not as yet been inoculated with this bacteria of revival.

The duty of every Pomona Grange is to locate the weak Granges in the county and then plan to help put them on their feet. This matter should receive attention at the next Pomona meeting if it is soon to occur. Otherwise the executive committee of the Pomona should hold a special session and arrange in conjunction with the new county deputy for the revival of these Granges. If it is necessary to do so the deputy state master should be called in to help.

This work of Grange revival should go on. We should be very much in earnest about it. These are days in which we simply must try to better conditions in the open country. The Grange is the strongest, the most stable, and the most efficient farmers' organization in the country and we should use it as a powerful means toward rural betterment.

W. F. TAYLOR.

NEW AND REORGANIZED GRANGES.

The following is the number of Granges organized and reorganized from January 1, 1918, to March 31, 1918, both inclusive, as follows:

Organized.

California 1; Colorado 4; Idaho 1; Indiana 8; Iowa 1; Kansas 9; Kentucky 5; Maryland 1; Massachusetts 1; Michigan 6; Missouri 1; New York 3; North Dakota 2; Ohio 10; Oklahoma 9; Oregon 3; Pennsylvania 6; Washington 17; Wisconsin 1; Wyoming 2; total 91.

Reorganized.

Kansas 1; Maine 1; Michigan 1; Nebraska 2; Pennsylvania 1; Wisconsin 2; total 8.

Farmers' Clubs

Associational Motto:

"The skilled hand with cultured mind is the farmer's most valuable asset."

Associational Sentiment:

"The Farmer. He garners from the soil the primal wealth of nations."

CLUB DISCUSSIONS.

Hold Liberty Loan Meeting.—The Northeastern St. Clair County Farmers' Club met Wednesday, April 3, at the home of Albert Rutledge in Burtchville township. The dinner, served promptly at noon, was fully up to the standard of Club dinners, and yet gave evidence that the housewives were following the rules of the Food Administration in regard to conservation on certain foods. The program for the afternoon was opened with a song by the Club, followed with invocation by Rev. Guess, of Ruby. Minutes of the previous meeting were read by the secretary, Fern O'Connor. Harlan Davis, superintendent of the Port Huron city schools, met with the Club and gave a most inspiring talk regarding the Third Liberty Loan. Many farmers in the vicinity are sending their sons and daughters to the Port Huron High School, and this seemed a happy time for a get-acquainted-meeting as well as to promote loans for Uncle Sam. Mr. Davis said in part: "Our army across the sea is responsible for just forty per cent of the work of winning the war. Sixty per cent rests with us at home. Under the selective draft system, our government says to a certain group of men, 'You come across to fight our battles,' and it also says with equal authority to those of us at home, 'You raise all the crops you can, conserve all the food you can, and all your money beyond a living wage, loan to me in order that the armies over there may be fed and supplied with munitions of war.'"

Mr. David Canham was also present and spoke briefly of the need of "going over the top" in our Third Liberty Loan. In a few minutes subscriptions were taken from Burtchville township alone to the amount allotted to the township. Miss Guess and Mr. Lorry delighted the Club with a charming vocal duet. Miss Waldron, Home Demonstration Agent for St. Clair County, gave a brief talk upon the need of conserving certain foods, especially wheat, and arrangements were made with the women in the community for several demonstrations along these lines in the near future. Miss Guess pleased everyone with a humorous recitation. Shirley and Arthur Barrett then captivated the audience by singing Harry Lauder's "In the Gloaming," and responded to the hearty applause with an encore.

County Agent C. L. Brody discussed topics of immediate interest to the farmer, such as seed corn, spring wheat, treatment for smut, etc. He also talked at some length upon the greater cooperation that may be effected between the county agricultural agent and the farmer through the working of committees composed of men and women in the community who are particularly interested in some phases of agricultural life. The Club received this plan with enthusiasm, and the president appointed a committee of several to meet with the county agent in the near future and perfect plans for a program of work in this neighborhood. Mr. Nye, with his popular band, was present and they rendered several lively selections during the afternoon and also responded with a number of encores. Much of the success of the meeting was due to the efficiency and versatility of the president, James Reid. A gathering of 175 people is a house full for the average home, yet the chairman met every difficulty promptly and the program proceeded without confusion and to the pleasure of everyone present. This meeting will go down in the history of Farmers' Clubs as one of the most enthusiastic and inspiring gatherings ever held in St. Clair county. Such meetings speak well for the progress of our rural life and certainly boost the work for the downfall of Kaiserism. The Club meets in May at the home of Mr. and Mrs. McCullom.

A rank growth of weeds becomes an asset when plowed under before they make seed.

Veterinary.

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

Rheumatism.—I have a cow that freshened last spring, was all right until her calf was sold, then she showed lameness in fore quarters which later on seemed to shift to her hind parts. Now most of the trouble seems to be in back or her hind legs. W. R., Romulus, Mich.—Doubtless your cow is rheumatic. Give her 30 grs. of potassium iodide and 60 grs. of sodium salicylate at a dose in feed three times a day. She should be kept in a warm, dry place and not turned out during cold, damp weather or allowed to lie on cold frozen ground. A change in feed would doubtless help her.

Indigestion.—I have a ewe that has not done well lately; lost her lamb some six weeks ago, at which time she did not appear to be in any pain, but I would like to know what had better be done for her. J. M. K., Carleton, Mich.—Give your sheep five drops of fluid extract nux vomica, ten drops of Fowler's solution of arsenic and a teaspoonful of tincture cinchona at a dose in a quarter of a pint of water as a drench three times a day. She should be well fed and her bowels kept fairly active. Perhaps she suffered from infectious abortion.

Infected Udder.—I have a cow due to come fresh in about a month; two weeks ago she commenced giving thick stringy milk. What can I give her that will cure this ailment? F. C. F., Utica, Mich.—Milk her once a day and dry her at once. Give her a teaspoonful of nitrate of potash in feed or drinking water twice daily for a week or ten days.

Cows that Are Shy Breeders.—I have nine cows and have bred each of them from three to five times, but none of them appear to be with calf. I have two young bulls, one eleven months old and the other fifteen months, and would like to know what to do that will add to their chances of getting with calf. I have noticed commercial remedies advertised in stock papers for this ailment, but would like to have your opinion. S. C. S., Whittemore, Mich.—You must first of all understand that barrenness in cows is usually the result of contagious abortion in the herd. And wherever this disease exists a certain percentage of the cows will become barren or are sure to be shy breeders. The writer knows of no certain remedy. Try dissolving 2 ozs. of bicarbonate of soda in three pints of clean boiled water and wash out vagina of cow with a fountain syringe two or three hours before she is served. This will frequently add to the cow's chances of getting with calf. Doubtless each commercial remedy for this ailment possesses a certain degree of merit and are well worth a trial. If your cows come in heat regularly and you persist in breeding them, doubtless nearly all of them will get with calf sooner or later.

Indigestion—Worms—Lung Worms.—I have a horse whose hair is dry, coat rough, has a ravenous appetite, and drinks large quantities of water. We are sure that he is troubled with worms and have been giving him sulphate of iron, also several kinds of commercial worm remedies. He seems lazy and lifeless. Is only seven years old, has not been worked much during the winter and has been fairly well fed. I also have six young sows about five months old which I have wintered in close quarters, fed them on middlings, ground corn and oats. In spite of my trying to be careful not to overfeed them, they become too fat; began to wheeze and cough, and now two of them are poor, have little strength and don't care to eat much. Neighbors tell me that they perhaps have lung worms, while others tell me they have the thumps. B. C. G., Levering, Mich.—Mix together one part ground nux vomica, one part powdered sulphate iron, one part salt, one part fenugreek and four parts ground gentian. Give him a tablespoonful at a dose in feed three times a day until he is well. Now, regarding your sow, I do not believe they have lung worms. If your pigs suffer from lung worms, medical treatment will prove of little value; however, inhalation of tar, or turpentine fumes are sometimes used, but the general use of such lines of treatment is usually impractical. The best and most practical method of treating the lung worm diseases is good care, nourishing food and hygienic surroundings. Clean and thoroughly disinfect their pen and give each pig a quarter of a teaspoonful of cooking soda, half a teaspoonful of tincture gentian and a teaspoonful of tincture of cinchona at a dose twice a day.

FIRST ANNUAL SALE OF Michigan Ayrshires

27 head of Registered Ayrshires, including
White Marmaduke 18882
Grand Champion at Michigan State Fair 1916
at Flint, Michigan
Wednesday, May 8th, 1918
at 12.30 o'clock P. M.

All animals tuberculin tested and guaranteed.

Write for Catalogue

Michigan School for the Deaf
W. L. HOFFMAN, Steward

DISPERSION SALE of REGISTERED HOLSTEINS

on Monday, April 22, 1918, at 10 o'clock A. M.

60 head will be sold to the highest bidder, including 25 cows and 10 heifers bred to freshen in June. Among them are granddaughters of King of the Pontiacs, King Segis Pontiac, Johanna Hengerveld Lad, Pontiac Appalo and Judge Hengerveld DeKol. Three are Granddaughters of Pontiac de Nijlander. Sale at farm one mile west of Hendries corners, on Pontiac car line and two miles west of Royal Oak. Write for catalog. Will meet cars.

B. V. Kelly & S. H. Wood,
in the box.

J. H. McClure, Prop.,
Royal Oak, Mich.

CATTLE HOMESTEAD FARMS

A Federation of Interests

Holsteins

A herd of 50 Holsteins headed by the bull, King Zerna Alcartra Pontiac, son of King Segis Pontiac Alcartra the \$50,000 Holstein Bull and full brother to Mable Segis Korndyke; 40.32 lbs. of butter in 7 days at four years old.

This herd is of the very highest class of Holsteins and are the kind that the practical farmer should have who wants stock that is sure to pay out.

The following family is offered as a foundation for a high class practical herd: Dam, Tatty Topsy Dawn, 4 yrs. old, bred Nov. 7, 1917, to bull with 29 lb. dam; 2nd daughter 1 yr. old and full sister of 1st daughter; 3rd daughter, born April 13. Let us send you photographs and full description of this family.

Heifer calves, bred heifers and cows. Please tell what you want and let us describe and send photograph of the individual such as we think you would like.

Young Bull, sired by King Zerna Alcartra Pontiac; Grandson King Segis Pontiac Alcartra, the \$50,000 bull. Dam is Genesee Wonder, direct descendant on both sides from De Kol 2nd Butter Boy 3rd.

This young bull was born Jan. 30, 1918; is 95 per cent white, a straight, upright animal. We will send you description and photograph. Other young and older bulls of high class.

A fine Holstein herd; animals of all ages to select from. Please let us hear from you.

HOMESTEAD FARMS, Bloomingdale, Mich.

8th Annual Sale 8th 80 Holstein-Friesian Cattle 80

To Be Held

April 25, 1918, at Howell, Mich.

by
The Howell Consignment Sale Co.

These Cattle are a high class of stock nearly all are from one to four years old, bred in the most noted families individually fine, and bred to bulls of the 30 lb. kind. Catalogue ready.

Mark B. Curdy, Sec'y.
Col. Perry, Auctioneer.

For Sale 4 Bulls with high yearly record backing. All from son of the great cow Maplecrest Pontiac Application. Butter 7 days 35.10, butter one year 1944.30; her sister Bantone Belle DeKol with 152.32 lbs. butter. Born Feb. 1918, 1/2 white dam has 26.40 7 days at 4 yrs. Her dam 24.66 at 4 yrs. her dam 23.24. Born March 1918, 1/2 white dam has 21.40 3 yr. old record just made and is full sister to cow above. Both above cows are from son of Pontiac Denijlander with 35.49 butter record and three records above 30 lbs. Born Feb. 1918, 1/2 white dam has Jr. 3 yr. record of 18.88 7 days and 37.35 14 days just made. Born Aug. 1917, dark in color, fine growth, just bull and from same dam as first cow above.

PRICES RIGHT. Write J. P. OLCOTT, Perry, Michigan

"Top-Notch" HOLSTEINS

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

McPherson Farms Co., Howell, Mich.

A COW TESTER WRITES

"I have tested 272 cow months. Of this 110 Holsteins, 47 Jerseys, 57 Shorthorns, 35 Herefords, 7 Red Polls, 13 Angus and 3 mixed. Have had 1 Jersey 1 Red Poll and 2 Herefords exceed 30 lbs. fat in 30 days. 30 Holsteins have made from 30 to 62 lbs. fat each in 30 days."

Pure Bred HOLSTEINS

are the most profitable cows

Many purebred Holstein cows yield from 15 to 30 lbs. of fat a week. You can make money with these cows. Write for free information.



No obligation—we have nothing we want to sell you.

The Holstein-Friesian Association of America, Box 164, Brattleboro, Vt.

5 HOLSTEIN BULLS

ready for service, on account of selling farm and entire herd will sell these choice bulls from world record families at 1/2 actual value. Don't wait come see them.

LONG BEACH FARM,
AUGUSTA, MICH.

The Traverse Herd Great Values In Bulls

from A. R. O. Cows with records up to 30 lbs. Let us know your wants. We will send extended pedigrees and prices.

TRAVERSE CITY STATE HOSPITAL,
Traverse City, Michigan.

Stonyhurst Stock Farm

Bull born April 10th 1917. Dam a 13 lb. Junior 2 yr. dam of Maplecrest Korndyke Hengerveld whose dam and granddam both have yearly records of over 120 lbs. butter. Sire is King Ona whose dam has yearly record of 1345 lbs. and her dam a yearly record at 11 years of over 1100 lbs. Bull is 1/2 white and as straight as a string. Priced cheap for immediate sale. Other good ones from \$75 up.

F. A. BARNETT & SONS, Rochester, Mich.

Holstein bull, nearly ready for service, large straight deep-bodied, handsomely marked 1/2 white. His six nearest dams have A. R. O. records that average butter 7 days 24.13 milk 534 lbs. W. B. Reader, Howell, Mich.

The Pontiac Herd

"Where the Champions come from"

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

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

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

Registered Holstein bull calf, born Sept. 1917, dam daughter of 24 lb. cow, write for pedigree and price. F. O. B. your station. R. 3, St. Johns, Mich.

Holstein calves, 25 heifers, & 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$25 each, crated for shipment anywhere. Buy only the best. EDGEWOOD FARMS, Whitewater, Wis.

Parkside Holstein bulls, 8 and 16 mo. Both sired by noted bull. 37 relatives are 30 lb. cows. Priced to sell. J. E. TIRRELL & SON, Charlotte, Mich.

HEREFORDS

10 bull calves for sale, Perfection Fairfax and Prince Donald breeding.

ALLEN BROS.,
PAW PAW, MICH.

Herefords Bob Fairfax 494027 at head all ages either polled or horned. 14 bulls for sale. EARL O. MCCARTY, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.

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

BROOKWATER FARM

2 Bulls
Ready for Service

Sired by better bred bulls and out of high testing dams.

The Producing Kind
with Jersey type and capacity. Prices reasonable. Also a few red girls (Durocs) and boars.

Brookwater Farm,
J. Bruce Henderson, Mgr.
Ann Arbor, Mich.
R. 7.

REGISTER OF MERIT JERSEYS

Choice Reg. Jersey Bull Calves. 2 bulls 3 mos. old from dams that are doing better than 40 lbs. monthly grandsons of Majesty's Western King Price \$50 reg. & transferred. FRED A. BRENNAN, Capac, Mich.

Maple Lane R. of M. Jersey herd. For sale bulls, bull calves and heifer calves sired by a grand-son of the greatest Jersey bull in the world, Pogi 30th of Hood Farm. IRVIN FOX, R. 3, Allegan, Mich.

To reduce herd of registered Jerseys we offer for sale a carload of cows & heifers. Herd free from Abortion & Tuberculosis. H. C. & A. H. DONALDSON, Fenton, Mich.

JERSEY bull and bull calves for sale from R. of M. cows, also heifers and cows of all ages. C. B. WEHNER, R. 6, Allegan, Mich.

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

Jerseys for sale Ready for service bulls St. Lambert, Raleigh, Majesty, breeding. WATERMAN & WATERMAN Meadowland Farm, Ann Arbor, Mich.

Illie Farmstead Jersey Cattle. Several heifers bred to freshen next fall. Also a few heifer and bull calves of choice breeding. Colon O. Lillie, Coopersville, Mich.

For Sale A fine, dark, solid color Jersey bull 16 mos. old. Double grandson of Royal Majesty and out of R. of M. cow. C. O. DEAKE, Ypsilanti, Mich.

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

BIDWELL SHORTHORNS

For Beef and Milk.

Registered bulls, cows and heifers—Good Scotch and Scotch-Topped for sale. In prime condition. Modern sanitary equipment. Farm 10 minutes from N. Y. O. depot, 1 hour from Toledo, Ohio. Automobile meets all trains. Write

BIDWELL STOCK FARM,
Box B, Tecumseh, Mich.

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

Richland Farm Shorthorns.

IMP. Lorne in Service. Grand Champion Bull of Mich. Special offer on 14 head of Shorthorns. Cows with calves at foot, heifers two years old and heifers one year old. Also a number of bull calves. We invite correspondence and inspection.

C. H. PRESCOTT & SONS,
Farms at Prescott, Mich. Office at Tawas, City, Mich.

Francisco Farm Shorthorns
We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them. Mt. Pleasant, Mich.

Fair Lawns Shorthorns
Yearling bulls by Canada's best sires: Missie Augusta 60578 and Imp. Newton Frier 528120. LAURENCE P. OTTO, Charlotte, Mich.

Shorthorns. Registered heifers & cows heavy or females; farmers prices; milking strain; few young. HOBBITON FARMS, Hart, Mich.

Additional Stock Ads. on Page 543

Markets.

WHEAT.

April 16, 1918.

There is no change in the cash market situation of this cereal. The grain is scarce and receipts from producing sections are arriving only in small volume. Millers find it difficult to secure enough to keep mills going. Rains have benefited the new crop somewhat although in a few states dry weather is having a bad effect and the acreage will be considerably reduced through abandonments. More rain is needed. A year ago the local quotation for No. 2 red wheat was \$2.60 per bushel. The present prices are:

No. 2 red.....	\$2.17
No. 2 mixed.....	2.15
No. 2 white.....	2.15

CORN.

While the condition of this grain as it reaches the markets continues to be poor, Chicago dealers report a considerable improvement in the quality of the receipts at that point. At Detroit, however, there is very little change. Present prices rule about five cents below the quotations of a week ago. There is a general belief that the acreage of corn that will be planted this year in the northern states particularly, is going to be much less than normally put in, on account of the scarcity of seed corn. This prospect is a bullish element in the trading and acts to prevent the big slump in prices that dealers have been looking and hoping for. A year ago corn brought \$1.49 for the No. 3 grade on the Detroit market. Present local prices are:

No. 3 corn.....	\$1.65
No. 3 yellow.....	1.75
No. 4 yellow.....	1.60
No. 5 yellow.....	1.35
No. 6 yellow.....	1.20

Chicago prices are lower as follows:

No. 3 yellow.....	\$1.55@1.65
No. 4 yellow.....	1.45@1.50

OATS.

While values have been fluctuating in this market, and the present range is lower than those quoted in our last issue, the market at the opening on Monday indicated renewed strength, due partly to the liberal purchase by the government. Prospects are that exporters will take more of the oats offered as soon as it is possible to send them to Europe. Primary receipts have been heavy and a liberal increase in the visible supply is reported. A year ago standard oats sold on the local market at 77c per bushel. The latest prices for the Detroit market are:

Standard oats.....	93
No. 3 white.....	92½
No. 4 white.....	91½

RYE.

There has not been a great deal of activity in rye circles the past fortnight, and values show a substantial decline since a week ago. Present prices for cash No. 2 are as follows:

Detroit.....	\$2.60
Chicago.....	2.60

BEANS.

Farmers are apparently too busy just now to give a great deal of attention to marketing, and the offerings of beans at country elevators have been limited. The demand appears also to be easy with prices holding at last week's figures. On the Detroit market cash beans are steady at \$11.50 per cwt. At Greenville the basis is \$10.25 for hand-picked. The Chicago trade is fair, with the feeling easy. Present prices at that point are:

Hand-picked, fancy....	\$12@13
Red kidney, fancy.....	14

FEEDS.

No satisfactory quotations for bran can be secured. The maximum price to consumers as fixed by the food administration is \$31.10 per ton in carload lots, or \$31.60 in less than carload lots, but these prices are not being adhered to by many Michigan dealers.

Other feeds in 100-lb. sacks, jobbing lots:

Cracked corn.....	\$70.00
Coarse corn meal.....	70.00
Chopped Feed.....	56.00

HAY.

Market is easy and quiet. Prices in carlots at Detroit are:

No. 1 timothy.....	\$24.50@25
Standard timothy ..	23.50@24
Light mixed.....	23.50@24
No. 2 timothy.....	22.50@23

Pittsburgh.—Our correspondent advises us that the market is deluged with hay of all grades. Market declining fast.

No. 1 timothy.....	\$27.50@28
No. 2 timothy.....	23.00@24
No. 1 light mixed...	23.00@24

POTATOES.

The very latest telegraphic market reports show the majority of the big markets east of the Mississippi river to be in a steady to stronger position. In Detroit, for instance, a local scarcity of tubers in dealers' hands has forced a substantial advance in quotations. Cleveland, Buffalo, Cincinnati and Pittsburgh are also higher. There were twelve cars on track at Detroit Tuesday morning. Here are the jobbing prices paid at various important eastern markets for U. S. Grade No. 1 per cwt., and the condition of trade:

Detroit (higher)...	\$1.30@1.50
Cleveland (firm)...	1.40@1.45
Buffalo (higher)....	1.50
New York (steady)	1.75@1.85
Wash. (steady).....	1.60@1.65
Pittsburgh (stronger)	1.40@1.45
Cincinnati (higher)	1.30@1.35

At Michigan points farmers are receiving for U. S. Grade No. 1 in bulk 60@85c at sidetracks, the latter price being quoted at Greenville. New York state farmers are getting \$1.15@1.25 for the same grade; Wisconsin producers 80@90c, while Maine growers are getting \$1.21 for field run at starch factory. (Above quotations are furnished by U. S. Department of Agriculture, Bureau of Markets, Detroit Office).

BUTTER.

Reports from various markets show a stronger butter trade than obtained a week ago. At Detroit the price is up nearly two cents, with the general quotation for extra creamery firsts at 41½c, and a few reports of premiums of two cents above these figures are made. Fresh creamery firsts 40½c. The Chicago trade is active and higher, with creamery prices ranging from 34@41½c per pound. While receipts have been fairly liberal, the demand is unusually good and rapidly absorbs all arrivals. Creamery butter is also higher on the New York market, with extras quoted there at 45½@46c; firsts at 42½@44½c, according to the latest wires.

CHEESE.

There was a decline in the cheese trade a short time ago, but dealers allowed their stocks to run low and are now obliged to come into the market for supplies, which has given the trade a firmer tone at slightly lower prices this week. The output of new cheese is still small. In Chicago Daisies and Young Americas are selling at 22@22½c, with old makes commanding a premium above these prices. There is a slight advance at Detroit with Michigan Flats selling in jobbing lots around 22@22½c, and some riper offerings commanding as high as 24c. When peddled to groceries 24c can be secured for recent made.

EGGS.

While the prices quoted by the Detroit board for fresh eggs is 33½@34c, some of the dealers are paying a premium above these quotations. The Chicago market is firm, due largely to the heavy demand, although receipts the past week were smaller than the previous week, and considerably less than for the corresponding week for 1917. Fresh firsts are bringing 32½@33½c in Chicago, and ordinary firsts 31½@32½c. The New York market is firm, with fresh gathered extras at 38½c per dozen.

POULTRY.

Live poultry is in demand and the market is firm. Embargo on selling hens and pullets has been amended to end April 19, so farmers can sell these classes of poultry on and after April 20. Detroit prices are:

Spring chickens.....	34@35
Old roosters.....	24
Ducks.....	34@35
Fat geese.....	30

Chicago.—In live poultry the market shows practically no change. Supply is sufficient to meet demands.

Fowls.....	23@31
Ducks.....	31
Geese (general run)...	18@20

WOOL.

On April 5 all stocks of wool were offered to the government at the prices then obtaining. This offer followed the telegram of Acting Quartermaster-General Goethels in commandingeer all looms in the country capable of turning out goods for the army. With the government's action preceded by heavy buying for civilian purposes the wool trade is naturally in a very strong position and farmers should, as a result, obtain record prices for their offerings this year. No local transactions have been reported on this year's clip.

GRAND RAPIDS

Shipments of new potatoes from the south are increasing, Florida reporting movement of 35 cars April 13, as compared with 48 cars of old potatoes out

of Michigan on that date. The car shortage prevents loading in Michigan and farmers are also busy with spring work so that potato movement is light. While Greenville reports potatoes at 80@85c, the price in general for wagon-side track loading at country points is 60@75c. The United States Bureau of Markets has been assured by the director of railroads that no list of non-essential farm products will be issued and it is believed that adequate transportation for farm products will be provided this year. Fresh eggs continue at 30@31c. White beans, hand-picked basis, are now quoted at \$10@10.50 per cwt.

DETROIT CITY MARKET

Considering the season, there was a fairly good market Tuesday morning, with prices well maintained as follows: Cabbage \$1.75 per bushel; carrots 75@90c; potatoes \$1; parsnips \$1; beets 90c; turnips 85c; Baldwin apples \$1.75@2.25; Steele Reds \$2.35; eggs 39@40c per dozen.

BUFFALO.

April 15, 1918.

Cattle.

Receipts 125 cars; market 25@50c higher; prime steers \$14.50@15.75; fair to good \$13.75@14.50; plain \$12.75@13.25; coarse and common \$11.75@12.50; choice heavy butcher steers \$14.50@15; fair to good \$13.50@14; best handy steers \$14.50@15; fair to good \$13@13.50; light and common \$12@12.50; yearlings \$13@15.50; best heavy heifers \$13@13.25; good butcher heifers \$12.50@13; fair butchering heifers \$11@12; common \$8.50@12; fancy fat cows \$12.50@13; best heavy fat cows \$11@11.50; good butchering cows \$10@10.50; medium to fair \$9@9.50; cutters \$8@8.25; canners \$6.50@7.25; fancy bulls \$11.50@12; good butcher bulls \$10.50@11.50; best feeding steers \$10.50@11; common to fair \$9@9.75; stockers \$7.50@10; milkers and springers \$7@140.

Hogs.

Receipts 80 cars; market 10@15c lower; heavy \$18.25@18.40; yorkers \$18.50@18.60; pigs and lights \$18.25@18.40.

Sheep and Lambs.

Receipts 30 cars; market 15@25c lower; wool lambs \$21.50@21.75; clipped \$18.35@18.50; yearlings \$15.50@16.50; wethers \$14.50@15; ewes \$12@13. Calves \$7@16.50.

CHICAGO.

April 15, 1918.

Our special representative at the Chicago Stock Yards reports:

Cattle.

Receipts.

Monday, this week.....	24,000
Total last week.....	69,817
Total preceding week...	58,891
Total week, year ago...	54,197

Cattle advanced week before last on an average 75c and last week 50@90c more, the week's rise averaging 75c. The above advance was in steers while cows and heifers sold last week 25@40c higher, as did bulls, stockers and feeders. The bulk of the steers sold at \$13.50@15.85, with common to prime steers going at \$10.50@16.40. This week opens with a lively general demand at generally well maintained prices and choice beefs of heavy weight booming, sales taking place at \$16.50@16.75. Medium steers go at \$14.25 and over, good lots at \$15 and upward and choice beefs at \$16 and over. Week before last top steers brought \$15.50 and a year ago \$13.45. Cows and heifers bring \$7.25@13, stockers and feeders \$8.75@13 and calves \$7.75@14.75, receipts of 23,433 calves last week having caused a slump in values, \$17 having been paid a week earlier.

Hogs.

Receipts.

Monday, this week.....	65,000
Total last week.....	208,538
Total previous week...	161,355
Total week, year ago...	116,516

Hogs were in active local and shipping demand last week, and despite the great increase in the receipts, prices closed Saturday a little higher than a week earlier, top for prime light hogs being \$18. Today's large receipts brought about a drop of about 20 cents, hogs going at \$16.30@17.80, with rumors of an early sale at \$17.90. Pigs are selling at \$13@17, feeders going highest. Prime heavy hogs bring \$17.60. A year ago hogs brought \$15.25@16.35. Hogs now arriving average 242 pounds.

Sheep and Lambs.

Monday this week.....	12,000
Total last week.....	57,366
Total preceding week...	43,170
Total week, year ago...	73,935

Lambs advanced for woolled flocks 25@40c last week, shorn lots being 10@15c higher. Woolled lambs sold at \$17.50@21.10, scoring new high rec-

ords, and today saw \$21.25 paid for prime Colorado lambs. Prime shorn ewe lambs sold to breeders at \$20.50@21 and shearing lambs at \$18.50@21. Very few sheep or yearlings are offered, and shorn wethers sell at \$13.50@15.80 and prime woolled yearlings at \$19.60.

HAPPENINGS OF THE WEEK.

(Continued from page 414).

against the seizure of Dutch ships in United States ports.

Sunday, April 14.

Allied troops continue to hold their key position on the western front.—German drive over Lys plain and near Merville are checked, while a desperate battle is in progress on a line running southwest of Messines to south of Bailleul.—Observation shows that there are about 4,000,000 men about equally divided between the Allies and the central powers engaged in the titanic struggle.—Detroit having over-subscribed to the Liberty Loan on Saturday, now sets a goal at \$60,000,000, which is about seventy-five per cent above its quota.—President Wilson approves plan to experiment with concrete ships.—United States Senator Stone from Missouri dies, following a stroke of paralysis.

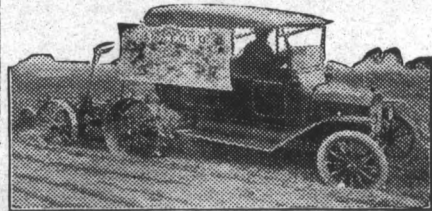
Monday, April 15.

Haig line is holding in every sector. Terrific fighting is in progress for Bailleul, which commands the gates to Dunkirk and Calais, while the British line continues firm.—French stop German raids between Montdidier and Noyon.—Pershing's men use bayonets and defeat Germans on the Meuse near St. Mihiel.—United States government announces one-fifth of the third Liberty Loan is already sold.

Tuesday, April 16.

The momentum of the German attack against the northern end of the western front appears to be checked by the British. Eleven assaults against the latter's trenches at Merville were completely repulsed in the most bitterly fought engagements of the war. Neuve Eglise is the only position that fell to the Germans the past two days. The government at Washington hints a new military program which includes the calling of 3,000,000 men to the colors during the present year.

Read What a Michigan Farmer Writes about the Can-a-Ford Tractor Attachment



The Baldwin Manufacturing Co.,
Sparta, Michigan.

Att. Mr. W. H. Hall:

Gentlemen:—

You asked me tell you what I think of the CAN-A-FORD attachment.

I purchased this attachment last September, and since that time I have plowed, dragged, sowed, used it in pulling stumps, breaking sod, and other kinds of farm work. It has proven entirely satisfactory, and I believe if the owner of one of these attachments will put it in use and keep it in use it will prove to him to be a labor and money saving piece of machinery.

With my attachment connected to a Ford car, I pulled two thirteen-inch bottoms.

Yours very truly,

(Signed) N. H. Christenson,
Ravenna, Michigan
R. F. D. 4.

Every farmer in Michigan can use a CAN-A-FORD attachment. It converts your Ford car into a Tractor.

Write for circular and prices.

Baldwin Manufacturing Co.,
Sparta, Michigan

WAIT! Hold up your Separator Order

Get Galloway's Low Direct Price

Do this first. Don't think of investing in a separator until you learn what a big separator value you can get direct from Galloway.

Sanitary Separator

It's the sensation of all separators. Sensational in construction, clean skimming, sanitation, easy cleaning and durability. The features of the Galloway Sanitary Separator combine the new and best advantages of all high grade separators. Buy a Galloway and you get the best of all embodied in one perfect machine. Four big sizes at four low prices. Every size guaranteed to skim to rated capacity. Sold on 180 milking test in your own dairy before you decide to keep it.

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Galloway also makes Engines, Spreaders, Tractors and sells them direct, too, at lowest factory prices. Don't order any implement until you get Galloway's factory price.

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Get this money-saving buying guide in your hands before you buy. It points the way to immense savings that will amount to hundreds of dollars on your season's supplies. Close shipping points save you freight. Write today for best prices.

Wm. Galloway Co., Box 183
Waterloo, Iowa

THIS IS THE LAST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
April 18, 1918.
Cattle.

Receipts 1529. Market 50c higher than last week.

The cattle market was fully 50c higher than at the high time a week ago and was the most active and highest ever seen at these yards on all kinds; \$12@13 was a common price for butcher grades and several bunches sold as high as \$14.50. This is more than fancy Christmas stock brought around the holidays. There seems to be no prospects of lower prices in sight and the consumer can make up his mind that he will have to come across with a good bunch of cash to get any kind of beef for some time to come.

Best heavy steers \$14@14.50; best handy weight butcher steers \$12.50@13; mixed steers and heifers \$11.50@12; handy light butchers \$10.50@11; light butchers \$9@10; best cows \$9.50@11.50; butcher cows \$8.50@9; cutters \$8@8.50; canners \$7@7.50; best heavy bulls \$10@11; bologna bulls \$8.50@9.50; milkers and springers \$6@12.50.

Bishop B. & H. sold Golden 2 cows av 980 at \$9; to Bresnahan 13 cutters av 915 at \$7.50; to Sullivan P. Co. 4 canners av 832 at \$7, 3 do av 900 at \$7, 2 cows av 975 at \$8.50, 1 bull wgh 1000 at \$9.50, 1 do wgh 1000 at \$8.50, 4 steers av 887 at \$11.50, 1 do wgh 1160 at \$11, 14 do av 1073 at \$12.60, 12 do av 750 at \$8.50, 6 do av 836 at \$11.50, 5 do av 872 at \$11.25; to Newton P. Co. 6 steers av 1283 at \$14.50, 2 do av 1190 at \$12.50, 20 do av 970 at \$11.50, 8 do av 1046 at \$13.50, 4 cows av 990 at \$9, 1 do wgh 1140 at \$7.50, 13 steers av 1141 at \$14; to Sullivan P. Co. 3 cows av 990 at \$9, 1 steer wgh 1080 at \$11; to Parker, W. & Co. 19 do av 730 at \$10; to Ratner 1 do wgh 1170 at \$11.25; to Shipiro 1 bull wgh 1800 at \$13; to Heyman 1 do wgh 1480 at \$9; to Bresnahan 7 cows av 1053 at \$9.

Veal Calves.

Receipts 990. Market steady. Best \$15.50@16; others \$8@13.

Veal calves were a trifle draggy and generally 50c lower; the Jews bought a few fancy at \$16, but bulk of sales were at \$15.50 and under. The quality was generally common.

Sheep and Lambs.

Receipts 708. Market strong. Best lambs \$17.25; fair do \$15@15.50; light to common lambs \$12@14; fair to good sheep \$11@12; culls and common \$7@9.

Sheep and lambs were scarce and very few wool grades were in the receipts. Best clipped lambs brought \$17.25@17.50 and sheep around \$12. No spring lambs have appeared as yet and few are expected.

Bishop, B. & H. sold Thompson 45 lambs av 55 at \$16; to Mich. B. Co. 19 do av 65 at \$16, 9 do av 60 at \$16, 15 do av 80 at \$16.50, 27 wool lambs av 78 at \$20; to Hammond, S. & Co. 50 lambs av 100 at \$15.50; to Sullivan P. Co. 85 do av 105 at \$15.50; to Mich. B. Co. 107 do av 65 at \$16.75, 12 do av 55 at \$15; to Parker, W. & Co. 27 do av 67 at \$15.50, 33 do av 65 at \$17.25, 24 wool lambs av 75 at \$20, 5 do av 90 at \$20; to Mich. B. Co. 5 lambs av 120 at \$14, 16 do av 105 at \$17.25, 32 do av 70 at \$17.25, 5 do av 78 at \$17.50, 27 do av 50 at \$14, 94 do av 60 at \$16.50, 15 wool lambs av 60 at \$19.

Hogs.

Receipts 4010. Market 15@25c higher. Mixed \$17.75@18; pigs \$17.75.

The hog trade opened Monday with the best selling at \$17.60 and few were sold on Tuesday; they were 15c higher, \$17.75 being the top and on Wednesday they took another shoot upwards of 15@20c, the best selling at \$17.90@18 and pigs at \$17.50@17.75. A large number of the good pigs coming here now are shipped out for feeding purposes, but before they can go to the farm for this purpose they have to undergo a vaccination process which costs the buyer \$1 a head. The general quality of the receipts this week was good, and the railroad service is much more satisfactory than usual.

SHEEP

KOPE-KON FARMS.

Coldwater, Mich.

Hampshires & Shropshires.

It's a wise man who orders his ram for August delivery now.

About July 1 we will offer for sale choice ARMSTRONG BROS., R. 2, Fowlerville, Mich.

WELLMAN'S QUALITEED FEEDS

DO YOUR BIT!

Sell Your Grains!

America and the Allies Need Them!

The prices you can get for Oats and Barley will let you buy

Qualiteed Feeds

for the same money and get twenty-five per cent more feeding value with each hundred pounds.

Every Hundred Pounds of Wheat, Oats and Barley You Release Brings Victory Closer!

Feeders' Favorite Dairy Feed

Is the Best Substitute for Bran or Standard Middlings

See Your Dealer Today

Or Write Us and Give Us His Name.

E. L. WELLMAN Grand Rapids, Michigan

EGGS

Production well started, general quality, fine. For a few months it will be hard to get any premium. Will do best we can, although may have to stop paying premiums until loss of season sets in. Keep shipments coming.

AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

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

Wanted to buy about 60 gal. of milk per day. Will contract for the year.
Roy's Creamery, 1018 Wabash Ave., Detroit, Mich.

CATTLE

Shorthorns. Three scotch bulls ready for service. Price reasonable.
W. B. McQUILLAN, R. 7, Howell, Mich.

Shorthorns. Maxwalton Monarch 2nd, 387322 half brother to 5 Grand Champions in service.
JOHN SCHMIDT, R. 5, Reed City, Mich.

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

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

1867-1918 Maple Ridge Herd of Shorthorns Yearling heifers and bull calves for sale.
J. E. TANSWELL, Mason, Mich.

Shorthorns. Four very desirable heifers 17 to 21 months old, and bull's mo. All roans. Price \$1000.
S. E. BOOTH, Morrice, Mich.

SHORTHORN: 1 bull 6 months old, 1 heifer 1 mos. Sold Registered in buyer's name, \$100 if taken soon.
H. W. MANN, Danville, Mich.

SHORTHORN—20 bulls 2 to 18 mos., mostly from Dorothy's Sultan 469045, a grandson of Whitehall Sultan, also a few cows. O. Carlson, LeRoy, Mich.

Dairybred Shorthorns of best Bates Strains, young stock of both sexes for sale.
J. B. HUMMEL, Mason, Mich.

Scotch Shorthorns for sale, 5 bulls ready for service.
John Lassiter's Sons, Orion, Mich., R. F. D.

Shorthorns—Sired by a grandson of Cyrus Clay. No stock for sale.
COLLAR BROS., R. 2, Conklin, Mich.

FOR Sale: One registered Shorthorn Durham bull (Cecil Buckingham) Roan, 3 years old. Too good for the block. Must be sold at once. Make me an offer. Address Wm. TEACHOUT, Clio, Mich.

Red Polls One yearling bull. Also bull calves by Lincoln Lad 2nd.
For prices and description, write Wells Parish & Sons, R. 3, West Olive, Mich.

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

For Sale one Pole Durham bull twelve months old. Address months old, one Shorthorn six months old, one Shorthorn six months old, one Shorthorn six months old.
C. A. WELSH, Springport, Mich.

Red Polled Cattle

best of breeding, Yorkshire pigs. E. S. Carr, Homer, Mich.

Cattle For Sale

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

Guernseys—For sale, animals of both sexes from A.R. cows. Prices reasonable. Geo. N. Crawford, Holton, Mich.

HOGS

DUROCS Orion Chief Perfection No. 68945, and Jennings Pilot Wonder No. 73373. Two outstanding boars of big type and excellent quality. All selected large type smooth sows. Thrifty, smooth, large boned spring gilts from these hard boars and choice sows at very reasonable prices. The Jennings Farms, Bailey, Mich.

GREY TOWER FARM

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

Durocs & Berkshires

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

DUROCS

You want more size, feeding qualities. Fall boars ready for service. A few sows bred for June farrowing.

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

DUROC JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

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

Durocs Can spare two or three bred daughters of Joe Orion 2nd and the \$5000 boar.

Choice Duroc Jersey Gilts For Sale. OAREY U. EDMONDS, Hastings, Mich.

Duroc Jerseys Why don't you order a pig and raise an extra good boar or gilts for yourself. E. E. CALKINS, Ann Arbor, Mich.

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

Duroc Jerseys: Sept. boar pigs for sale at farmers' prices, write for description and prices. J. D. CRANE & SON, Plainwell, Mich.

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

Big Type O. I. C's.

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

O. I. C. & Chester White Swine.

Strictly Big Type with quality. Bred sows & gilts are all sold, two boars fit for service good ones. Also have a few fall pigs left, either sex. I will ship O. O. D. NEWMAN'S STOCK FARM, R. 1, Marlette, 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 4 months old. Write for my plan—More Money from Hogs. G. S. BENJAMIN, R. F. D. 10, Portland, Michigan

BRED GILTS and SERVICEABLE BOARS

J. CARL JEWETT, Mason, Mich.

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

O. I. C.'s big type, one yearling sow and gilts to farrow in Apr. and May. Aug. and Sept. boar G. P. ANDREWS, Danville, Michigan.

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

O. I. C.'s. Last spring gilts bred for next spring farrow also last fall pigs either sex and not akin. Good growthy stock 1/2 mile west of Depot, Citizens phone 124. Otto B. Schulze, Nashville, Mich.

O. I. C. For sale fall gilts and a few gilts F. C. BURGESS, Mason, Mich. R. F. D.

FOR SALE

Smooth Jumbo a grandson of Peter Monw's old boar Smooth Jumbo a 600 lb. yearling. A top notcher fit to head any herd. Also some nice bred gilts at \$50. If you get one you will have to hurry. J. C. BUTLER, Portland, Michigan.

Large Type P. C. no public sale this year; 50 sows and 100 gilts all queens of the breed go at private treaty. W. J. HAGELSHAW, Augusta, Mich.

Big Type P. C. Big boned fellows from Iowa's greatest herds. Special prices on spring boars. E. J. MATHEWSON, Burr Oak, Mich.

Big Type P. C. bred for March & April farrow sired by Peter's Jumbo & Grand Superba and 2 or 3 yearling sows at bargain prices. C. K. Garnant, Eaton Rapids, Mich.

Large Type P. C.

Bred gilts and boars all sold nothing to offer at present. W. E. LIVINGSTON, Parma, Mich.

LEONARD'S Bred sows all sold, fall pigs, orders booked for spring pigs at weaning time. Shipped C. O. D. E. R. LEONARD, St. Louis, Mich.

P. C. Sows For Sale. Bred for April farrow. A. A. WOOD & SON, Saline, Mich.

Large Type P. C. fall gilts, size 800 lb. yearling to be bred to 1000 lb. 2 year old for July & Aug. 2 extra good fall boars. WM. J. CLARKE, R. 7, Mason, Mich.

BIG TYPE POLAND CHINAS. Booking orders for spring pigs. G. W. HOLTON, R. 11, Kalamazoo, Mich.

Large Strain, P. C. A few gilts left bred for June farrow and 2 nice boars ready for service at farmers' prices. H. O. SWARTZ, Shookcraft, Mich.

BIG TYPE Poland Chinas: Bred sows all sold. Have a few fall pigs. Prices right. L. W. BARNES & SON, Byron, Mich.

Hampshire Boars at a bargain. Booking orders for Spring pigs. JOHN W. SNYDER, R. 4, St. Johns, Mich.

HORSES

REGISTERED PERCHERON Mares and Stallions priced to sell. Inspection invited. L. C. HUNT, EATON RAPIDS, MICH.

PERCHERON DISPERSAL

The entire herd of the late A. A. Palmer will be closed out; 25 pure bred percheron mares \$200 to \$400 except two; also young stallions PALMER BROS., Belding Mich.

For Sale Black Reg. Percheron Stallion 4 yrs. weight 1900. Sound and a show horse, a bargain if taken soon. BIRD & MUNSON, St. John, Mich.

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

Percheron Stallions and mares of reasonable prices; inspection invited. F. L. KING & SON, Charlotte, Mich.

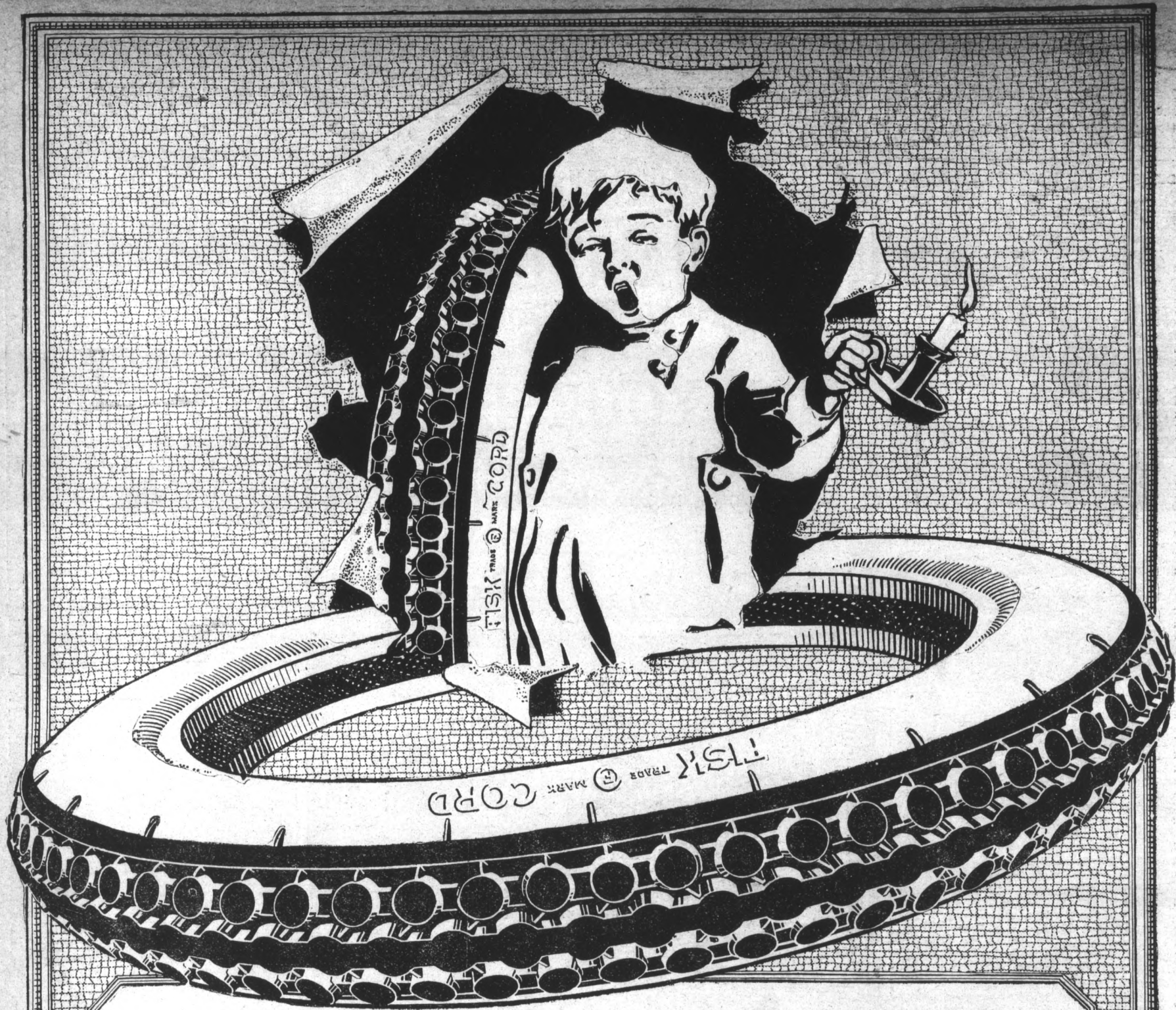
Percherons Only mares and fillies. Stallions all sold. J. M. HICKS & SONS, R. 2, Williamston, Mich.

FOR SALE Three Registered Percheron stallions and two Percheron mares cheap to close out. E. J. ALDRICH, Tekonsha, Mich.

For Sale Pure blood eleven months old Blue Grey stud colt, eligible, will weigh over 1000 lbs.; sire weighs 2300. Will make a good horse when developed. Write, or telephone No. 172. Wm. L. CHRISTLEY, Three Oaks Farm, Constantine, Mich.

Two Large young Jennets cheap, and some Shetland Ponies and several good fox hounds. W. E. LEOKY, Holmesville, Ohio

Belgian Stallions. Priced to sell. State Licensed. Send for photos. CHAS. M. SEELEY, Three Rivers, Mich.



Made also with Ribbed Tread

A Great, Big, Handsome Tire, WITH A BIG-BUTTON, NON-SKID TREAD that gives you the greatest possible amount of safety against side-slipping. It is built with an intimate knowledge of what you demand in a tire, combining luxury, resiliency, comfort, speed, good looks, endurance, safety and economy to the highest degree.

The reputation of an old and long-experienced manufacturing institution for tires of the highest quality and soundest value is more than maintained by the unsurpassed record of the

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