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Shall We Inventory Our Waste Land?

Everybody is Interested One Way or Another in the Public Policy to be Followed Regarding Michigan's Millions of Acres of Idle Land.

IF your next-door neighbor breath- lessly broke the news to you that a gold mine was hidden somewhere about your farm and was waiting only to be tapped, what would you do first? Or rather, what would you do third? For the chances are that in the first place you would tell him he was a con- founded liar, and in the second, once he had convinced you, you would split the air with a few old-time Indian war whoops.

In case you were sort o' enthusias- tic, probably you would rush out into that stone patch and seize upon the first pebble that glittered for a gold nugget. You might at once grab a pick and shovel and start out for pay dirt. Maybe you would crank the "tin Elizabeth" and hurry to your family

lawyer to get the papers drawn up for the new million-dollar company that was to rake in the fortune. Or would you scratch your head and say to your- self, "Well, I guess I can get along. Got enough to keep me going till along next August. Reckon I'd better not get excited about that gold mine yet." Well, nobody has discovered any great quantity of the yellow dust on Michigan soil. There isn't any rush of "forty-niners" to set up claims here- abouts, nor is there likely to be. But all the landowners in the Wolverine State collectively possess something which bears the earmarks of a mine— whether of gold or of quartz.

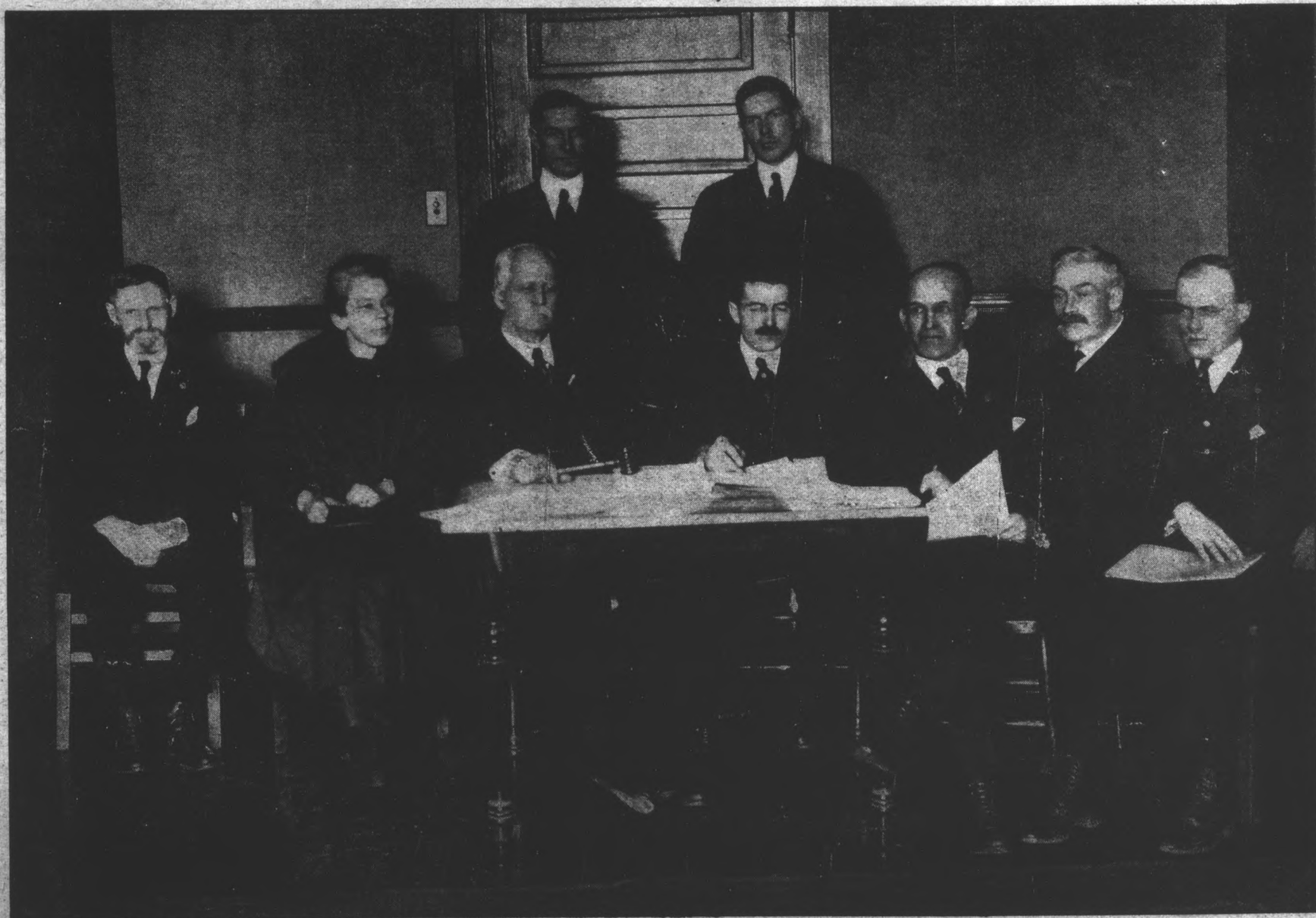
This seeming mine is in the form of millions upon millions of acres of un- developed land. Out of the 36,000,000

acres total area, 18,000,000 is not put to any sort of agricultural use, and of the 18,000,000 only 12,000,000 are with- in fenced farms. The situation in which Mr. Michigan Citizen has found himself with respect to this land has been very much like that of the farm- er with the gold mine.

In the first place, after the forests had been cut off, he refused to believe there was further hope of making use of these vast tracts. If he did enter- tain such thoughts, they were soon thrust out of his mind by the peculiar conditions existing. Before any tim- ber land at all could be used it had to be cleared. At the best, tilling Michi- gan soil profitably was exceedingly dif- ficult, because when the resources of the west were opened, the Michigan

farmer found himself left hopelessly behind in the competitive race to sell food products cheaply. The great tide of immigration from northern Europe swept in the direction of the west. In addition many Michigan youths were lured by the opportunities in these rich new regions and left their native state, thereby decreasing the man power and delaying still further the day when this state should take its place in the ranks of the agricultural leaders.

Even when the tide reached the Pa- cific, and good land had become suffi- ciently scarce to permit development here, this development extended only to that land which could be cleared rather easily and was unquestionably tillable. Mr. Citizen still did not con- (Continued on page 508).



The Executive Committee of Michigan State Farm Bureau in Session. Sitting, from left to right, are: Robert Blenhuber, Marquette; Mrs. Cora Ketcham, Hastings; President Roland Morrill, Benton Harbor; Secretary Charles A. Bingham, Birmingham; A. E. Illenden, Adrian; James Nicol, South Haven; Ashley M. Berridge, Greenville. Standing, from left to right, are, R. G. Potts, Washington, and A. J. Rogers, Beulah.

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DETROIT, MARCH 27, 1920

CURRENT COMMENT

Improve Unprofitable Acres

WEEDING out a dairy herd and getting rid of the inferior cows is a comparatively easy task compared with weeding out the unprofitable acres of land and getting them in shape to return a profit. If the cow fails to produce profitably, her owner can sell her for something and put a better one in her place, but not so with the acre of land. The best he can possibly do is to set about the problem of building it up to a level where it will become an asset rather than a liability. In many instances the loafing acre not only consumes the profits from the more productive acre, but is a constant source of loss in preventing the practicing of suitable crop rotations on the adjoining acres. An acre of low, wet land in the middle of a large field may so delay cultural work or prevent the use of harvesting machinery to such an extent that one would be justified in expending double the value of the acre of land in getting it properly drained so as to facilitate the working of the entire field. Likewise low, wet places in the pastures produce weeds and grasses of little feeding value, besides affording mud holes and stagnant ponds for the stock, more particularly dairy cows, to walk through and get their flanks, udders and bellies plastered with foul mud and slime. Such places should be drained and put to producing grasses even though the original cost may exceed the value of the land itself. Spots occupied by trees, stumps and heaps of stone frequently reduce the average yields per acre, delay cultural work in the spring and cause delays and breakage in farm implements.

Crooked fences and too wide head lands afford ideal places for weeds to grow and go to seed, besides the few bushels of grain and few hundred pounds of hay they should produce helps to keep down the average crop of the entire field. Such little losses in acreage on a large farm count a whole lot in the aggregate in figuring the profits at the end of the year. The idle acre not only represents a definite source of loss in the shape of taxes, interest and other charges, but it adds to the overhead charges which must be borne by the adjoining acres. The investment required to get these places to producing something of value not only returns interest on the land itself but on the larger production of the entire field.

In planning the fields for efficiency, have every long lane serve as a roadway, make the headlands as narrow as

possible and keep them seeded down as much of the time as practicable to prevent the growth of foul weeds to be distributed over the fields. Such a replanning may call for the changing of fences and the laying of tiles and covering open ditches, but the few days' work may change the fields so that one can adopt more profitable crop growing systems and put the entire area of tillable land and pastures on a better and more paying basis. The improvement of fields along such lines must precede the modern tractor the same as the building of better roads has encouraged the use of automobiles. The use of farm tractors, heavier plows and cultivators to do our farm work means that we must drain the low, wet places, remove stumps and stones, clean up the brush heaps, square up our fields and get them in shape to be worked with greater efficiency.

Lime, drainage and the use of commercial fertilizers are the agents that must be employed in bringing these loafing acres under a remunerative system of cultivation. The supply of farm manure seldom gets to the far ends of the farm, hence with corrective remedies and fertilizers in connection with clovers and grasses, rather than growing grain and cultivated crops on these fields, they can be brought back to a fair degree of fertility at a very moderate cost. The advantage once gained may be maintained easily by a proper course of treatment. On many farms, especially dairy farms, the area of productive land has gradually contracted to such an extent that not more than one-third of the farm is capable of producing profitable crops. Such a narrow system of farming is not adapted to conditions of today and must be expanded by the purchase of more plant food and better methods of soil management. Much of this land can be restored to full productivity, but it will take time, labor, lime, fertilizers, legumes and rotation to turn the trick, but it will pay just as sure as day follows night. Idle acres are a source of loss that our agriculture cannot stand if it is to pay a fair profit.

Meadows and Pastures

RECENT circumstances have combined to make the outlook for meadows and pastures less favorable than might be desired under present conditions. The patriotic spur for increased food production during the war caused the abandonment of established crop rotations in many cases, and the breaking up of old pastures and meadows as a means of increasing crop production. Much of this land was in grain and reseeded to clover and grass last year, but the seeding failed in many localities in our own state due to an extremely and long-continued mid-summer drought; leaving many farms abnormally short of needed meadows and pastures this year.

A further consequence of these same conditions is the scarcity and high price of clover seed of good quality, making the re-establishment of the proper balance of these crops a more than ordinarily difficult and expensive proposition. As a result crop rotations will be further disarranged this year, as old meadows which would normally be broken up will of necessity be saved.

The old theory that there is no great loss without some small gain will, however, be borne out in the result. Alfalfa will be more generally sown and under more favorable conditions than ever before. Where the land is properly prepared, and limed where needed, this will prove a profitable move for many farmers. Sweet clover will also be more generally sown and clover seeding will be more carefully done than under normal conditions, to the benefit of many farms. Judicious

crop rotations will soon be generally restored, and better maintained because of this experience, and in the meantime an increased acreage of other forage crops will supply present needs.

Prophetic of the Future.

YOU know they are not making any more good land now! This was the reply of a business farmer located in the best corn-producing area of Illinois, when he was asked some five years ago if corn-belt lands had not about reached their limit in price. While his statement was not wholly true, as those who are acquainted with the agricultural possibilities of unimproved areas in Michigan well know, his answer was expressive of his optimism as to the future of corn-belt lands and indirectly of agriculture as a business.

And his optimism, which was but typical of the views of a large class of farmers similarly situated has been justified. Indeed, the price boom in corn-belt land which started in Iowa last spring and spread across Illinois and through Indiana, overlapping into Ohio, and to some extent into our own state, probably went far beyond the wildest expectations of these optimists. During this boom period good farms in some of the sections named doubled in value almost over night as measured by repeat sales. In localities where the farm land boom reached its height, the profits made in the turnover of farm lands, eclipsed the most fevered gold stampede or oil developments, and overshadowed even the abnormal advances in real estate values in the most rapidly developing cities. True, this boom was speculative to a very considerable extent, but with the passing of the speculative fever, values remained high, denoting an abiding faith in the future value of these good farm lands on the part of their owners.

This remarkable boom in farm land values has been a source of wonder and comment on the part of economists. The rapid advance from an average of \$200 to \$250 per acre for the lands in a farming community to double that average figure and to as high as \$700 per acre at the peak, has caused not a little speculation as to the effect of this boom on the agriculture of the section affected and of the country at large. As always, there are many pessimists who deplore this sharp upward trend of good farm lands on the ground that they cannot be made to pay good interest on the investment.

But farmers generally will hardly be pessimistic regarding a tendency toward a more rapid increase in the value of good farm land. A large part of the wealth of agricultural communities is the direct result of a normal increase in the value of good farm land, an increase which one class of theorists are pleased to call an unearned increment, but which is really the legitimate result of the work of the pioneers in building up a prosperous community. The speeding up of this upward tendency is in line with general conditions at the present time, and is, we believe, prophetic of the future so far as the prosperity of agriculture is concerned. Good farm land is a safe investment and a valuable asset. A well improved farm should bring a price which will be a commensurate reward for its development, and it should return to its industrious owner a fair income on his investment. There is every evidence that the business farmers of America have faith that this will be the case in the future, and that they are going about the solution of the problem of realizing on that faith in a business-like way. This, too, is prophetic of future prosperity for the industry in a still broader and more significant sense.

News of the Week

Tuesday, March 16.

AN agreement between the German rebels and President Ebert's administration is reported from Berlin.—The Turkish government appoints delegates to a peace conference with the allies.—Troops are sent to hold oil lands located near the boundary between Texas and Oklahoma while the question of state jurisdiction is being settled.—Prince Feisal is expected to be crowned king of Syria on March 20.—The United States Senate adopts the new reservation substituted for the one adopted last November modifying article ten of the peace treaty.

Wednesday, March 17.

CHANCELLOR KAPP, head of the government at Berlin resigns in favor of President Ebert.—Fully 150,000 Detroiters will pay taxes on their incomes this year.—Premier Drury of Ontario will ask for a referendum on the wet and dry question.—Interstate Commerce Commission is informed that the rail men will give the new transportation act a fair trial.—Between 25,000 and 30,000 men who automatically became citizens by virtue of their military service may be denied the opportunity of voting in the presidential primaries April 5, through neglect in having their papers confirmed by Michigan courts.—Approximately \$10,000,000 in gold is shipped from this country to South American countries.

Thursday, March 18.

SOVIET forces appear to be making a supreme effort to gain a foothold in Poland and Germany.—The exodus of Mexican laborers to the United States is almost depleting the population of many towns.—Five persons are dead and much property is destroyed in a two-day blizzard which swept over North Dakota.—The Holland government fixes the residence of former emperor William in the province of Utrecht.—The Pacific and Atlantic fleets will meet at Panama next January for joint manoeuvres.—Trouble between the Estonian and Lettish governments is assuming a very grave character.

Friday, March 19.

TWO hundred and thirty persons are killed during fighting in Berlin.—A bill protecting American manufacturers from trade-mark piracy passes both houses and is awaiting the President's signature.—The senate adopts reservation to the peace treaty declaring for self-determination for Ireland.—The Department of Agriculture quarantines Massachusetts, New Hampshire, New York and Pennsylvania to prevent further distribution of the corn borer.—Wind storms do great damage to crops in Colorado and Kansas.—Jury gets case in the Newberry senatorial trial at Grand Rapids.

Saturday, March 20.

THE United States Senate rejects the treaty of peace with Germany by a vote of 49-35 and orders the return of the documents to the President.—An appeal comes to this country from Vienna for food supplies, shipments from Germany having been held up by the German revolt.—American exports and imports take a big drop during February.—The political situation in Berlin where the general strike continues, is still critical.—An international conference on the exchange question will be held in Brussels in May.—Truman H. Newberry and sixteen others are found guilty of violating the federal and state corrupt practices acts, by a jury in the United States District Court at Grand Rapids.

Sunday, March 21.

RADICALS are reported to be in control of Essen and several other cities and towns of Westphalia, Germany.—Coal operators charged with conspiracy to limit production are arrested at Indianapolis.—Canada's officers and enlisted men will hereafter receive \$1.70 a day, or an increase of sixty cents.—Detroit letter carriers and postal employees are asking for higher wages.—British manufacturers are losing no time in renewing trade relations with German houses.—Funds for reimbursing owners of cattle found tubercular by the State Live Stock Commission will be depleted by April 1, because of the larger number of animals tested the past few months.

Monday, March 22.

A SOVIET government is reported to have been established in Duisburg, Germany.—British forces are in full command of Constantinople, the gateway to the Orient.—President Ebert and his cabinet return to Berlin.—Soviet Russia prepares for a military campaign against Finland.

The Outlook for Small Grain Crops

Every Grower of Small Grains Should Understand the Present Economic Situation Regarding these Crops---by Sanders Sosland

WITH farms of Michigan and elsewhere in the United States holding much more wheat than normal for this period of the year, and the time approaching for the expiration of the government guarantee on the bread grain, producers are eagerly weighing the various factors contributing to price fluctuations in an effort to gauge the future trend of values for the bread grain. The probable trend of prices is vital to the producer who has yet to market a considerable portion of his crop and to farmers preparing to seed spring wheat and other spring crops.

As farmers will not enjoy a government price on their wheat after May 31, many in the spring wheat belt are showing a tendency to reduce their acreage devoted to the grain. This attitude corresponds to that of the producers in the winter wheat belt last fall, who made a sharp reduction in their wheat seeding operations. However, the fact that the winter wheat belt already has made a big reduction in its area in wheat ought to encourage the spring wheat growers of the northwest to seed more extensively. Still another influence is the fact that the condition of the winter wheat crop is rather low and may result in a relatively lighter harvest than the percentage of decrease in the acreage might indicate. Besides, the position of world wheat markets warrants a more optimistic feeling among producers than a majority are now manifesting. Unless the spring wheat territory seeds a comparatively large area to wheat, prices for the bread cereal may follow a course directly opposite to that anticipated by the bear element in markets. Pre-war prices for wheat on the next crop are a possibility, but hardly a probability.

Considerable light as to the most desirable course to pursue in spring planting operations and as to the general wheat market outlook may be gained from a survey of the winter wheat situation. The report of the Department of Agriculture on fall seeding of wheat in the United States indicated an area of 38,770,000 acres, compared with a total of 50,499,000 acres in the preceding year. The present area devoted to winter wheat, only 76.8 per cent of the record acreage of a year ago, is the smallest since the opening of the world war in 1914. The farmers of the winter wheat belt of the United States in the fall of 1913

seeded 37,128,000 acres to the bread grain; in 1914, 42,881,000 acres; in 1915, 39,203,000 acres; in 1916, 40,534,000 acres, and in 1917, 42,301,000 acres. Michigan has seeded 922,000 acres to winter wheat, compared with 960,000 acres in the fall of 1918, and 941,000 acres in 1917.

The plant entered the winter season in a generally poor condition, the government having estimated the condition on December 1, 1919, at 85.2 per cent, compared with an average condition of 98.6 per cent on December 1 of the preceding year, and a ten-year average of 89.5 per cent. In the past few months the crop has doubtless deteriorated further, owing to serious lack of moisture in many important producing states, particularly in the southwest, high winds, and intermittent thawing and freezing weather. There is some volunteer wheat in the southwest, too, particularly in Kansas, and it is doubtful if this grain will hold up the remainder of the growing season. Some market interests are inclined to consider lightly the reduced area of winter wheat, calling attention to the fact that the largest production of winter wheat in history was harvested from an area of 37,128,000 acres less 1,120,000 acres abandoned. But in that year the condition of the plant at the opening of winter and in the spring was excellent and far above the average, while this year the condition is far below the average.

With a reduced area devoted to winter wheat, that territory will doubtless plant the smaller grains, corn, oats, barley and other cereals, on a far more extensive scale than in recent years. Land values have advanced, and to realize a profit in farming operations, the soil must be utilized to the fullest extent, therefore the belief that the small grains will enjoy a sharp increase in acreage. The producers of Michigan and other northwestern states, in preparing their plans for spring seeding activity, should keep in mind the fact that competition of the winter wheat territory will be more keen so far as the smaller grains are concerned, while the present outlook indicates far less than the usual competition on the bread cereal.



Despite the fact that the government guaranteed minimum on wheat, \$2.26 a bushel for No. 1 hard winter or northern spring, basis Chicago, expires on May 31, which tends to increase nervousness in marketing channels, sentiment in the wheat trade inclines to the bullish side. While a top of \$3.50 a bushel for dark northern spring wheat already has been reached on the Minneapolis market and \$3.10 for dark hard winter in Kansas City, with Chicago, St. Louis and other terminals on a similar basis, the belief is held by many that values will soar even above these levels before another crop of the bread grain is available for markets. Prices for wheat at this writing are about fifty cents a bushel under the high point reached in the early part of January, though not many weeks ago the market showed an extreme setback from the record figures for 1919-20 crop wheat of as much as \$1.00 a bushel. Those who claim that higher prices will yet be witnessed place much emphasis upon the fact that the closing months of a crop year, particularly April and May, usually witness a higher range of wheat prices than the earlier months of the year. Why not again this year?

In connection with the probable trend of wheat values, it is significant to note that stocks of wheat on farms of the United States on March 1, according to the Department of Agriculture, amounted to 165,539,000 bushels, the largest total since March 1, 1916, or after the record production of wheat. The farm reserves a year ago amounted to 128,703,000 bushels; two years ago, 107,745,000 bushels; in 1917, 100,650,000 bushels; and in 1916, 244,448,000 bushels. Michigan holds 3,643,000 bushels, compared with only 1,411,000 bushels a year ago and 2,622,000 bushels two years ago. While the reserves of wheat on farms are comparatively large this year, much of the grain is of poor milling quality, more than a normal quantity being actually unfit for milling. The bulk of the surplus wheat is held in the winter wheat belt, and, as earlier in the crop year, millers of the northwest and the east will continue dependent to a large extent upon these holdings.

The stocks of wheat in all elevators and mills of the United States, according to grain corporation figures, aggregate 182,625,000 bushels, which, together with the total farm reserves, makes a total available breadstuffs supply in this country of only 348,164,000 bushels for domestic consumption and for export during the four months of the crop year from March 1. These figures indicate a disappearance of 592,823,000 bushels since July 1, 1919. The official figures on exports of wheat and wheat flour on the crop to March 1, show an equivalent of 138,142,000 bushels, leaving a total apparent domestic consumption thus far of 454,681,000 bushels. On the basis of domestic consumption the past eight months, our breadstuffs requirements the remainder of the crop year would be around 227,000,000 bushels, this reducing the available supply to approximately 120,000,000 bushels. It is safe to anticipate comparatively larger exports of wheat and flour from the United States the remainder of the crop year than in the past eight months. Europe is seriously in need of the American surplus, but she has not the facilities to pay for the breadstuffs. However, there has been slight improvement recently in European economic conditions, and this, together with the plans of the United States Grain Corporation to sell large quantities of flour to destitute European nations on a credit basis, indicates that the export movement of wheat and flour will increase. Therefore, it is probable that the present available supply of breadstuffs in domestic channels will be reduced to an extremely low point by the time the new crop wheat becomes available, considerably below a normal carry-over.

But figures often lie. Possibly what might now appear to be a small supply for carry-over as a protection against crop failures may materialize into a heavy surplus. Yet this appears improbable. So far as production in the Old World is concerned, conditions are not favorable for normal crops for some years. In this connection it is interesting to note that the British government has fixed a minimum of \$2.19 a bushel for home wheat of the 1920 harvest, and this will have a tendency to maintain the world wheat price basis at or possibly above the level. The future, therefore, appears promising for continued high wheat values.



Good Crops of Alfalfa and Sweet Clover Can be Produced on Sandy Land where Liming, Manuring and Inoculation are Practiced.

News of the Agricultural World

MINNESOTA POTATO GROWERS ORGANIZE.

FINAL organization of a central marketing exchange through which Minnesota potatoes may be sold cooperatively was perfected at Little Falls recently, when the Minnesota Potato Exchange became a reality.

Delegates representing seventy-two local cooperative potato associations, already organized or now organized, participated in the meeting. These delegates came from twenty-four counties. All of the principal potato producing sections of the state were represented, says *The Farmer*. The Minnesota Potato Exchange will be, to all purposes, a federation of local associations that are cooperative in principle.

It was organized under the new cooperative law with \$15,000 capital stock. It will begin to function as soon as twenty per cent (\$3,000) of the capital stock is paid in, or, in other words, as soon as thirty locals affiliate with the exchange by the purchase of one share of stock each at \$100 per share. This will be accomplished, it is hoped, within a few weeks, so that the exchange may begin its marketing operations some time this spring.

Thirty of the locals which sent delegates to the organization meeting shipped about one thousand cars of potatoes last fall, and have left about three hundred cars to ship this spring. Most of these locals are eligible to membership in the exchange and plan to affiliate. Early action by these locals will provide sufficient capital and sufficient potatoes for the exchange to begin business within a few weeks.

Interest in the meeting exceeded all expectations. When the growers in conference at Moorhead last November expressed a wish for such an organization as the exchange it was thought that thirty or forty communities could be expected to participate in an organization meeting. Instead seventy-four communities elected delegates, and seventy-two of these delegates attended the Little Falls meeting. All came instructed to approve the exchange, so the meeting was devoted almost entirely to consideration of the many details of organization.

The exchange is organized along plans very similar to those used by the Michigan Potato Growers' Exchange, the success of which served as the incentive for organization in Minnesota. The exchange membership will be made up of local organizations, and each local will elect a director to the exchange. These directors will compose the governing board of the exchange.

The exchange will serve as the selling agency for the locals. It will find the market and make the sales, and the locals will supply the potatoes. This plan of organization is also similar to that of the Twin Cities Milk Producers' Association, the marketing agency for the local milk producers' associations which furnish milk to the St. Paul and Minneapolis markets.

Tentative plans for organization had all been worked out before the meeting at Little Falls by the organization committee named at the Moorhead conference.

This committee had been instructed to draft the necessary articles of incorporation and by-laws. Their draft was approved, with few exceptions, by the delegates.

LIGHT IMPORTS SAVE POTASH INDUSTRY.

THE bill for control of importations of potash has been pending for many months before the House Ways and Means Committee. No action ever has been taken upon it, but the under-

standing has been that the bill has been buried because of the opposition of the American agricultural interests, which fear that they would be compelled to pay unduly high prices for potash needed as fertilizer.

If importation continues to be limited by natural causes, as at present, Representative Kincaid believes that within the period of two years the domestic potash industry may get on its feet so that it will be able to hold its own without any protective legislation.

"The status has been, and at present is, that potash being sold at a somewhat higher price, and that cotton raisers in the south and potato raisers in localities where potash is required are having to pay higher prices for the potash they consume than would have been the case had legislation been passed by the Sixty-fifth Congress securing to domestic producers the preference over foreign producers in the American market to the extent of the domestic production, as provided by the bill introduced by the gentleman from Michigan (Mr. Fordney), as chairman of the Ways-and-Means Committee, the bill embodying the license

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Every organization and institution in the state interested in the better marketing of wool joined in the call for the conference, which resulted in the formation of the new association.

Leading wool growers from all sections of the state are agreed that lack of efficient marketing machinery has checked the growth of the state's sheep industry. They predict that by marketing their clips collectively, as was done last year in Dane and Buffalo counties, as well as in Iowa, Illinois and several other states, they will build up a reputation and a better market for Wisconsin wools.

"Sheepmen of Wisconsin are determined to get more nearly the value of the wool," said the head of the state division of markets, at the conference. "If the farmer is careless with his product he will get a lower price, of course, but sheepmen of the state intend to present a better grade of wool on the market than they have heretofore. Through the proposed cooperative marketing of their product they expect to realize a price that will represent the actual worth of their wool."

"Collective marketing methods eliminate the purely speculative element, and the various go-betweens who take their tolls from the actual price of the product. Many speculators will undoubtedly urge that they will pay immediate spot cash for the full amount that shall be paid, but I believe that Wisconsin wool growers will realize the greater merits of the newly proposed plan."

W. F. Renk, of Sun Prairie, secretary of the State Sheep Breeders' Association, said:

"Early in the spring of 1919 too many of our local buyers planned to buy and did buy warm wools at from forty to forty-five cents a pound, but on account of the efforts of our associations were encouraged later to find the clips worth ten to fifteen cents a pound above first quotations."

STRAIGHT FROM THE SHOULDER.

THERE are five definite things that may be expected in time, to have an effect upon the world's production of food. In a recent statement Sherman J. Lowell, Master of the National Grange, enumerates them as follows:

1. A more direct and less expensive system of distribution.
2. Removal of all artificial restrictions upon the sale of farm products.
3. A lengthened industrial day, with honest service for wages paid.
4. Increased dividends on farm investment which will enable their owners to meet the wage scale of competing occupations.
5. Increasing social and educational privileges in rural communities.

BEAN ACREAGE DECREASES.

CALIFORNIA bean men report that plantings in the Sacramento Valley will be much lighter this year compared with former years. The bean growers were disheartened by the prices received for the 1919 crop, and the weather conditions this winter and spring have been anything but favorable. In the Sutter Basin, practically every acre of ground formerly used for beans has been planted to barley.

No crop produces a more satisfactory roughage for sheep than oats and Canada field pea hay. A sufficient area can be plowed in the spring and seeded with a mixture of equal parts of oats and Canada field peas. They should be mixed together and drilled in at the rate of three bushels per acre. Seeding can be done early in the spring.

OUR NEW SERIAL

The Valley of the Giants

A Romance of the Redwoods

By Peter B. Kyne

Author of "Webster-Man's Man"

THIS is the story of the big, wholesome men and women who hewed the pathway of civilization through the trackless depths of the Northern California redwood forests. It is a story of life and love in the open that is invigorating in its very freshness.

Three big men and a girl fight against heavy odds. The treacherous and crafty schemes of a Michigan lumber magnate to wrestle from the Cardigans, father and son, their "Valley of the Giants," endeared to them by many memories and which they had vowed never to cut, make a story unusual in every respect.

The totally unexpected part played by the heroine, a charming girl with a will of her own, in deciding the issues, comes not only as a surprise, but as a bewilderment as well.

The first installment will appear next week. Watch for it and should you have a hard-working neighbor whose life has become monotonous through devotion to exacting duties but whose spirits would be refreshed and lifted up through the reading of a good wholesome story, be the Good Samaritan by interesting him or her in the first chapters of this splendid romance.

plan," said Representative Kincaid. "If this license scheme had been granted, or American producers had been otherwise safeguarded, contracts could have been secured by fertilizer companies with our own producers for all potash produced in America at not exceeding \$2.50 per unit, and this would naturally have fixed the price of imported potash at as low a figure, and thus a great saving to our American consumers would have been secured."

"Nebraska and California potash producers, who earnestly appealed for government assistance in some form for the short period of two years, were given no encouragement whatever by congress, with the result that there was a total suspension of the production of potash in the United States, following the armistice for several months, and this condition would have continued to this time except for the failure of importations to be made from Germany to the extent that had been estimated—perhaps actually contracted for in America. But, perceiving that a domestic demand existed for a larger amount of potash than was coming from abroad, several of

depends upon the conditions which may exist and operate in Germany, including labor conditions there, railway transportation to the seas, thence ocean rates to America. If the importations of potash from Germany should continue to be limited, as up to the present time since the signing of the armistice, for two more years some of our leading producers feel confident that by a further development and improvement of the economies of their production in the interim. American manufacturers would then be able to compete successfully with the importers of German potash, and they are probably right about this, so long as the nefarious and ruinous practice of dumping should not be employed by the foreign monopoly.

WISCONSIN GROWERS' WOOL POOL.

THE organization of the Wisconsin division of the fleece wool states growers' association assures the sheep growers of that state that their superior clips will no longer lack a reputation upon wool markets of the country.



THE FARM FLOCK IN SPRING.

FARMERS who do not wish purebred poultry can greatly improve the average size and laying ability of their stock by grading up their scrub hens by crossing with purebred males. The hens two or three generations from mongrels often look like purebreds and have considerable vigor. The purebreds are the best and the next best thing is to grade up the mongrel flock and make an improvement every year in its utility value.

Keep up the fight against mites and lice in the spring and the summer troubles will be reduced. The commercial disinfectants diluted with water are cheaper than kerosene to protect the roosts from mites. Blue ointment is a quicker way to kill lice than dusting with insect powder. Keep down the pest population before warm weather helps to multiply them. This will mean more eggs and better chicks.

Strong shells are needed on both market eggs and eggs sold for hatching. The hens do not obtain enough shell-making material from their food to manufacture a large number of eggs. Thin shells mean a serious loss from breakage during transit and also when the eggs are placed under the setting hens. The hopper of oyster shells is the remedy and they are too cheap to be away from the flock at any season of the year.

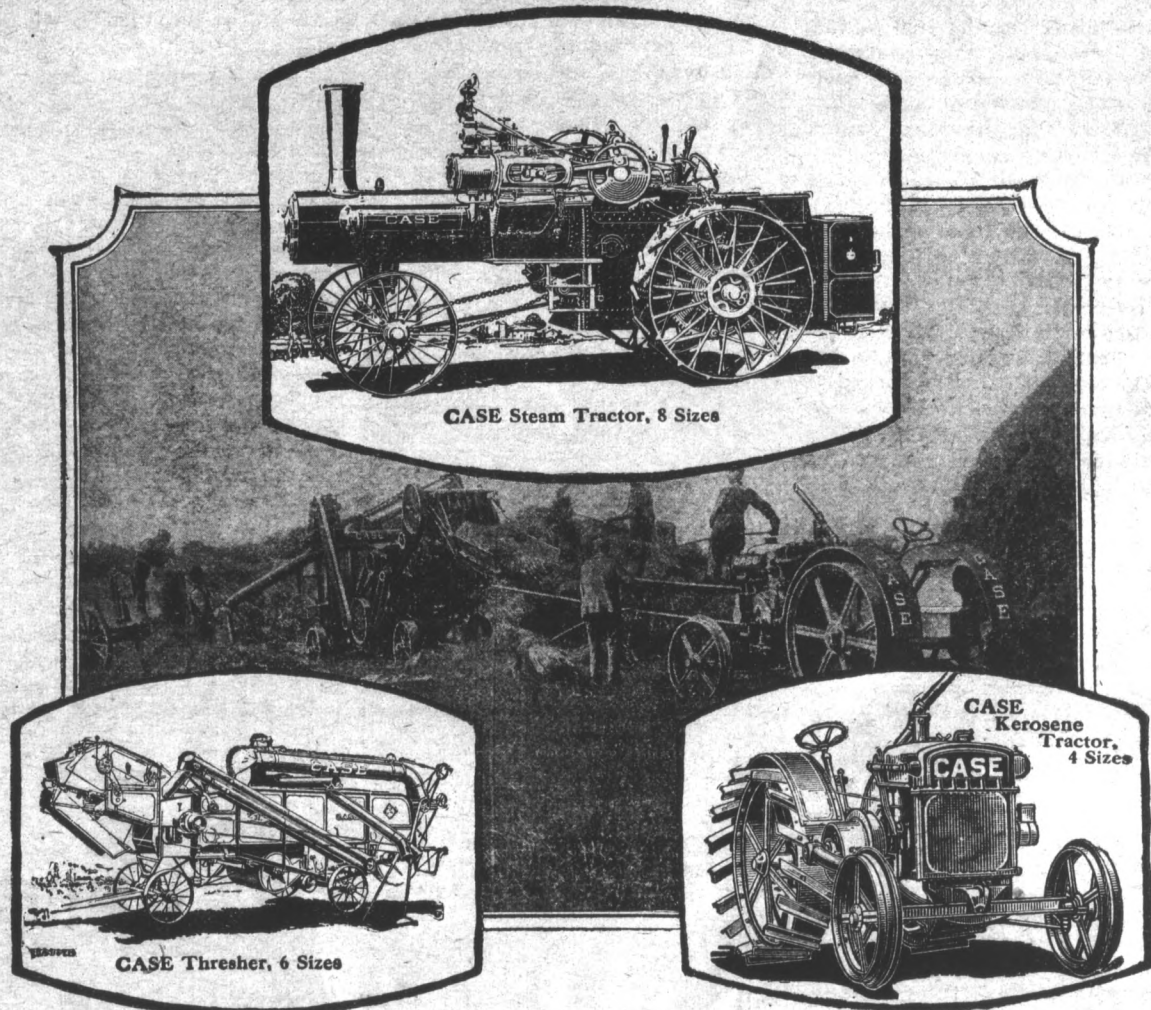
The April, May and June eggs have been found by experiment to keep better in waterglass than the eggs produced during the hottest summer months. The spring eggs are also the cheapest and that is the time that the cold storage buyers lay in their supply. Some producers can make more money on their spring eggs by looking for private customers who will purchase eggs in fifteen and twenty dozen lots. They should be worth more than the grocers can pay. The eggs sold for preserving should be clean, fresh laid stock. They will be better if infertile. If city customers expect to reduce the cost of living they must be willing to buy their food products in larger quantities and do their own storing. Waterglass gives the consumer a chance to compete with the storage houses and have good quality winter eggs at spring prices.

Test the eggs that are placed under hens and remove the infertile eggs and those showing a dead germ. The infertiles can be fed to the flock and the good eggs combined under fewer hens. Often spoiled eggs are allowed to remain under setting hens until the end of a hatch. If any of those eggs are broken during the last week it means an unpleasant job of cleaning for the poultryman.

Observation would lead a poultryman to believe that the best place to establish a poultry farm is near a growing farm on an interurban line. While the hens are laying eggs the city grows out to the farm. When the poultryman gets ready to retire he may find that the poultry farm is ready to be divided into lots and sold. Modesty has always prevented us from asking if the egg business is as profitable as selling lots. But it is only good business to locate a poultry farm in such a section when it is possible. Many farmers and poultrymen wish they had bought such a place ten or fifteen years ago.

Sometimes we think that the dust bath for hens is overworked as it causes the air to be constantly filled with dirt. This is unhealthful for the hens and the men who work around the houses. Why not have a portable dust bath and let the hens use it about

(Continued on page 518).



A Case Thresher— The Tractor's Faithful Working Mate

Many a tractor owner could materially increase his profits by the purchase of a Case Thresher, of suitable size.

Case Threshers are built to exactly meet the requirements of the farmer who threshes as part of his farming, or the thresherman who wants a rig of greater capacity and efficiency. There are six sizes, ranging from the 20x28, suitable for the large farm or a group of small farms, to the great 40x62 the climax of the thresher achievement. Case, Galvanized, Steel built, Grain Saving Threshers are made in the following sizes: 20x28, 22x36, 26x46, 32x54, 36x58 and 40x62.

All sizes of Case Threshers may be equipped with Case Self-Feeders, Wind Stackers and Grain Handlers. All will thresh, separate, clean and save all grains and seeds. And for each size of Case Thresher there is a Case Tractor as a dependable and durable source of power. Three sizes of Case Kerosene Tractors and eight sizes of Case Steam Tractors offer choice of requirements for all conditions and localities.

Send for booklets giving detailed information regarding Case Threshers Case Kerosene Tractors, Case Steam Tractors, Case Baling Presses, Case Silo Fillers, etc.

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Inside News from Washington

THERE are evidently two well defined sides to the Muscle Shoals air nitrate fixation proposition, which is now engaging the attention of congress and in which farmers all over the country are displaying much interest. Everyone who discusses the subject is of the opinion that more and cheaper nitrogeous fertilizers would be beneficial, not only to the farmers, but to the consumers, as it would have a tendency to increase the production of foodstuffs. But will the government development and operation of the Muscle Shoals plant give farmers cheaper nitrate? Will it free them from the Chilean nitrate monopoly? Will it supply the country's need for nitrates?

These are some of the questions the committee on war expenditures, of which Representative, W. J. Graham, of Illinois, is chairman, is asking.

Recently there was read into the Congressional Record a letter written by Frank I. Mann, of Illinois, in which he referred at length to the demands of the farmers for nitrogeous fertilizers and the urgent need for the government developing the Muscle Shoals plant to supply this demand. Representative Graham addressed a number of questions to Mr. Mann as to what he knew of the respective merits of the cyanamid process of fixing nitrogen as compared with other methods, the probability of the demand for nitrates being supplied from coke ovens, the cost of fixing nitrogen by the cyanamid process, and how long it will take to complete the hydro-electric power at Muscle Shoals.

Mr. Mann has come back again with a letter in which he strongly emphasizes the need of cheaper nitrogen, and more of it, to bring back to greater productivity the depleted soils of southern Illinois, Indiana and Ohio, and the states south of the Ohio river, but passes over Representative Graham's questions with the following reference:

"I do not feel competent at present to even offer to pass on the different methods by which the Muscle Shoals power may be used for fixing nitrogen for fertilizer use. My thought in writing was to call attention to the great importance of having cheap nitrogen for use in the production of food. If satisfactory arrangements can be made to use the Muscle Shoals plant for fixing nitrogen for use on the land in the production of crops, it seems to me it would be almost a crime to neglect doing it for the sake of humanity and civilization."

Representative Graham's committee has had considerable difficulty in getting testimony from witnesses giving concrete facts in regard to the Muscle Shoals project so far as they relate to agricultural fertilizer, nevertheless he authorizes me to say that the committee is now preparing its report on the Muscle Shoals matter and in connection with the report it will expect to state the facts as shown by the records bearing upon the future use of the plant. "The committee has taken a great deal of evidence on the probable expense and desirability of operation by the government of this plant and when we report we will give the facts that we have found in that respect. Whether we make definite recommendations we have not determined, but in any event we shall report sufficient facts so that congress may legislate on the matter if it desires to do so."

It has been shown at the hearings, that last year we produced in this country in coke ovens 500,000 tons of sulphate ammonium, of which 370,000 tons were used in this country and 130,000 tons were exported. In addition to the coke oven nitrogen, 350,000 tons

of Chilean nitrates were brought into this country, making a total of 720,000 tons of nitrates used here during the year. The total capacity of the Muscle Shoals plant is estimated at 85,000 tons a year. These figures indicate that an embargo on the exportation of sulphate ammonium from the coke ovens would have more effect in meeting the demand for nitrogeous fertilizers than the operation of the Muscle Shoals plant.

This is an important matter from an agricultural standpoint, one which deserves to be well understood by those who use commercial fertilizers, and for this reason I have attempted to dig into the facts and investigate the situation from both angles of the proposition.

They Protect Producers who Bargain Collectively.

It has been reported by parties who are no friends of the Capper-Hersman bill, that it gives labor a special privilege that it does not now enjoy. This is not true. The only clause in the bill having reference to labor is in Section 6, which is identical with the Clayton Amendment enacted several years ago, which reads as follows:

"That the labor of a human being is not a commodity or article of commerce. Nothing contained in the anti-trust laws shall be construed to forbid the existence and operation of labor, agricultural, vineyardists, dairy or horticultural organizations established for the purpose of mutual help, and that pay annually no greater dividends on stock or membership capital invested than the minimum legal rate of interest of the state where organized, or to forbid or restrain individual members of such organizations from lawfully carrying out the legislative objects thereof, nor shall such organization or the members thereof be held or construed to be illegal combinations or conspiracies in restraint of trade or commerce under the anti-trust laws."

In recent years there has been some question as to the actual intent of this law as regards such cooperative marketing associations as the Dairymen's League and similar organizations, and in numerous instances their officials have been arrested and made to stand trial on the charge of committing an offense against the anti-trust law. The Capper-Hersman bill seeks only to make the law so explicit that the farmers' rights in the matter of collective bargaining will be fully understood, and that the cooperating farmers be given the same privileges as men in other industries.

Packers Fight Control Bill.

Indications are favorable that a packer control bill will be reported to the house soon by the agriculture committee. The packers have put up a strong fight against any form of control legislation. At the hearings they have had experts, attorneys and many men who claim to be stock raisers testifying in their favor. In most instances however, it has been found that these stockmen friends of the packers have had some other interest beside stock raising that impelled them to travel several thousand miles to Washington to testify in behalf of the Chicago "Big Five" packers.

The men who are actual farmers and stock raisers, whose sole interest is in their farm or ranch, and who paid their own fare to Washington to testify at the hearings, have nearly all favored government regulation of the packing industry.

There seems to be a determined effort on the part of certain interests working in congress to amend the land

bank law in such a way as to render it ineffective. It is alleged that the committees on banking are not as favorably disposed to the land banks as they might be, and the friends of the latter say they have to keep on guard all the time to see that there is nothing gets through congress that will in any way impair the usefulness of the land banks and farm loan associations.

Secretary of Agriculture Edwin T. Meredith is strongly in favor of federal and state cooperation in highway improvement. He believes that the government should join with the states in connecting up the state road systems, in order that the development of a national highway program may proceed in a systematic manner. Mr. Meredith believes that congress should provide for the continuation of the work under the present system by appropriating at least \$100,000,000 for each of the four fiscal years beginning with 1922.

Flour for Starving Europe.

The house has passed a resolution authorizing Julius H. Barnes, president of the United States Grain Corporation to send five million barrels of flour to the starving people of Central Europe. During the debate on the resolution strong humanitarian appeals were made in its favor; but there were some doubts expressed as to whether this flour will ever reach the poor people who most need it. One congressman asserted that it would merely prolong the idleness of people who will not work so long as they can get flour and other food from the United States. A pathetic appeal in behalf of the "starving people" of Poland brought out a rejoinder that the Polish government has recently purchased a \$200,000 building in Washington to house its embassy, and that the Polish ambassador has just leased a house at Newport, R. I., for his summer residence.

That the great sympathetic heart of America cannot resist the appeals of starving people of other nations, was shown by the vote of 283 to twelve in favor of the resolution, but there are some things going on in Europe and the attitude of the peoples of those countries which tend to dampen the sympathy of many practical Americans.

What is Congress Going to do for the Ex-Service Men.

This question is no doubt of considerable interest just now to thousands of young men who, after serving Uncle Sam in the army and navy, have returned to the farms.

Many bonus bills have been proposed; perhaps too many for the good of the movement to reward the country's fighters. Hearings are now closed on these bills and it is thought that a bill will be reported soon providing for a bonus of some sort. The Morgan Soldiers' Loan bill has been approved by the grange and several other organizations. It provides for a loan fund, through the use of which honorably discharged men may buy farms or homes in cities and villages. It is proposed to organize a hundred million dollar corporation, with the government to own all the stock, which will loan up to one hundred per cent of the appraised value of any home or farm any soldier may desire to purchase, up to a reasonable limit. The mortgages taken in security will be used for the basis of bond issues to provide further capital. The grange representative suggests that it could be administered through the land banks, thus saving the expense of a new lot of officials for the purpose. Fifty dollars a month for each month the man was in the

service is another proposition that meets with considerable favor.

A Temple of Agriculture.

The movement to erect a Temple of Agriculture in Washington is meeting with considerable encouragement. Seventeen states had participated in the campaign to raise funds for the project on the completion of the recent audit, which showed total receipts of \$41,915. Washington state, Pennsylvania and California are the largest contributors. Secretary C. W. Holman, of the finance committee in charge of the drive, reports that a campaign will begin soon in New York, Maryland and Georgia to boost the fund. In New York state the Dairymen's League will lead the drive. —E. E. REYNOLDS.

TO CONTROL SEED TRADE.

THE attention of the agricultural committees of the senate and house has been directed to the impure seed evil by Secretary Charles A. Lyman, of the National Board of Farm Organizations. The mail order houses are charged by Mr. Lyman with selling farmers at "bargain prices," seed filled with weedseed and other foul mixtures.

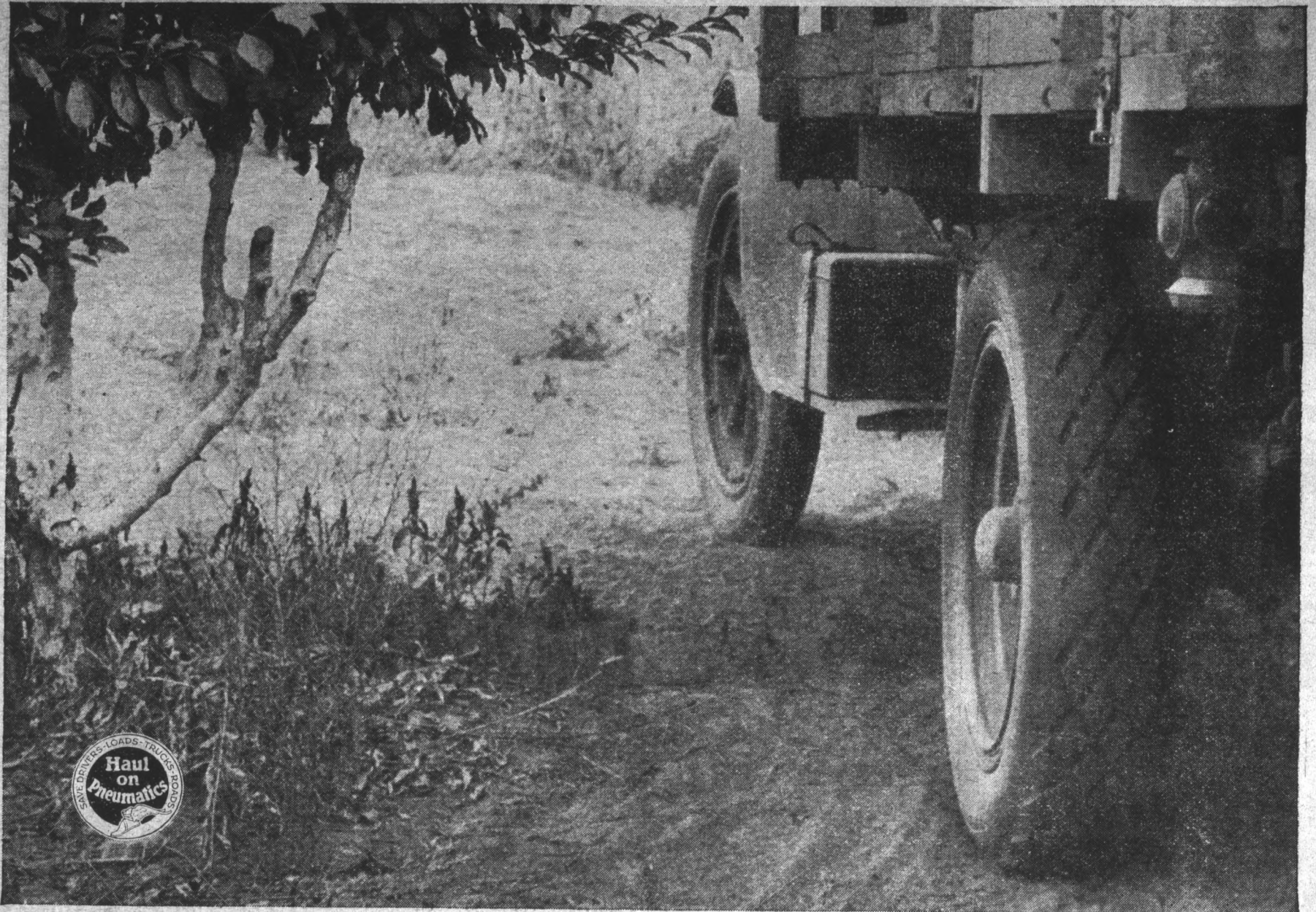
In speaking of this impure seed problem, Senator Arthur Capper, of Kansas, says that if the seed distributors are to continue to enjoy the privileges of interstate commerce they should be compelled to conform to a general standard to be established by the federal government. "Many of the states employ officials whose duty it is to see that the seeds sold are pure. But these have no control over interstate shipments. The seeds are sent in original packages by mail, express and freight, and the state officials cannot interfere."

"The states cannot regulate or suppress the evil. They are wholly helpless. They cannot rifle the mails of a farmer and insist that he turn over his packages of seeds. If the problem is to be effectively dealt with it must be through federal legislation."

Senator Capper thinks that with its present machinery the Federal Department of Agriculture, if given legislative authority, could force the business concerns complained of to desist from the practice of selling impure seeds. It is probable that a bill will soon be introduced in congress, aiming to remedy this impure seed trade evil. —E. E. R., Washington, D. C.

VEGETABLE GROWERS AID IN FIGHTING CORN BORER.

AT the February meeting of the New York State Vegetable Growers' Association, held at Syracuse recently, the members voted to use their influence in a nation-wide fight against the corn borer. Dr. George A. Atwood, director of the bureau of plant history of the department of farms and markets, gave the address of the afternoon, speaking on corn borers and their destruction in this country, as well as on measures being taken to eradicate them. "The corn borer," said Dr. Atwood, "made its appearance in New York in 1918, and the sum of \$50,000 was appropriated for the fight against it. One hundred men were employed last year to burn corn stalks and stubble wherever signs of the insect were found. The United States has appropriated \$100,000 for eradication of the pest, which has long been a grave problem with European farmers." He asked members of the association to be on the alert for any evidence of the pest and to familiarize themselves with measures of fighting it.



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Farmers' reports, describing in full the effect of pneumatic truck tires in eliminating farm drudgery, assisting general motorization and increasing yearly income, can be obtained by writing to The Goodyear Tire & Rubber Company, at Akron, Ohio.

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Crops for Sugar Beet Fields

By Charles H. Graves

WITH spring's work at our front door and the time for planting sugar beets only sixty days off, the farmers must decide soon what they will raise if the sugar companies do not agree with their demands which seem not in the least unreasonable to the farmers.

Can the farmers substitute any other crop for the beet crop and show the same profit at the end of the year from their farms? Will it incur any particular hardship to the farmers if they do not produce beets this year?

Studies made in the vicinities of Caro, Alma and Grand Rapids, Michigan, reported in Bulletin 748, United States Department of Agriculture, show that only 7.17 per cent of the tillable land was planted to beets in the Grand Rapids area, while 18.33 per cent was given over to sugar beet production in the Caro district. In the areas of heaviest production there is less than one-fifth the tillable area planted to sugar beets. This means if they are not included in the list of crops the rotation will be shortened by one year unless some other crop is introduced to replace them.

The typical rotation in the sugar beet area is as follows: Clover and timothy, one to three years; corn or corn and beans, one year; sugar beets, one year; grain, one year. Some variation from this practice may be found but they do not materially affect the general plan of farm organization.

It would be a very simple matter to introduce a second grain crop to replace the sugar beets which would in no wise sacrifice anything by the change in the distribution of labor over the growing season. Since the rotation is largely determined by the labor factor this is well worth consideration for the farmer who is unable to find adequate help for the busy seasons.

The man labor requirement of the sugar beet crop is greater than any other crop grown in the region and very little of this man labor can be replaced by horse and machine work when it is impossible to get the proper help.

Except on farms where a very small proportion of the tillable land is in sugar beets a large part of this labor must be hired. The culture of the crop does not allow a distribution of this labor over a period of time that will permit one man to handle large acreages. If a grain crop were substituted for the beets the labor problem would be much simpler and a greater proportion of the product could be produced by horse and machine work. No hand or hoe work is required on the cereal crops which makes their culture much simpler.

The only condition that could entail hardship to the farmer might occur in instances where the family is large enough to have a surplus of labor unless an intensive crop is included in the rotation, and even that would not be a problem under present conditions as there is ample opportunity to rent extra land due to the scarcity of farm help.

The investigation previously mentioned shows that one hundred and five to one hundred and fourteen man hours, and eighty to ninety-five horse hours are required to produce an acre of beets. These figures represent the conclusions drawn from an aggregate of 2,754 acres of the crop, this being the number of acres included in the survey.

The following shows the comparative labor requirement of sugar beets and the grain crops that might be used as substitutes: Sugar beets, forty to sixty man hours; oats, eighteen to twenty-two man hours; barley, eight-

een to twenty-two man hours; wheat (spring), twenty to twenty-four man hours. In addition to this, the farmer's own labor, the sugar beets require from fifty to sixty hours of contract labor usually supplied by foreign help. The only balance against this to be found with the grain crops is the threshing and this means only the increase of an operation which is already established on every farm.

The above figures lead one to conclude that the farmers would be in a better condition to meet the labor situation during the coming season if the sugar beet crop were more or less eliminated from the rotation—temporarily at least.

The comparative receipts from the two classes of crops may throw another light on the situation. The bulletin previously referred to shows an average yield of approximately ten tons per acre which at the ten-dollar rate would yield one hundred dollars per acre. The same labor required to produce an acre of beets would produce two and a half acres of oats or barley. With normal yields this would equal as large receipts as from the sugar beets per unit of man labor, but would not show as large receipts per acre of land. However, the margin between expenses and receipts per farm would under present labor costs be as great and the farm income as a whole would not suffer. To many this solution of the sugar beet controversy may in a degree help solve the labor problem as well.

MICHIGAN COOPERATIVE CROP REPORTING SERVICE.

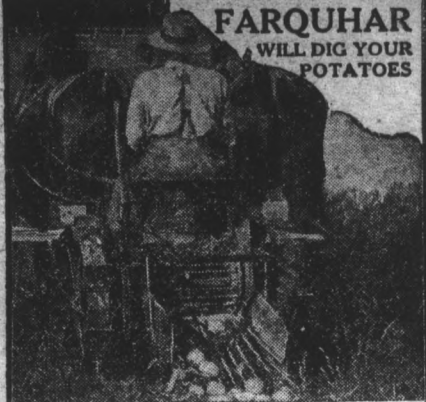
THERE is about two and one-half times as much wheat, and nearly double the amount of corn, on farms as on March 1, 1919, but there is less than one-half the amount of oats and barley as on that date, according to the reports received by Coleman C. Vaughan, Secretary of State, and Verne H. Church, Field Agent, United States Bureau of Crop Estimates from the crop correspondents of the Michigan Cooperative Crop Reporting Service. The report issued by that office also gives the estimated land values in the state, and shows that there has been a slight increase during the past year in all classes of lands, and quite a marked advance in the value of well-improved farms.

Corn.—The amount of corn in the form of grain still on the farms of Michigan amounts to 11,712,000 bushels, if we will take into consideration that thirty-five per cent of the crop area went into silos. This is twenty-eight per cent of the crop and the highest percentage since 1916, as 1917 and 1918 were poor corn years. Only a few small local areas produce enough for their needs while the counties where stock feeding is general have to ship in a large number of cars each year. The average amount shipped out of the county where grown was five per cent as compared with an average of four per cent for past years. The merchantable quality was unusually high, being eighty-four per cent. In 1918 it was sixty-four per cent, and in 1917, only ten per cent.

Wheat.—Eighteen per cent of the wheat crop still remains on the farms, as compared with thirteen per cent last year, seventeen per cent in 1917, and a ten-year average of twenty-three per cent. This is equivalent to 3,643,000 bushels. If to this we add 3,600,000 consumed as food on the farms; 410,000, or two per cent, normally consumed by poultry and live stock; 2,014,000 required for seeding both winter and spring wheat; 9,848,000 marketed during the period August 1 to

(Continued on page 527).

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April and May Dairy Notes

It is always a perplexing problem to get the cows to grass without checking their milk yields and at the same time without cutting down the yield of the pastures for the summer. This problem is greatly simplified if we have an abundance of well-prepared silage at hand. This furnishes the succulence that grass does, and makes the change less abrupt. With plenty of silage one can afford to keep the cows in the barn until the grass contains sufficient nutriment to produce a maximum flow of milk. Nor is it much of a problem to the man who has plenty of hay and grain. He can simply refuse to injure his pastures, and he will be wise in so doing.

Many dairymen are not in a position to do what they know is best. If hay is scarce the temptation is great to turn the cows out before the grass is fit. In some cases this must be done. Possibly no roughage can be bought in the neighborhood at any price. The cows are turned out and graze the pasture so close that it can not furnish good grazing during June and July. The spring is here and we can not do much to improve conditions for this year. However, we must avoid similar losses next year. We can harvest more corn and feed the cut and shredded fodder during the early part of the winter and hold over the hay and silage for spring feeding. We can seed more land to hay and forage crops, and thus have more feed for the cows next spring. A large portion of these spring losses are due to a flaw in our system of feeding our cattle. Buying high-priced grain feeds often seems like a hardship, but buying roughage for the dairy cattle is like pouring water in a rat hole.

If winter rations are continued until the grass becomes fit for grazing the dairyman has the right to expect that his grain bills will materially decrease, or disappear altogether, for there is no balanced ration yet discovered equal to good pasture, and still every dairyman knows full well that his pastures will furnish a full ration but two or three months out of the year, when he will again be met by the same problem of how to furnish a full ration which will leave a profit. Necessity compels many dairymen to utilize considerable of their land for pasture, consequently it is not my purpose to advocate an extensive or exclusive system of green soiling crops. However, few dairymen appreciate the value of soiling crops in tiding the cows over periods of dry weather and short pastures. Soiling crops will help wonderfully in maintaining the milk flow without extra cost except the item of additional labor; while short pastures will result in a falling off in milk yields and flesh condition. How, then, is the cheapest and most efficient method of supplying additional food for the cows during the pasture season?

Fortunately over the most of the eastern states it is unnecessary to make elaborate preparations for the late summer shortage of pasture and early shortage seldom occurs if judgment is exercised in turning the cattle into the pastures. Where oats and peas, corn, clover and alfalfa thrive, no other crop exceeds them in the amount of forage yielded per acre, and no other crop exceeds them in the amount of profits they give when harvested in the ordinary way for winter feeding. The best winter roughage crops and the best soiling crops are thus the same. This fact has proved the stumbling block to many dairymen, who have allowed many dollars to slip out of their hands in losses on suffering cattle, in keeping back their feed crop for the winter, rather than cut and feed them green. The better way is to consider that they already have produced more feed than any other crops that

could be grown on same land, and actually a greater yield than any pasture grass has produced on the same area in an entire season.

For early feeding, oat and pea forage is exceedingly valuable. This crop should be sown early and at various intervals during the spring. I prefer to sow about equal parts of each kind of seed, using about three bushels of the mixed seed to the acre. It is ready for feeding as soon as the oats are in the milk stage of their development. For a herd of from twenty-eight to thirty-two cows we sow two acres each week and make four sowings, one as soon as the soil can be worked, the next two weeks later and the last about three weeks later than the others. These two-acre patches leave considerable each time to be cut and cured for hay. Those dairy feeders who are already using these feeds will be sure to have plenty of this valuable mixed crop to cure for winter use. In cutting it for hay it should be allowed to get a little beyond the milk stage of its growth, but not too ripe. If the peas are hard, the cows do not relish them so well. If the crop is ripened and threshed, the grain may be ground and will give an excellent balanced grain ration for the dairy cow.

Many dairymen who have succeeded in getting small fields of alfalfa started on their farms can realize the most from it by using it as a summer soiling crop to supplement pastures. Alfalfa is the best soiling crop that we can grow on our farms. When using alfalfa for soiling purposes it is well to keep in mind that it is dangerous to feed hungry cattle all they will eat of green alfalfa, not wilted, as it may cause bloat. I like to cut sufficient at one time to last three or four days and allow it to become wilted, and then pile it in cocks and cover them with hay caps so that it will escape drying to brittleness. There is no danger in feeding moderate quantities if it is wilted and handled in this manner before feeding.

Green corn makes a very acceptable feed for dairy cattle. Better results may be secured by running it through a cutting machine and feeding a little dry grain along with it. The feed may be still further improved if green alfalfa is cut with the corn. So efficient is this combination in feeding dairy cattle that many dairymen prefer it to ordinary pasture grass and the returns from a few acres of corn and alfalfa cut together and fed green are fully four times as much per acre as a crop of pasture grass on similar land. It is true that when corn and alfalfa are cut green they contain less nourishment than when they are allowed to reach a proper degree of maturity, but when fed green there is almost no waste; even the stalks being eaten. These crops cut green and used for soiling purposes give greater net profits than if allowed to mature and are fed from the mow and silo.

At this time of the year dairymen should not forget that their profits depend fully as much upon their skill as farmers as upon their ability to coax their cows to produce large yields of milk from purchased foods. We need more producing dairymen and fewer of the manufacturing kind. The producing dairyman will plan to grow the best food crops for his cows and reduce the cost of purchased feeds to the lowest possible notch. If one will note the character of the feeds most in evidence through the dairy sections he can not fail to observe that by far the largest part of them are the "mixed feeds," comparatively low in protein (the only element the dairyman has any reasonable excuse for buying) and high in fiber, of which he now has a surplus in his farm-grown feeds. The

(Continued on page 525).

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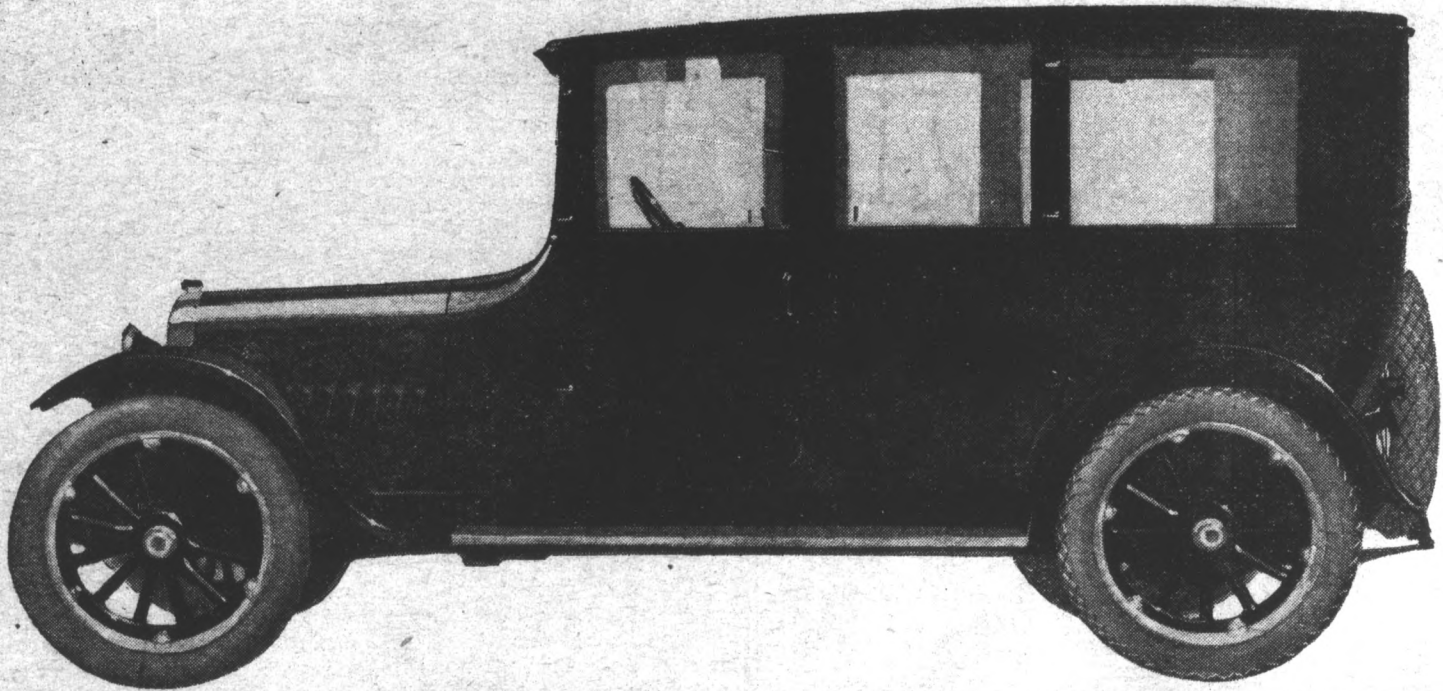
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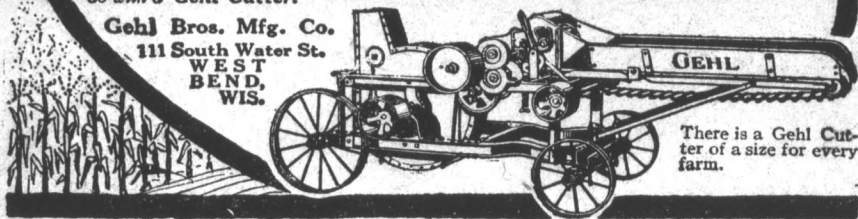
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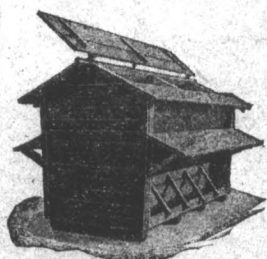
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Guinea Pigs Solid colored white, red, black, cream and a few broken colors \$1.50 to \$2.00 each. **CARL CROXTON,** Reading, Mich.

Starting Early Garden Plants

By Gertrude K. Lambert

IN order to have best results from giving quick, strong growth after be garden crops that require an early start, tomatoes, peppers, celery, early cabbage, and many others, it is of first importance to have strong, thrifty plants ready for transplanting when the time comes. Not that this alone insures the crop. Eternal vigilance is the price of many things, including a good garden; and the best of plants may only lead to failure through after neglect, but good plants with an equal chance, will far out-distance poor ones. Many gardeners have learned this, and buy their early plants from a greenhouse or dependable grower, rather than risk failure through their own efforts. Others, frankly "can't bother," and unless one is willing to undertake a great deal of "bother," it is best not to attempt the home-grown plants.

A hot bed, even a crude affair, is a great convenience in raising early plants; but even this requires much "bother." Enough plants for a generous home garden, may be raised very successfully in pots and boxes if given the necessary care—bother. Medium-sized flower pots, or even tin cans with holes made in the bottom for drainage, are fine for starting the seed as these may be set on an ordinary window sill, and are easily moved about. Put a few dry leaves or a wisp of straw or grass, in the bottom of each and fill two-thirds or more with very rich soil, from a barnyard is best, worked fine; then fill up with garden soil, rather light sandy loam is best, as heavy soil bakes. Set where the soil will become thoroughly warm, then sow from one to two dozen seeds in each pot or can and cover lightly with the fine top soil, wet down with warm water and set in a warm place. As often as the top soil seems too dry when pressed down with the tip of the finger, give more warm water—barely tepid, not hot; after a few days set in the sunlight as much as possible and do not allow the soil to chill or become too cold.

If kept warm and moist, the little plants will begin to appear in from one to two weeks; but unless conditions are perfect, it will take much longer. When the second or third pair of leaves are started the tops of the cans or pots will begin to look crowded and the little plants should be carefully reset into larger containers; wooden soap boxes or deep old pans serve very well for this purpose. Fill with the rich soil, topped with lighter soil, and set the plants an inch apart, wetting well after setting. Give plenty of warm water and sunlight, now, and in a few days the little plants will begin making wonderful growth. If the plants become too large and again look crowded, perhaps becoming stunted in growth, before the weather admits garden setting, reset again, giving more space to develop; large boxes out of doors, covered well on chilly nights, are best now. Cabbages may be set in the garden much earlier than tomatoes or other tender plants, which should not be put out until settled warm weather. I have transplanted tomato plants loaded with blossoms and buds without seeming to injure the development of the fruit in the least.

Really, there is no "trade secrets" about raising home-grown early plants; there are, however, a few points that must be kept in mind in order to be most successful: Have light, fine porous soil for the tops of containers, otherwise you may lose upon it, and it may be levied upon on many plants from "damping off;" keep warm and moist and give all the sunlight, and later, air, possible; reset the little plants at least once before garden setting, as it develops the roots, the land also.

In setting in the garden, the final transplanting, I prefer a damp, cloudy day before rain rather than after, with the soil rather dry and fine; set in rows made by a corn marker—for horse cultivation; unless rain is certain and imminent, I turn water into each hole before covering the roots of the plant, setting rather deep and pressing the soil well down, leaving a slight hollow to collect the moisture.

If cutworms are a menace, I wrap each stem loosely with a bit of paper, before setting; and at evening scatter a few bits of green onion top, wet and rolled in Paris green, about each plant. I have found as many as three dead cutworms near one plant thus protected. Usually enough onion tops may be found in the cellar onion bin. Possibly potato sprouts from the cellar might answer as well, but I have never tried them.

As to the time for sowing seed and setting plants, this must be determined by the location and climate. If six weeks are allowed, before the probable time when garden setting is safe, one can estimate the time for sowing; and the plants will usually be about right for setting.

The plants should be hoed, the soil well loosened and moist soil drawn about the stalk, as often as once each week until large enough for horse cultivation, and when the soil is drying after each rain until too large to disturb by the hoe. If this is done, a fine crop will be reasonably certain.

GYPSY MOTH FEARED BY NEW YORK FRUIT GROWERS.

ONCE more the state Department of Agriculture and the federal department are showing some concern over the appearance of the gypsy moth near the New York line in Vermont. A large infestation in Vermont, about twenty-five miles away from the boundary, calls for immediate steps in a struggle which will probably continue for several years, if the state is to be spared from the depredations of the moth which attacks fruit trees extensively.

The gypsy moth showed up in Ontario county, this state, in 1912, and two years of hard effort were necessary before the colony was exterminated. Two years afterward the moth showed up in Westchester county and fifteen thousand egg masses were found. Through the use of powerful spray pumps extending through a three-year's campaign the county was cleared of the pest, leaving the state entirely free of gypsy moth. No further threatenings have developed until the present menace near the Vermont border. It cost approximately \$200,000 to fight the moth in its two appearances in this state.

CHattel Mortgage ON GROWING CROP.

Please inform me in regard to the legality of a chattel mortgage on a growing crop. I. M.

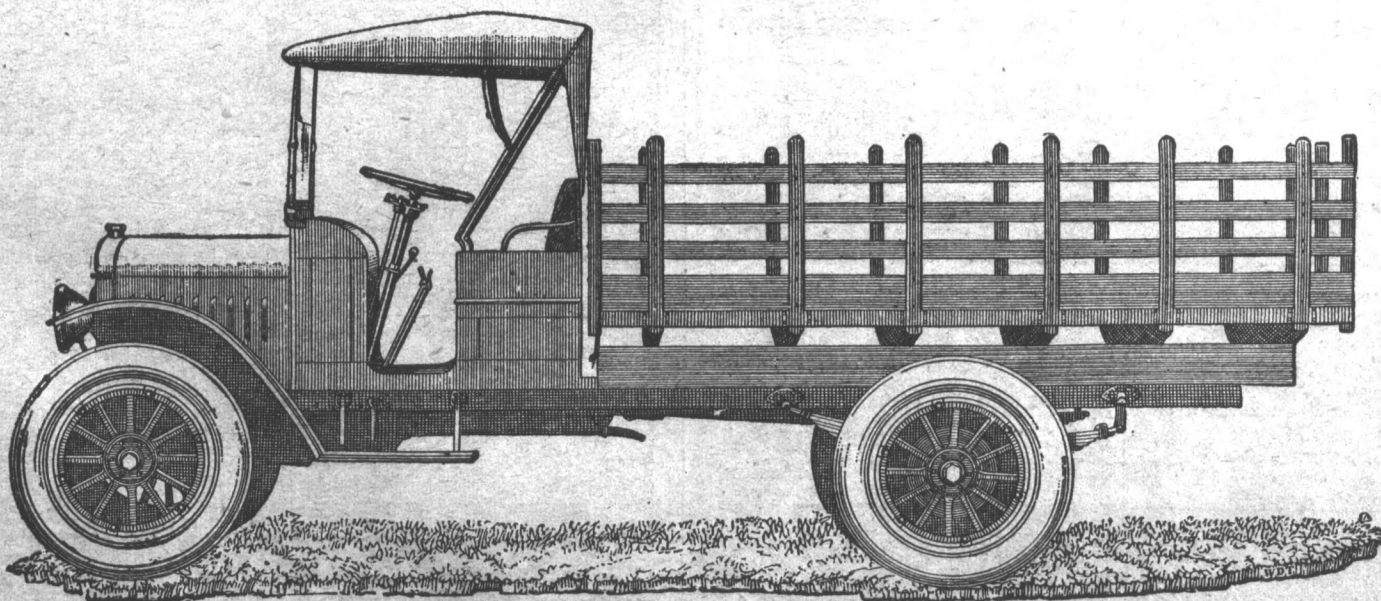
While the growing crop is so far real property that it will pass by a sale of the land and by will or by descent with the land, it is so far personalty that the owner of the crop may sell it or give a chattel mortgage upon it, and it may be levied upon on execution against him; and the state of maturity of the crop at the time, is immaterial; and it is also immaterial that the man who owns the crop owns the land also. **J. R. R.**

5 Things Worth Remembering about a MAXWELL Truck

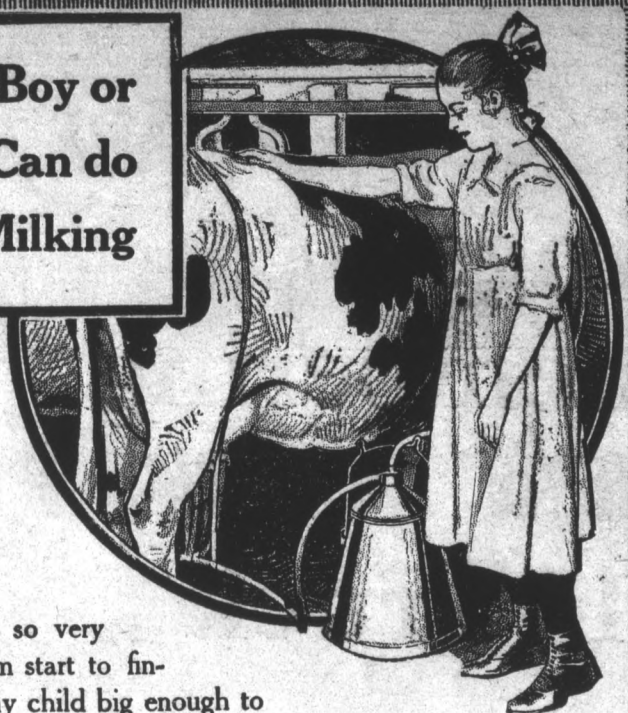
1. It has a worm drive, which is the predominant feature of most worth while trucks.
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Owosso, Michigan**

The Litchfield Creamery

THE yearly record of the Litchfield Creamery Association affords an admirable illustration of successful cooperation. Not long since the writer heard a so-called middleman—a dealer in coal, wool, seeds, and various other products—argue plausibly and at length, to prove the fallacy and ultimate failure of the cooperative idea. Admitting that this middleman had his own axe to grind, it must be conceded that the history of certain cooperative undertakings affords grounds for the kind of arguments advanced. But in spite of failures, the cooperative idea has come to stay. The Quincy Cooperative Shipping Association mentioned not long since, by the writer, in these columns, and the Litchfield Creamery Association, the success of which has occasioned this article, are the best proofs of the soundness and practicability of the cooperative movement. Moreover, the American farmer is yet far behind in carrying out this cooperative scheme, and has much to learn from that greatest of all teachers—experience. Little Denmark, with her cooperative dairies and packing houses, affords an illustrious example of a successful nationwide cooperative movement among hog raisers and dairymen.

The Litchfield Cooperative Creamery is now in the tenth year of its existence. Although successful from the outset, the year 1919 was the most satisfactory in the history of the institution. Directors and stockholders alike, will admit that much of this added success is due to the manager, C. S. Bater. And right here let it be said that the key to success in all cooperative undertakings is found in the wise selection of men to manage the business. Laxity and indifference in this regard, have proved more than once, the cause of failure. Directors need to possess the courage of their convictions.

In seeking reasons for the remarkable record made by the Litchfield Creamery, one is found, undoubtedly, in the firm grip held by the directors on the business of the institution. These directors, seven in number, are elected annually. Theirs is the final court of appeal in all matters. Accurate reports of the business must be submitted each month. They have the power of dismissing any employee of the association, from the manager downward. Not only this, but the manager must give bonds binding him to the faithful performance of his duties. In addition to these directors, there are

a president, a secretary, and a treasurer, elected by the board, with the usual duties of these offices.

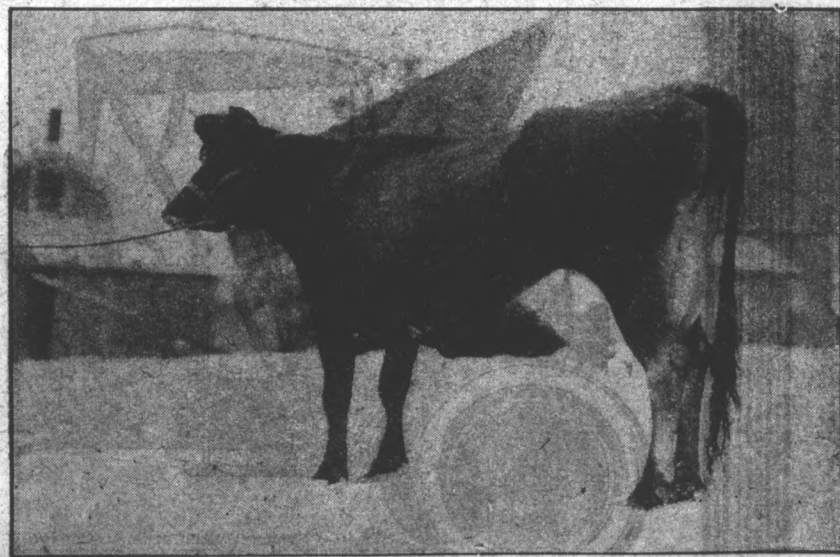
In comparing the ninth annual report of the Litchfield Creamery Association with the report for the preceding year, the following facts relative to the growth of the business may be deduced: During 1919, 191,410 pounds more of cream was taken in than during the previous year; 88,483 more pounds of butter was made, for which the company received \$100,683.57 more than in the year preceding. The patrons received an average during the year, of eleven cents per pound more than the year before, and the average cost of producing the butter was decreased from 3.5 to 3.3 cents.

It is probable that all will admit that in this actual decrease in the cost of production rests Manager Baters best claim to efficiency. Increased patronage is, of course, nearly always an index of successful management. It is particularly so in the present case, for the facts have to do with a territory in which the production of cream has been cut because of the protracted droughts and an exceptionally scant hay crop. Foreseeing the dearth of hay and its substitutes, many farmers cut down the number of cows kept, during late summer and early autumn. Poor pasturage in preceding summer months, interfered appreciably with cream production. The significance of the increase in business is therefore apparent.

But satisfactory as this phase of the comparison is, it dwindles beside the fact of decreased cost of production. Everywhere, on every hand, we hear the cry of high prices. These high prices apply alike to all commodities, labor included. When a man can so engineer a business of any kind that he can render the service desired and yet cut the cost of production, under present conditions, he is displaying ability of a rare sort. The Litchfield Cooperative Creamery draws its patrons from a wide territory, and its record for 1919 will increase still farther, its flourishing business.

The following is the annual report of the total amount of business for the year 1919:

Cream 1,259,223 pounds; butterfat, 504,879 pounds; butter 623,637 pounds; amount received \$369,691.62; expense \$20,677.55. Average price paid for butterfat 69c; cost of making butter, per pound 3.3c; average overrun for year 23.5 per cent; average test of cream for year 40.1 per cent. J. A. KAISER.



MAJESTY'S IRIS 265701 completed her third official year's test with a remarkable record of 955.87 pounds of butterfat from 17,469 pounds of milk. This record places her as the ninth highest fat producer of the Jersey breed, and tenth in the production of milk. She was started on test at the age of seven years and four months. The test was supervised by the Michigan Agricultural College, fourteen different supervisors making a total of eighteen supervisions during the year. Majesty's Iris was bred, raised and placed on test by Edwin S. George, Oakland county, Michigan. It is an honor to own a high-record cow, but to breed, raise and test one of the ten highest animals of the breed is a distinction but few can claim.

NOTES FROM A MICHIGAN GARDEN.

FOR the season of 1918, I very foolishly ordered my seed of a western seed house. The house is reliable and the seed were just as represented, but—never again. Everything in the garden was weeks behind and some of the things never did ripen. Western seed requires too long a growing season for Michigan gardens. This past summer I ordered my seed from a Michigan firm and had the best garden I ever had, and you may be sure that Michigan-grown seed cannot be beat for our climatic conditions.

I want to tell you about my success with tomatoes. I planted the seed on March 15 in a home-made hot bed made of a few old boards and a couple of discarded window sash. The hot bed measured three by five feet and in that small space I raised nearly a thousand plants. I gave away a few hundred to relatives and neighbors and set out six hundred plants as soon as danger of frost was past. The plants were set two feet apart in the row and the rows four feet apart. Shortly after setting, I put a small handful of fertilizer around each plant and hoed the ground up around the plant. Cutworms took a few and a few just naturally gave up the ghost, but over five hundred lived and thrived mightily. Some of the vines attained a length of over six feet and sent out roots wherever they touched the ground. I did not trim them and did not stake them, but let them grow naturally. I sprayed the plants twice with Bordeaux mixture and hand-picked the worms.

All of the neighbors told me that the first tomatoes invariably rotted but I never had one rotten tomato. When the vines had set a number of tomatoes I gave them a thorough dusting with hydrated lime—threw it on by hand until the whole plant was white and even the ground was thoroughly whitened. I never had seen that done before but it did not injure the plants in the least and it did prevent the least sign of rot.

From this small patch I shipped about fifty bushels to the Chicago market, sold a number of bushels to neighbors, supplied my own and my wife's relatives, sold one load to a canning factory, my wife canned about fifty quarts and we had them on the table from the first ripening to the first black frost, and towards the last I gave them away by the bushel as the market was too low to warrant shipping. After the vines had frozen, I pulled them and stacked them until the ground was frozen and then used them in mulching the strawberry bed. I shook off and plowed under at least thirty bushels of green tomatoes. I forgot to mention that I fed bushels and bushels to the hogs after the price went down. I used no special method of culture and the ground was quite poor. The only unusual thing I did was to give them the lime dusting but that certainly paid. Anyone may do as well but be sure to use Michigan-grown seed. The variety was Isbells Pride, but another variety would probably have done as well.

St. Joseph Co. L. B. REBER.

CHINESE EGGS FOR AMERICA.

HEAVY imports of Chinese eggs, mainly in the shell, are being reported through the local custom house but the most of these are going to the larger cities on the Atlantic Coast. Late arrivals included 6,072 cases of shell for the east; 3,500 more for New York; 180 cases of dry egg yolk for Seattle and 150 for Baltimore; 150 cases of whole egg powder for Seattle and 400 for New York, and ten cases of salt eggs for Seattle. There are three more large cargoes to arrive within a short time.



To the Tractor-Owner:

YOU know the value of power in the saving of time, money and labor on the farm—provided you have the right tractor.

If you also own an automobile, you have learned what a wonderful time-saver this form of power is in making quick trips to town and getting around the country.

You will readily appreciate, then, the great value of a motor truck as a saver of hours, dollars and work on the farm, for it combines the heavy-duty utility of the tractor and the distance-reducing responsiveness of the motor car.

International Motor Trucks, which are made in five capacities— $\frac{3}{4}$, 1, $1\frac{1}{2}$, 2, and $3\frac{1}{2}$ -ton—are particularly adapted to farm use because of their

sturdy, rugged construction and powerful engines. They are entirely factory made at the Harvester Company's plants—not assembled—and are made with the same care and regard for quality and service as McCormick and Deering haying and harvesting machines, with which you are familiar. Harvester Service is always available through the 92 International Harvester branch houses, conveniently located, which serve thousands of local dealers.

Do your hauling with International—the truck that "goes where the going is hardest." Write your name along the margin of this advertisement and mail to us so that we can send you a folder that will give you a faint idea, at least, as to how good-looking and good-working International Motor Trucks really are.

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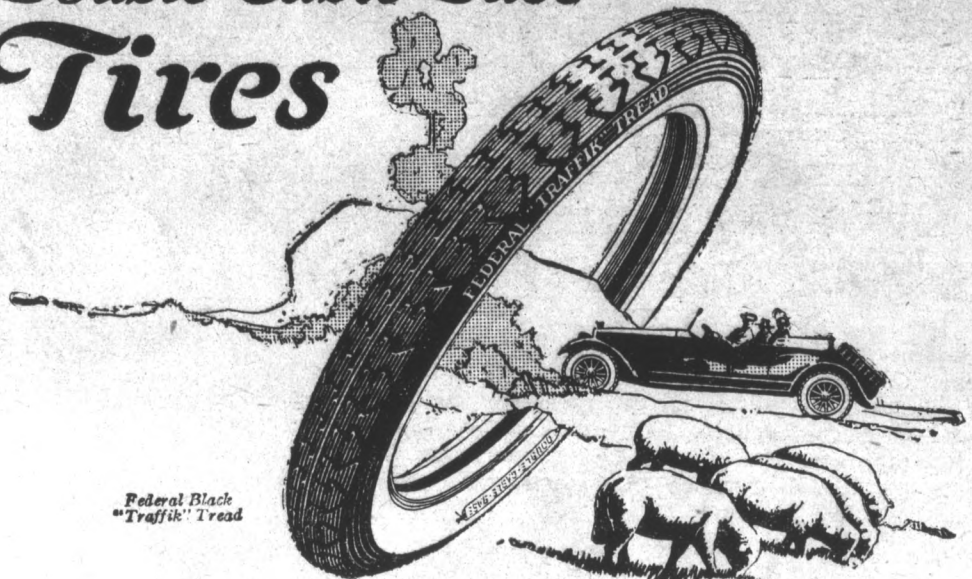
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WORKMEN'S COMPENSATION LAW.

In a recent issue of the Michigan Farmer, the liability of a farmer for injuries to a carpenter putting up buildings was discussed. What kind of contract would a person have to make to avoid liability? Insurance may look easy but it is not. Suppose a wind blows a man's chimney off and he hires a mason to build or repair the same. After the mason has gone the farmer has no further use for the insurance. C. G.

The law provides as stated in the article quoted that employers are liable for injuries to workmen other than household servants and farm laborers, regardless of the negligence of the employe, unless the employer has elected to be liable according to the terms of the workmen's compensation law. The only method we know of by which the farmer can avoid liability in such cases is to take insurance or to let out the contract to an independent contractor. By an independent contractor we mean one who completes the job for a set price, doing it according to certain plans and specifications, and either furnishing the material or having it furnished for him, and taking his own method of accomplishing the results according to the contract. J. R. R.

HOW TO AVOID LIABILITY.

In a recent reply to an inquiry Mr. Rood stated how a farmer may avoid liability for injuries sustained by a workman while employed at contract work on his farm. To his reply he wishes to add the following:

Another method for avoiding liability for injuries is to let a contract for a definite sum for the erection of the building. In this contract it may be agreed that the farmer shall furnish all the materials or that the contractor shall furnish all the materials, or that one shall furnish a part and the other a part. The important thing is to avoid hiring for wages. If a party agrees to put up the building for a fixed price complete, he is an independent contractor; and the farmer is not liable for any injuries resulting to him or his help in the construction of the building. In that case a person injured on the job without any negligence by the farmer could have no recourse against him for the damages suffered.

MANURE.

There is no mention of manure in our lease and we have fed our animals on extra hay and grain purchased. Have we a right to remove the manure? C. S.

Good farming is generally recognized as requiring the tenant to put back upon the land manure made from the products of the soil. Therefore the tenant has no right to remove the manure. On the other hand, the manure made from products purchased by the tenant and fed upon the land belong to him and may be removed with his other property, provided it is done before he surrenders possession. The difficulty in the present case is that the tenant has mixed his property with that belonging to the owner of the land; and in such cases we fear that he is without remedy as he has no right to take anything but his own property. J. R. R.

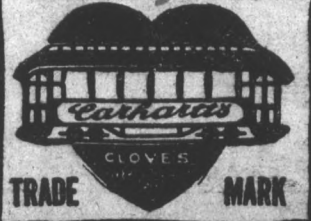
LIABILITY OF TENANT.

I let some land on shares last year. The tenant planted the crop and when it was matured did not harvest it. What remedy have I? Subscriber.

The terms of the lease are not given; wherefore we are not informed whether it was the duty of the lessor or the cropper to harvest the crop. Ordinarily we expect the cropper to harvest the crop and if he agreed to do so and failed he would be liable in damages for the loss resulting from his failure. J. R. R.



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and with a
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Don't forget to ask for my Farm, Stock and Crop Account Book. It is FREE TO YOU.

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Confer a favor on your pocket book by wearing Carhartt Overalls in making this year's crop. Don't be misled by substitutes and inferior garments. Pay the difference and demand the genuine Carhartt. If your dealer will not supply you with my overalls, made from Carhartt Master Cloth, write my nearest factory for samples and prices.

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Fill out and address to factory nearest you.

Please send me samples and prices of your Carhartt Overalls, made from your Carhartt Master Cloth, also prices of Carhartt Work Gloves.

I will appreciate the Farm, Stock and Account Book.

Name.....

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SEEDING ALFALFA WITH BARLEY.

I would like some information about raising alfalfa. How should ground be inoculated after barley crop, being quite heavy soil? And how much to the acre would be needed? F. J. L.

Alfalfa may be seeded successfully alone or with a light grain crop. If the field in question has never had a seeding of alfalfa before, and I assume that it has not, it would be safer to seed alone. It would be too late to seed this field after the barley crop is removed unless unusual weather conditions prevailed. Would suggest you plow this field as early in the spring as possible. Apply from two to three tons of finely ground limestone per acre. Keep well worked until about June 15-25, then seed, using a regular alfalfa seeder drill or any good grain drill with seeder attachment; or seed may be sown with a broadcast seeder and dragged in lightly. If you desire to seed with barley, prepare your seed-bed early, lime well and sow from two to three pecks of barley per acre. It would also pay to use two hundred and fifty to three hundred pounds per acre of acid phosphate. If the weather is very dry about the time the barley is heading out, you could clip the grain and let it fall back on the ground, thus forming a mulch for the young alfalfa. If there should be plenty of moisture, the barley could be left and cut for grain. As a rule, you would not want to attempt to seed this field to alfalfa for the first time in a grain crop unless the land is in good condition. Use the best alfalfa seed obtainable, which would be Grimm, Baltic or Cosack. You will likely find Grimm easier to obtain as the supply is greater. Get your seed right away as the demand this year is very heavy and the supply is rather light. Sow from ten to twelve pounds of seed per acre.

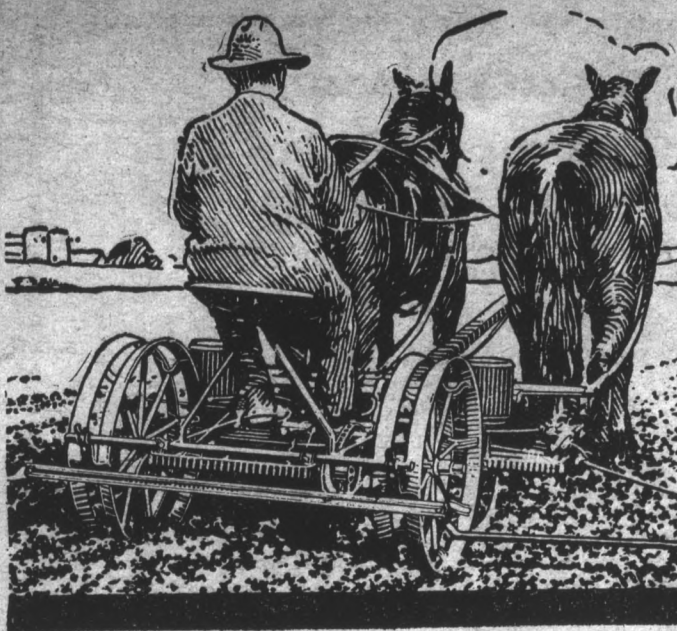
Use the pure culture from the Michigan Agricultural College to inoculate your seed. Use one culture for sixty pounds of seed or any portion thereof. Complete directions come with each culture. The cost is twenty-five cents per culture. D. W.

HUMUS CROP FOR SANDY LAND.

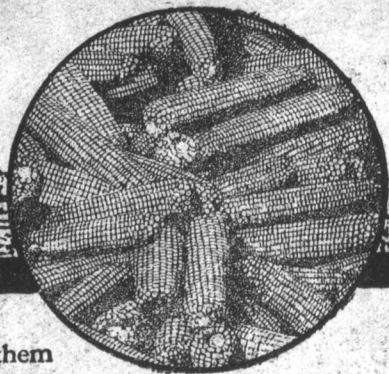
We have some dry sandy land that has been cropped until the humus is nearly used up and it is difficult to get clover started, and we are thinking of growing some crop to plow under to produce humus. What would you advise trying, Kentucky bluegrass, or what we usually call June grass? Would you think it a serious matter to kill it when preparing land for other crops? What would be best to sow? Allegan Co. J. L. F.

I would not recommend the sowing of June grass as a crop to plow under to add humus to this land. In the first place, June grass will not furnish a large growth and is slow to start on such land as this. Secondly, it is likely that this land is badly in need of lime, and June grass does not do well on such soil.

I would suggest you sow cow peas or soy beans about May 25 to June 1. Sow in rows about thirty inches apart, using one-half bushel of seed per acre. Cultivate the crop two or three times. If you sow soy beans, be sure to inoculate the seed. The culture can be obtained from the Michigan Agricultural College at East Lansing. Or you can take dirt from a field where soy beans were grown last year that were known to be well inoculated. Use the glue method with the dirt. Many prefer the dirt to the pure culture. About September 1, go on this field with a disc harrow and disc the beans or peas in. Once over will be sufficient for this. Broadcast rye and go over again with the disc to cover the rye. Set the disc pretty straight for this second time over and go the opposite way from which you did the first time. The following spring you can plow this rye under, put on a good application of lime and seed alone to alfalfa or clover. D. W.



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AN inaccurate planter covers up its mistakes. You don't see them when they are made. They are not visible until the plants come up and hills with too few or too many stalks show you where the planter failed to drop properly. Then it is too late to remedy the mistakes. You cultivate the crop, harvest it—and get a smaller profit than you should, all because of an inaccurate planter. Buy the planter that assures accuracy.

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pays for itself in a short time through the profits it makes by planting in every hill exactly the desired number of kernels. Farmers in all corn-growing sections rely on it for the proper stands that bring the extra bushels.

The "Counting Out" Method of the 999 gives you the same accuracy that you would get if you painstakingly counted out the kernels and dropped them by hand.

And the Variable Drop Device enables you to vary the drop to accord with the varying fertility of the field. Without stopping the team or leaving the seat, you can change the drop to two, three or four kernels—always the exact number desired. Merely shift a foot lever to make the change.

You can use the 999 for either hilling or drilling. Change made instantly by means of foot lever. Nine different drilling distances can be secured without changing plates.

You can use the 999 for planting any kind of corn, and a great variety of other seeds, without changing cut-off.

Fertilizer and Pea Attachments can be furnished—either or both can be used when planting corn.

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It kills the codling moth and other chewing insects—prevents rot, and other fungous disease. It keeps the fruit clean and sound, gives it good finish and color, and helps it to stick on until harvested, in spite of even heavy wind storms.

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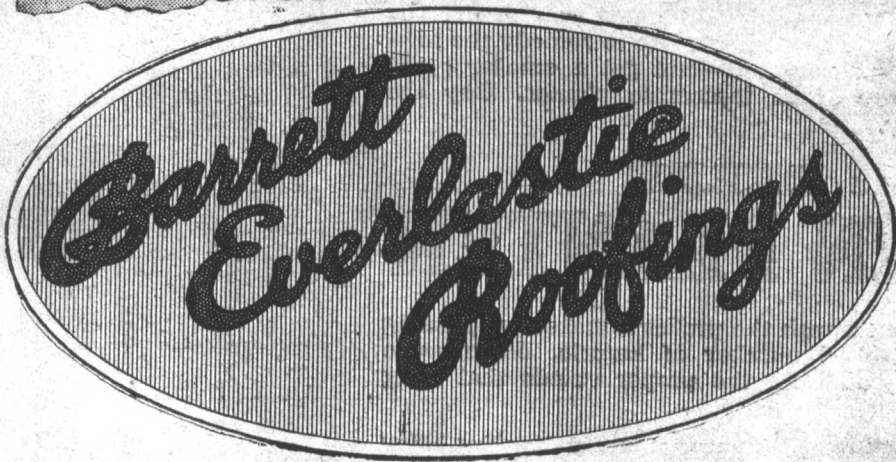


Electric Wheel Co., 35 Elm St., Quincy, Ill.



Illustration shows barn and silo covered with Everlastic "Rubber" Roofing.

The picture below shows the effect secured with Everlastic Tylike or Multi-Shingles.



Inexpensive, durable and easy to lay—

BARRET EVERLASTIC ROOFS are staunch, durable, handsome and moderate in cost. They can be laid quickly and easily by unskilled labor—a big item in these days.

With two styles of *roll* roofing and two types of *shingles* from which to choose, you can use Everlastic Roofings to good advantage on *every* steep-roofed building—residence, barns, silo, and out-buildings of all kinds.

Both styles of Everlastic Shingles and one of the Everlastic Roll Roofings are surfaced with real crushed slate in the natural rich shades (red or green). These colors are permanent and very beautiful. These roofs require no painting.

For buildings where a plain-surfaced coloring is wanted, the popular Everlastic "Rubber" Roofing will give you a dependable roof for little money.

Before purchasing your roofing materials, write nearest office for our illustrated booklets describing the styles of Everlastic you prefer.

Everlastic Multi-Shingles—(4-in-one)



Made of high-grade felt thoroughly water-proofed and *surfaced with crushed slate* in beautiful natural slate colors, either red or green. Laid in strips of *four shingles in one* at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Needs no painting.

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Made of the same durable slate-surfaced (red or green) material as Everlastic Multi-Shingles, but cut into individual shingles, 8 x 12³/₄ inches. Laid like wooden shingles but cost less per year of service. Need no painting.



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A high-grade roll roofing, *surfaced with genuine crushed slate* in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.

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A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade water-proofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Everlastic "Rubber" Roofing is one of our most popular roofings. It is tough, pliable, elastic, durable and very low in price. It is easy to lay; no skilled labor required. Nails and cement come with each roll.



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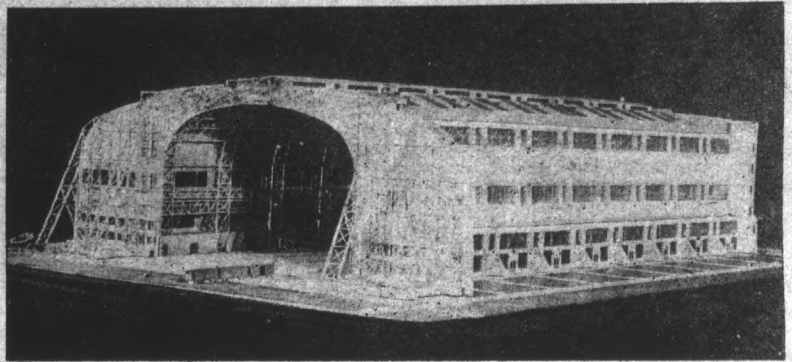
Halifax, N. S.

Sydney, N. S.

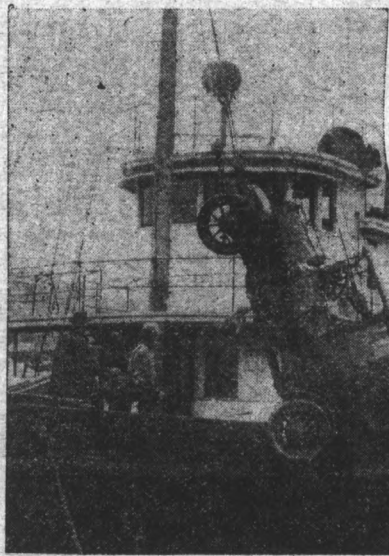
WORLD EVENTS IN PICTURES



The glamor, the romance, and the tragedy that encompassed the lives of the original sextette a generation ago promises to be revived in the musical comedy "Florodora," which the Shuberts are now planning to stage in New York.



Model of the U. S. Navy's giant new hangar for trans-Atlantic airships to be erected at Lakehurst, N. J. The hangar will hold one ten-million cubic foot airship and several smaller ones.



New York police are successful in raising an automobile which had plunged into Sherman Creek.



Washington oculist restores Viscount Grey's sight through the removal of a decayed tooth.



Admiral Benson leaving the White House following his appointment as head of U. S. Shipping Board.



These volunteer women workers are editing and publishing, under the sponsorship of Red Cross, the "Washington Beacon," a periodical for sightless soldiers, and the only hand-made magazine of its kind in the world.



Twins furnish clue which led to trapping of private detectives employed in the famous Bergdoll case.



Water football as it is played at Ashbourne, Derbyshire, England, furnishes a game that is full of thrills and good exercise.

Shall We Inventory Our Waste Land *(Continued from first page)*

sider the other 18,000,000 acres. What, grow crops on jack-pine skins, where there was nothing but sand, or in swamp land where you would need a rowboat to get around? The idea was ridiculous. In other words, Mr. Citizen politely told anyone who suggested such a thing that he was a liar.

Then came a second period a few years ago, when the pendulum swung the other way. A number of men with an investigative turn of mind began making experiments with some of this unused sand land. In some cases the results were highly successful. At once Mr. Citizen threw his hat into the air and began talking about how these Michigan deserts were to bloom with roses, or something of the sort. Of course, the fact that many of these experiments failed was lost sight of for the time. Mr. Citizen was too busy with his whoops of joy to notice any little things like that.

Occasionally various individuals urged the state immediately to launch some scheme for "opening up the gold mine." They were willing to set forth with pick and shovel to seek pay dirt, or else organize that stock company. But somehow these men did not get far with their efforts. Mr. Citizen, after the first wave of enthusiasm, had settled into a sort of lethargy. We had 12,000,000 acres of perfectly good farm land. Why get more? Besides, how were we to go about the task of reclaiming these tracts? Since no one was ready with a workable plan, nothing was undertaken.

Now the point is that Michigan has lost its timber and must have more; when labor conditions once more become normal the state is very likely to want those additional arable sections, whether cut-over, sand or swamp. Therefore, it is up to Mr. Citizen to do something about it. Yet what does Mr. Citizen—any citizen—know about the problem? Who can say what cut-over land should be reforested and what should be devoted to agriculture? Who can name the sections where sand soil may be made to "bloom with roses" and the sections where it is hopelessly barren? Who can declare with authority that the swamp areas could be drained thus and so and made to yield return in muck farming? It is safe to say that not a soul within the state could answer these questions.

Therein is the reason why the Michigan waste land question always has been a poser for the legislature. The information simply was not to be had. Whenever the issue was brought up, various interests at once took a hand. These interests could not agree on the course which ought to be followed. The advice handed out to the legislature was hopelessly conflicting. What was the poor representative or senator to do? Just because he happened to hold a seat in the state's law-making body, he did not have access to any more complete or more accurate information than anyone else. What agricultural and forestry experts, trained economists and experienced business men could not tell him, he could not be expected to know. The legislator did not know. Nobody knew.

Agitation upon the subject finally resulted in an act appropriating sixty thousand dollars for the purpose of a soil survey, but our entry into the war interfered and since then the project seems to have willingly been forgotten by the authorities. Hence the inaction which exists at present is just as dead-end as that which prevailed before this particular body of law-makers was persuaded to pass such an act. Mr. Citizen still is scratching his head about that gold mine.

Now, however, members of the Michigan division of the Academy of

Science have concerned themselves with the problem. These men have realized its enormity. They are aware that no one is in a position to speak with authority about a plan of action. Therefore, a committee composed of professors from the faculties of the Michigan Agricultural College and the University of Michigan was appointed last year to investigate. University of Michigan members of this committee are Dr. Filibert Roth, professor of forestry, and Dr. P. S. Lovejoy, assistant professor of forestry. M. A. C. is represented by Dr. M. M. McCool, soils; Dr. E. A. Bessey, botany; Dr. W. O. Hedrick, economics, and Prof. J. S. Cox, farm crops.

After several meetings the members

act as chairman, speakers will be Dr. McCool, also of M. A. C., and Dr. Roth and Dr. Lovejoy, of Michigan University. Professor Lovejoy has recently finished a personal survey of the northern part of the state and will present the general subject of the utilization of this land. Professor McCool will consider the soils phase. Dr. Roth will discuss forest fire prevention, while Professor Cox will take up the phase of the agricultural value of Michigan's cut-over lands.

The problem is probably the most important ever attacked by the Academy. How the movement will result cannot be foreseen, but its possibilities are almost limitless.

The most pressing question is that

grasping promoters have induced many a workingman from the cities to part with his hard-earned savings for a patch of sand which never could make him anything but a poor man. The state could not undertake an effective campaign against such swindlers because the evidence was not available. Of course, any sort of a survey will meet the opposition of land dealers of shady motives, but it should receive the hearty support of the honest.

There is also the question of labor. Right now, when men to work the farms can be had at scarcely any price it is quite unlikely that the state should desire to push any great reclamation projects in the near future. But the economic situation cannot remain forever as it is now. The survey, if it be at all complete, will take many months. Perhaps by the time it is finished Michigan will be in dire need of the information it will supply.

In his discussion Professor McCool will take up the possible scope of the survey as it affects soils. Aspects which may be included are soil classification, drainage courses, topography, land eroding, present state of productivity with explanation for such conditions, composition, amount of land utilized, possibilities of unused land and recommendations for soil improvement. The survey would be especially valuable as a basis for farm management and systems of farming. Methods which proved successful on soil of a certain type in one section would then apply to soil of that type in any section. Besides its purely agricultural phase, it would be helpful in road construction, control of the water supply and industrial development.

Should the survey finally be determined upon, it is almost certain that the agricultural experiment station under the leadership of Dean R. S. Shaw of M. A. C., would be placed in charge. In fact, only recently has our college succeeded in efforts to secure the cooperation of the United States Department of Agriculture in beginning such a survey on a small scale in Michigan. This coming summer two men from the soils division of M. A. C. and at least one from the government bureau of soils will commence the work. The decision of the United States agricultural officials is especially significant because it seems to show that the federal government is ready to lend a helping hand. A small amount of classification of soils in the southeastern part of the state has already been done and this naturally will be given a decided impetus. The preliminary survey, it is believed, will go far in insuring a complete one later, by indicating the method and the results to be expected, as far as soils are concerned.

Of course, any attention paid to the question of drainage of swamp land will coincide with a movement already launched by the muck farmers of the state. Unused swamp areas comprise about 4,000,000 acres.

However, predictions about the exact direction the movement will take are to a great extent speculative. From consideration of the facts here set down, the situation seems to call for action of some sort. It is only because the whole problem is so vast and because the ideas held by most persons as to its aspects are so vague, that agricultural leaders and scientists have approached it so cautiously.—H.

Scour off all the dead bark on the fruit trees which besides looking unsightly, is a harbor for a great variety of insects and affords numerous crevices for water to stand in. Soft soap and water is an excellent wash for



Cut-over Land in Alger County which has been Utilized for Sheep Grazing.

of the committee have become convinced in their own minds that the first logical step in the whole matter is the institution of a comprehensive economic, agricultural, soils and forest survey. Such a survey would clear up the question for all time. We should know just where we stood upon the matter. Whenever any plan was proposed which concerned these waste areas we should be able to place our finger directly upon the data, which applied. We should not be working in

Of course, the question of the large



Some of the Fertile Land of Ontonagon County Covered with Second-Growth Timber.

the dark. A good business man takes inventory. Why not the state of Michigan?

But the matter will not stop with the conferences of the committee. The state branch of the Academy of Science, comprising several hundred men versed in every field of scientific research, will take up the question as a whole at its annual meeting at Ann Arbor on March 31-April 3. On Thursday night,

April 1, an entire evening will be devoted to its consideration and, according to present plans, the following afternoon will be thrown open to a general discussion which will be led by political, agricultural and business leaders in the state—men interested in the practical application. In addition to Professor Cox of M. A. C., who will

land holdings in the upper peninsula must be considered. Thirty-two men own forty-seven per cent of the land, or more than 5,000,000 acres. They may or may not be interested in forest conservation. Probably they are, because most of the land has been stripped and is worth very little in its present condition, whereas if it were reforested its value would at once begin to rise.

Again, with respect to the soil situation, it is definitely known that parts of the waste land can be utilized and parts can not. It is known that Roscommon county's soil probably never will become productive to any great extent, while there is fine clay loam in Ontonagon county. But this knowledge is limited. As a result a few trees,



HE RAISED MEN AND WOMEN.

A NEIGHBOR of mine never has accumulated much money. His farm is a small one and not overly productive. He never has dressed very well, and his wife never had a silk dress to my knowledge. This man never held any very prominent office. One term he served as justice of the peace, but aside from that I never knew of his being elected to any place of public trust.

But this father and mother did raise men and women. They had seven children, five girls and two boys, and they are all citizens of the highest type. Some of them are on the farm; others are teachers in the great metropolitan schools of New York, and one is a civil engineer in the employ of one of the largest railway lines of the country. The old man is now well past eighty and proud of his success. He never has been what the world would call a successful man, but as a matter of fact, the world never will know just how much it owes to him. He has left his impress on his time most effectively.

And the fine part of it is, those boys and girls, now men and women grown, all recognize what their parents have done for them. If you were to speak to any one of them about this, you would hear something like this:

"Father taught school himself in his younger days. In fact he taught in our own district in the winter a number of terms. This was an advantage to us. He always attended to it that we had our lessons, and we had the best of books and papers all the time on the table. Father often had literary exercises at the schoolhouse and when he thought we were getting tired of that, he would urge us to go around to the homes of the neighbors and hold little meetings with the boys and girls there. We had music, some readings and pieces to speak. He urged us to think for ourselves and learn all we could about the farm and the out-of-door life that we could. When old enough we were sent away to high school or normal school and both father and mother did all they could to help us along. Mother kept us well clothed. We did not always have the finest cloth in our clothes but it was good and clean. We kept some sheep and their wool made our clothes and some besides. We owe everything to father and mother."

And every year there is a home-coming. No matter where the boys and girls are, when the call comes they rally at the old farm home. It is a great day, a day of telling over the stories of olden times and enjoying together the meeting together once more.

Sometimes in counting up the wealth of the nation we bring in many things that do not amount to half as much as this old man's crop of boys and girls. Why is it we always think in terms of dollars and cents when reckoning up our resources? It is so, and yet, money and land and stock and bank accounts are all so shortlived! We have them now; a day or two more and they are gone. But integrity on the part of the boys and girls we raise, good citizenship, kind, true and loving hearts are of a thousand times more value than any material comforts we may possess.

This is no fancy story. I can lead you right to the door of this good farmer man; and I tell you one thing, you will have to be quick at thinking and up-to-date in your knowledge of current events to keep up with him. With all his white hairs he lives in today and the world is better for his presence among us.—E. L.



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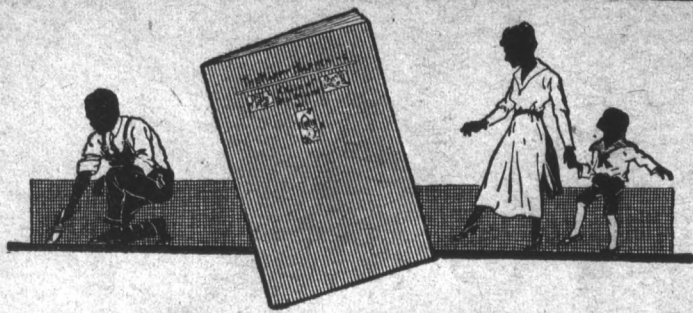
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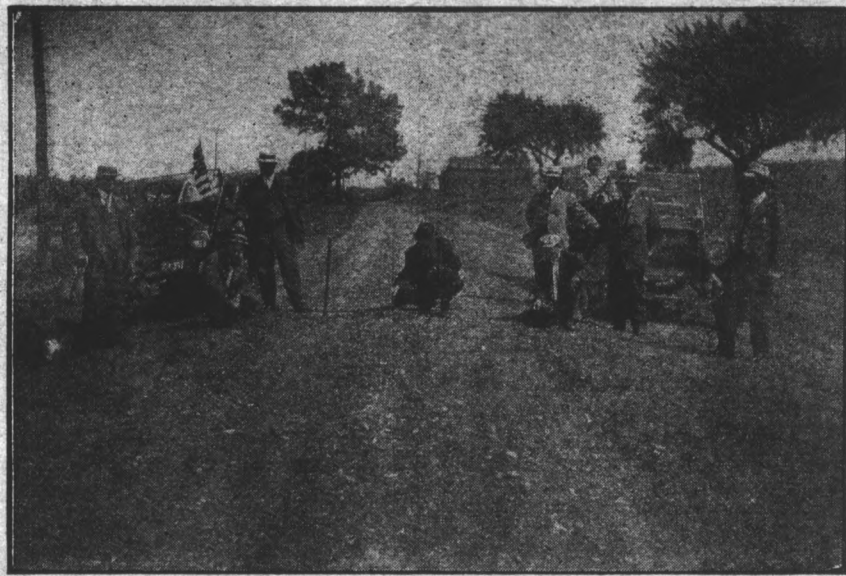
Paints

Getting Out of the Mud

By J. H. Brown

THE history of highway building a sermon in his day. But he told us in Michigan of course commenced with the advent of the first pioneers long before its admission into the Union in 1837. During the years from 1825 to 1836 the Detroit and Chicago turnpike was laid out, a portion of the "Old Territorial Road" from Ypsilanti through Jacksonopolis, Marshall, Battle Creek, Kalamazoo, Paw Paw to Lake Michigan blazed through and fixed up so that it was passable in spots during the dry seasons of the year. Battle Creek and Kalamazoo were then known as Milton and Bronson, and there are today relics and corduroy bottoms still left as reminders of what the oxen chauffeurs had to contend with that generally

that afternoon, after Horatio had still-ed his voice and quieted down his most effective gestures, that he was most emphatically for good roads, though he would never be fool enough to go and buy one o' them gol dinged chug wag-one, even if they would go right along on a nice smooth road. And so it came to pass hereabouts and elsewhere in Michigan where Horatio Earle attended farmers' institutes that he preached the gospel of good roads very effectively. The moral of his sermons got under the skin in many neighborhoods and Horatio, like John the Baptist, helped prepare the way for making the road paths straighter and wider and deeper and



Inspecting the First State Reward Road Constructed in Kalamazoo County.

kept them on low gear and only once in a great while on high for a very short spell. harder and smoother than the most progressive pioneer farmer ever dreamed of seeing them in all his born days.

But about ten years ago things began to happen here and there in lower Michigan along the main roads and in a few of the by-ways. Horatio Earle in those days was engaged to take a whirl over the state as a farmers' institute lecturer and to impress upon the farmers the necessity of beginning to think about ways and means of commencing township from New Buffalo to "The to get ready to fix up the mud roads of Michigan where they needed it badly. nagon.

And the farmers by pairs and dozens here and there looked upon Horatio and favored him over all others; for he was fair to look at. And each farmer thought Horatio was looking at in road inspection to take photographs



After Eight Years of the Heaviest Wear this Wayne County Road is as Good as Ever.

his neighbor on the other side of the church pew, because the father of good roads in Michigan "could see two ways to once," as one farmer remarked to the first day he heard Horatio speak from the old country church pulpit. This was a sandy loam neighborhood. The honored edifice and had heard many

(Concluded on page 512).

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We must have a department of agriculture conducted for the farmer by men who really know farming from the furrow to the crop. It should be the intention of the national government at Washington to make farming conditions such that there would be fewer tenant farms and more owned farms".

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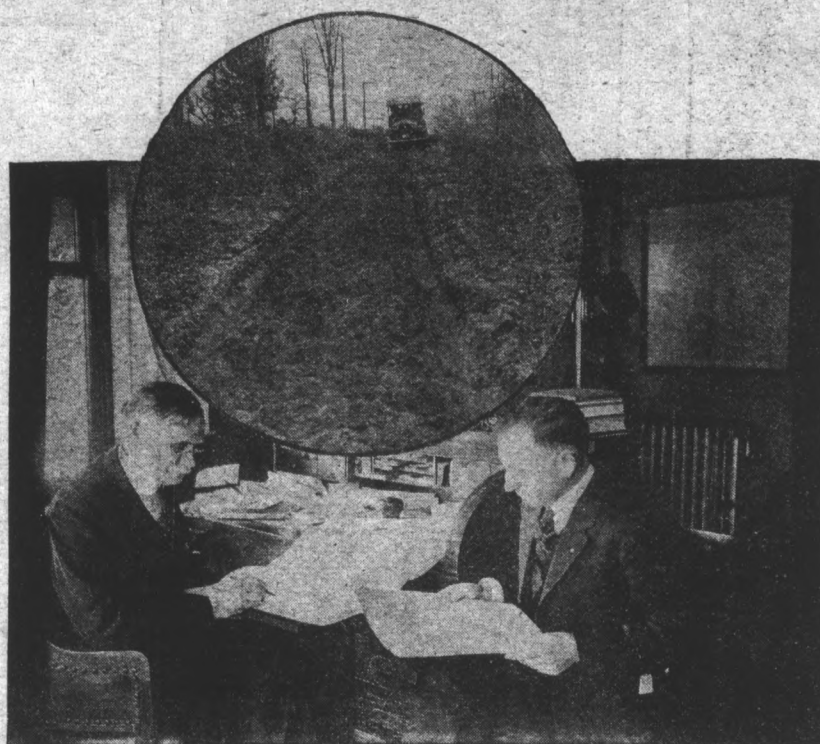
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road was graded and graveled under
the personal direction of W. M. Bry-
ant, a shoe merchant of Kalamazoo,
who was then the first chairman of
Kalamazoo county's newly organized
road commission. Mr. Bryant became
a noted road builder and was later on
made field secretary of Michigan State
Good Roads Association.

In the picture Mr. Bryant stands on
the left side with a spade in his right
hand. Mr. Rodgers is measuring the
depth of compacted gravel in the cen-
ter of the road bed. Road Inspector
W. W. Cox (wearing a cap) is holding
the end of the steel tape and measur-
ing the width of the gravel bed. This
is one of the first strips of state re-
ward gravel road we drove over about

mer that we drove our first automobile
over the old territorial road to Detroit.
When we got into the soapy stuff in
the road between Ypsilanti and De-
troit it seemed as though we could
never get out. Soon after the new
strip of concrete, shown in the second
picture, and built by Ed. Hines and his
associates, was completed and we
found the hollow east of Eloise filled
in and a fine road bed that stands to-
day as good as the day it was com-
pleted.

What a change has taken place in
the roads everywhere in Michigan
since those days of less than a decade
ago. And this change has been in
charge of two men who have done
more to pull Michigan out of the mud



State Highway Commissioner Rodgers and Chief Engineer Cox in the For-
mer's Office. Insert Shows what was once one of the Worst of Southern
Michigan's Roads, but which has since been made Good through Commu-
nity Effort.

ten years ago. From that time to this
nothing has been done to it except to
spread over it an extra coat of gravel.
It has been given terrific traffic during
the last three years and since Camp
Custer took it in, yet it is wonderful
how that piece of road has stood the
punishment. It needs repairing now,
but nothing more than a good thick
coat of screened gravel, well rolled
down and compacted. The road bed
now looks almost as it did ten years
ago, and this picture will bring up
memories of some of the first pioneer
road engineering in the days when
some farmers along the road were
more or less inclined to scoff at road
building and berate the fellows who
were driving pesky automobiles and
scaring horses to death.

And it was during that same sum-

mer that we drove our first automobile
over the old territorial road to Detroit.
When we got into the soapy stuff in
the road between Ypsilanti and De-
troit it seemed as though we could
never get out. Soon after the new
strip of concrete, shown in the second
picture, and built by Ed. Hines and his
associates, was completed and we
found the hollow east of Eloise filled
in and a fine road bed that stands to-
day as good as the day it was com-
pleted.

And in less than ten years farmers
have one by one bought one o' them
pesky automobiles until now there are
thousands and thousands of four, six
and eight-cylinder motor cars on Mich-
igan farms. And now, also, the gas
tractors and motor trucks are being
utilized in almost every neighborhood.

"And still there's more to follow."

Sunshine Hollow Items

By Rube Rubicon

BILL BARNES says that there ought
to be more stringent laws govern-
ing dogs. Mike Carter's airedale took
the seat out of Bill's all-wool pants
when he tried to lift a pullet from
Mike's hen roost last Tuesday night.

Sunshine Hollow has been visited by
little Arctic birds which came down
here because it's so homelike for them.
Folks have been arguing about what
they eat during the winter in the Ar-
ctic. Some say its seeds out of pine
cones. Others favor fleas off from the
polar bears.

Uncle Sidney Soaper is a hunter and
trapper. Yesterday he came down to
the village smelling like a war profit-
eer. He had seven skunks and is say-
ing his fur money to take a trip to
Chicago.

Four prominent ladies in our district
have organized a club called the F. F.

They were much embarrassed when
we found out it meant Fat Four. The
ladies, however, are built just right.

Altie Jones says he can't drink pink
lemonade because it makes him look
like a thermometer. His kid brother
says he could wear a double-barrelled
shotgun for a pair of pants. Mrs.
Jones has been doing some repair
work on him. He is being relined with
buckwheat cakes. Home-made sausage
is also used for interior decorating.

Some mischievous boys pushed Aunt
Myra Kinsting's little hen house over
on the front side. It wouldn't have
caused any trouble but she was inside
hunting for eggs. She peeked through
a knot hole in the floor and got the
names of every last one of them. She
sues everybody that causes her trou-
ble like that. Some folks started to
call her Susie instead of Myra a long
time ago.

BODY BUILDING CONTEST.

WITH the approach of April 1, the closing date for entries in the Annual Body Building Contest of the Michigan State Fair, G. W. Dickinson, secretary-manager of the fair, announces the 1920 contest will be the largest ever staged.

Interest in athletics stimulated by the physical training the boys received in the concentration camps, enthusiasm aroused through the interest in the 1920 Olympic games and the general tendency of the public to give more attention to the welfare of the body, is responsible for the extraordinary number of entries of both men and women being received, according to the fair executive.

The period of traveling will extend over five months this year, the contest opening April 1 and closing September 1. Rules of the contest provide that each entrant shall file an entry blank not later than April 1, showing their physical condition at that time. During the following five months each contestant follows a scientific course of physical training, and endeavors to make as much headway in physical development as possible.

On September 11 all entrants appear at the State Fair before an examining board of three of the greatest physical culture experts in America, headed by Bernarr McFadden, of New York. Each contestant is given a thorough physical examination and prizes are awarded to the ones who make the most pronounced advancement.

"One does not need to be physically sound to enter this contest," Mr. Dickinson points out. "The prizes do not go to the contestant in the best physical condition, but to the one making the greatest improvement in the five months."

GARDENS CUT LIVING COSTS.

TOO many people take it for granted that they can do nothing about the cost of living. They think the job of reducing it belongs to somebody else," says E. T. Meredith, Secretary of Agriculture.

It may be true that they cannot do very much toward reducing the price of commodities generally, but there are many of them who can reduce their own living costs very materially by a very simple method.

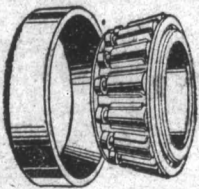
"The home garden is the answer. The garden cannot do it all, but it will help more than one is likely to realize on first thought. The garden—and it need not occupy a large piece of ground—will produce all the fresh vegetables the family needs during the summer and fall. It can be made to produce all the potatoes and beans they need for the winter. It will produce a considerable surplus of all kinds of vegetables that can be saved for winter use by canning and drying; and all of it can be produced at very moderate cost, compared with what would have to be paid for them in the market or at the grocery store.

"This way of reducing the cost of living is open to every man, every woman, every child who can get the use of a plot of ground.

"The same patriotic urge may not exist this year, but the personal necessity is even greater than it was in the war years.

"Reports received by the United States Department of Agriculture indicate that commercial vegetable gardeners will materially reduce their plantings this year. They see no way of getting enough labor to carry on their usual operations. No adequate remedy appears for the situation as a whole, but the individual can find the remedy for his own household in planting and cultivating a home garden."

Do You Know—



STANDARD PRACTICE

The use of Timken Tapered Roller Bearings at points of hard service in the great majority of motor-vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automotive industry.

that the motor truck has been one of the greatest factors in promoting the building of good roads?

that by proving the actual increase in farm profits due to better haulage over *poor* roads, the truck has demonstrated the great commercial advantages that *good* highways offer?

that in the development of a truck that could meet and conquer all the obstacles to motor haulage on country highways, the "power delivery mechanism" has carried a greater responsibility than any other part of the truck?

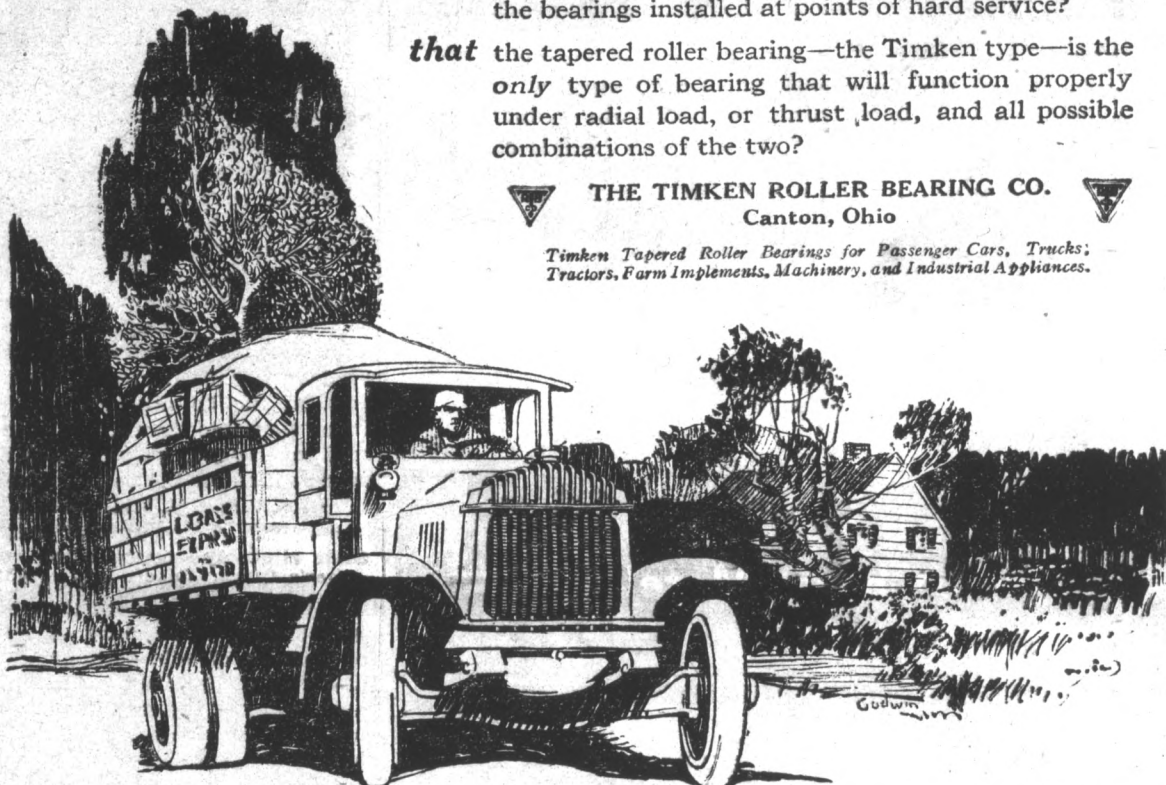
that the remarkable performance of the working parts of the modern motor truck depends largely upon the bearings installed at points of hard service?

that the tapered roller bearing—the Timken type—is the *only* type of bearing that will function properly under radial load, or thrust load, and all possible combinations of the two?

THE TIMKEN ROLLER BEARING CO.

Canton, Ohio

Timken Tapered Roller Bearings for Passenger Cars, Trucks, Tractors, Farm Implements, Machinery, and Industrial Appliances.



TIMKEN BEARINGS

AUCTION SALE

43 High Grade Holstein Cows
FLINT, MICH.

Apr. 8, 1920,--Sale Starts 1 P. M.

Having sold our farm, and being forced to vacate the premises, we will sell 43 very high-grade Holstein cows to the highest bidder. This is the oldest and most prominent herd in this section of the state, having been built up using purebred sires for a great many years. These cows are in various stages of lactation, nearly one-half having freshened recently.

They have been selected with great care, and dairymen wishing to buy heavy producing, fine individuals, with very large, well-balanced udders, will make a mistake if they do not attend this sale.

The sale includes the present herd sire, Johan Pauline Lad, No. 127548, who has a 30-lb. own sister. This bull is sired by Johan Hengerveld Lad, one of the most popular bulls of the breed. Dam, Edgelake Pauline De Kol, 26.90 lbs. butter in seven days at eight years.

Some of these cows are sired by the above bull, and nearly all are bred to him. Also several young sons of the above sire, and out of registered cows, will be sold. Our farm is situated three miles west of Flint on River Road. Free transportation from end of Glenwood car line, or Phone 1005 W. Terms of Sale, 10 months time on approved bankable notes.

MORTIMORE CARTER & SONS, Prop.

FARMERS ACCOUNT BOOK FREE

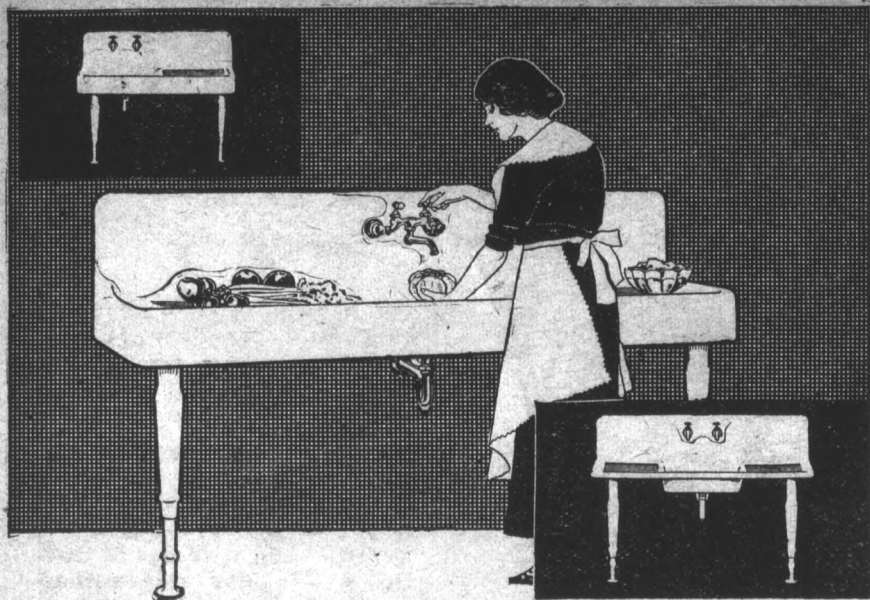
A record book you will use every day. Write for it. Also for Silo Filler Catalog. For speed in silo filling, you want a Rosenthal. Extra large throat, cutter head with four knives. Three sizes, self-feed with automatic speed control. **ROSENTHAL SILO FILLERS** are the most economical you can buy. Find out why. Get catalog and record book now. Rosenthal Corn Wacker Co., Box 2, Milwaukee, Wis.

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Ten dollars cheaper than Red and the best substitute. Fits right into the rotation. Ask for our catalogue telling "How to Know Good Seed" and sweet clover chart explaining all about this wonderful plant. O. M. SCOTT & SONS CO., 474 Main St., Marysville, Ohio

Seed Corn Selected seed of the following varieties, testing 90 percent or better. Early Butler, Pride of the North, Leaming, White Cap Yellow Dent, Mammoth White Dent. Price \$3.00 per bushel. Bags extra at 60 cents each. Sample ears at 25 cents each. THE HORN BROS. CO. MONROEVILLE, OHIO.

WANTED: Every farmer to try Puritan Worm Tablets for hogs. Send me \$1 and I will send a liberal trial order, including free a \$1 box of hog Physic tablets. EDW. L. LITTE, Lynchburg, O.



Turn Part of Worktime Into Pleasure Time and Make Worktime Pleasanter

THAT'S exactly what you do when you free yourself of water carrying drudgery and install a "Standard" one-piece white enameled kitchen Sink. Hot or cold water instantly when wanted, not after a 50 or 100 foot trip, at times through cold or rain and stormy weather. "Standard" Kitchen Sinks are as much a necessity in farm kitchens as elsewhere.

Consult a Contracting Plumber or write for color printed catalogue "Standard" Plumbing Fixtures for the Farm. It describes and illustrates all types of Home Plumbing fixtures.

Standard Sanitary Mfg. Co.
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"Standard" KITCHEN SINKS

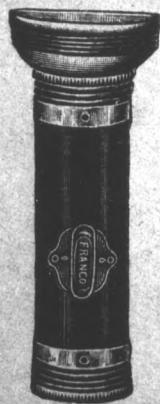
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of the wheat and barley food

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Grape-Nuts is economical

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If you will send us two yearly subscriptions your own may count as one, accompanying order with \$2.00 remittance, we will send you this Handy Flash Light ready for use all charges prepaid.

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

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Strawberry Plants \$3.75 per 1000

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

STRAWBERRY

Plants at \$4.00 per thousand and up. Have the best kinds, also Raspberries. It will pay you to write for my list. W. M. JOY, Route 3, Allegan, Michigan.

Woman's Interests

Sure, You Are Going to Vote!

WHAT do the political parties stand for today? No one has been able to tell so far, even political editors of big dailies profess dense ignorance.

But the political parties are here, and we new voters must perforce accept conditions as they are until we can change them. Thank goodness the days of dyed-in-the-wool democrats and republicans are over, and intelligent men and women are voting for the man, not for the party. That makes it easier for us, for if men who have been in politics all their lives can not tell what their party stands for, what can be expected of us? We can tell, though, what the man stands for, for his deeds speak for him.

Begin right in your own township, or village or precinct, whatever your political unit happens to be. Perhaps the justice of the peace, the supervisor, or the town clerk is your nearest neighbor. Has he given you faithful service? Is he honest, clean, fearless? Does he stand for American ideals? If he does, vote for him regardless of what political tag he attaches to himself. Carry it on into the county. You have read your county papers, even if you haven't time for the dailies. You know the county gossip, and you can judge pretty well of the sort of men who have filled the county offices. Have they been actuated by the highest motives? Have the decisions of the judges been on the side of right, or on the side of vote getting? Is there anything shady about the official conduct of any of the crowd in the county building? Those are the things for you to consider when election time comes around.

What the country wants just now is men who are more concerned over do-

ing what is right than over the spoils of office. If you know any such get them into office. Get out to the primaries and nominate them. If the old parties don't put them up for office, do it yourself. That is what primaries are for. Get the politicians out and put plain men and women in. Then we may hope for a government for the people and not for the group.

Herbert Hoover must be satisfied on thirty points before he can line up with either party. What hope is there, then, for women who have never given the subject any study to know whether they are for or against the administration? Most of us would have to be satisfied on about three hundred points before we could say. We'd like to know why we could get sugar for nine cents during the war, and now that the armistice is a year and a half in the past we have to pay twenty cents. We'd like to know why we pay six times the old price for pure wool, and get shoddy. We'd like to know why it costs as much for a pair of shoes today as it used to for a suit of clothes. And we want the real reason. We don't want to be told it is because women spend the money and that if they would refuse to buy prices would go down. Of all the asinine reasons to advance, that is the limit. Fabric will wear out, and in the name of sheetless beds, what are you going to do?

We want to know if politics is responsible for the present chaos. Or is it labor? Or capital? And if it is mismanagement or exploitation of either labor or capital, how can it be remedied? These are only a few of the things the new voter wants answered. Neither existing party seems able to say. But we intend to find out.

DEBORAH.

Recipes for Easter Cakes

By L. M. Thornton

EASTER would not be Easter without its dainty and delicious Easter cake and any of the following recipes will make one fit to charm the palate of the most exacting.

Easter Cake.

Put one-half cup of cocoa and one cup of sugar into a bowl and add one-half cup of water. Beat the yolks of two eggs, add these to the cake, with one teaspoon of baking-powder sifted with one-half cup of flour. Season with vanilla, fold in the stiffly beaten whites of the eggs. Line two jelly tins with paper, pour in the mixture and bake twenty minutes. Dampen a cloth in cold water and lay over kitchen table, set cake tins on this three minutes before removing cake. Dust top of cake very liberally with confectioners' sugar and lay second cake on it. Frost top, sprinkle liberally with coconut and decorate with small colored candies put on in the shape of narcissus blossoms or an Easter bell.

Snow Cake.

Beat the whites of five eggs until dry, then beat in three-fourths cup of granulated sugar. Sift together one-fourth teaspoon soda, one-half teaspoon baking-powder, and one-half cup flour. Add any fruit seasoning or vanilla, but do not beat after sugar is beaten into egg. Pour half the mixture in gem pans and over the top lay

very thin shreds of citron and thin slices of candied cherry. Over these pour the remainder of the mixture, dust top with pulverized sugar and bake.

Lily Layer Cake.

Cream together three-fourths cup of shortening and one cup sugar. Beat the yolks and whites of two eggs separately and add to the sugar, stir in one-fourth cup milk and one and one-half cups flour sifted with one rounded teaspoon of baking-powder. Line two jelly tins with paper, put in the cake dough and bake. Frost with white icing.

Fruit Squares.

Cream together one-half cup shortening and one cup of sugar. Add two beaten eggs and four teaspoons of milk. Put two tablespoons of preserved cherries, two of chopped candied peel and two of chopped figs through meat grinder. Stir these into the cake with sufficient flour to make a stiff batter, sifted with two teaspoons baking-powder. Spread on floured board and pat down until about three-fourths inch in thickness. Cut in squares, bake in moderate oven and frost with the following: One cup of brown sugar put in saucepan and cooked until melted, adding a little sweet milk to prevent burning when first put over fire. Cook until it spins a thread. Beat the

white of an egg until dry and then pour into the hot sugar, beating all the time. Pour over top of cake, smooth with knife and set away at least twelve hours before cutting.

Cream Cakes.

Cream together one cup of shortening, two cups of pulverized sugar, and the beaten yolks of four eggs. Add one cup of milk, one and one-half cups of flour sifted with two teaspoons of baking-powder, one-half teaspoon salt, one-half teaspoon each of grated orange and lemon peel, the stiffly beaten whites of the eggs and another cup of flour. Butter gem tins and in the bottom of each put a small tablespoon of the cake mixture. Bake about fifteen minutes, remove from tins, ice each cake and in the middle of each put a small piece of citron cut in the shape of a flower petal.

Date Layer Cake.

Cream together one-half cup shortening and one cup sugar, add one beaten egg, one-half cup milk and two cups flour sifted with two teaspoons baking-powder. Bake in two layers and put together with the following filling: To one cup of dates put through meat chopper, add one cup boiling water and cook five minutes. Stir in one tablespoon corn starch dissolved in a little cold water and one tablespoon sugar. Cook until it thickens, add one tablespoon of lemon juice, remove from the fire and beat until cool. Spread between layers and do not ice top of cake.

Snowdrift Cake.

To two cups of sugar add one-half cup of butter and cream. Pour in one cup of milk, add the beaten whites of four eggs, and three teaspoons of baking-powder sifted with three cups of flour. Flavor with lemon and bake in a moderate oven. May be frosted or dusted with powdered sugar just before placing in oven.

Star Cake.

Beat the whites of three eggs, add one cup pulverized sugar, one-half cup sweet milk, one-half cup cornstarch, one-half teaspoon soda, one teaspoon cream of tartar, and two cups of flour sifted together. Melt one-half cup of shortening, add one tablespoon blanched almonds, stir into cake and bake. Frost with a maple sugar frosting.

Holiday Cake.

Cream together one-half cup butter and one cup of sugar. Add one-half cup sweet milk, whites of four eggs and two cups of flour sifted with two teaspoons baking-powder. Bake in a new tin in a moderate oven. Make a thick frosting as follows: Put one-half cup stoned figs and one cup of seeded raisins in a steamer and when thoroughly softened, chop fine. Add one teaspoon vanilla, the beaten whites of three eggs, the juice of half an orange, and confectioners' sugar to thicken.

UTILIZING WHEY IN COOKING.

The following recipes were demonstrated at the Agricultural College during Farmers' Week.

Whey Salad Dressing.

One cup whey, quarter cup vinegar, one teaspoon mustard, half teaspoon salt, one-eighth teaspoon of tumeric, three tablespoons flour, one-third cup of sugar, paprika, two tablespoons of butter. Heat the whey and vinegar together. Mix dry ingredients and add, with the sweetening, to the whey. Add the fat, and cook the mixture until it is smooth and thick.

Lemon Whey Pie.

Two-thirds cup sugar, three tablespoons corn starch, one cup of whey (strained), salt, two eggs, one tablespoon fat, one lemon, juice and grated rind. Mix dry ingredients, add to the boiling whey, and cook the mixture until it is thick. Add the beaten egg

yolks, fat, and lemon. When the mixture is clear, pour it into a crust which has been baked. Cover the pie with a meringue made by adding two tablespoons of sugar and a quarter teaspoon of vanilla to the beaten egg whites, and brown in a slow oven for twenty minutes.

Whey Sherbet.

One tablespoon gelatin, four cupfuls whey, one and a half cupfuls sugar, one lemon, one cupful crushed fruit, fresh or canned. Strawberries and pineapple are the best. Soak gelatin in two tablespoonfuls of cold water and dissolve by setting the cup in a dish of hot water. Strain the whey through a cheesecloth. Add sugar and lemon juice and stir until the sugar is dissolved. Add the gelatin to the whey mixture, turn it into a freezer, pack and freeze in the usual manner. When the mixture begins to freeze, add the fruit and continue freezing. When it begins to freeze, a cupful of sour cream whipped stiff, added, will greatly improve texture and flavor.

SALT-RISE BREAD WITHOUT MEAL.

BY M. KENNEDY.

VIEWED from the standpoint of economy there is no bread made today that equals the old-fashioned salt-rising bread of our grandmother's day. With the starter, or "risin's," as grandma used to say, made of corn meal or graham, as it always used to be, the bread is very dark, but I find that by using wheat flour for the starter the bread is as white as yeast bread. Simply flour, water, salt and a pinch each of soda and ginger are the ingredients used, thereby eliminating the sugar, yeast and shortening required for yeast bread. Quite a saving, I find.

To make, scald a quart bowl and spoon, empty out water, fill half full of water that is very warm, but not hot, and add one teaspoon of salt, a pinch each of soda and ginger, stirring to the thickness of pancake batter with wheat flour. Sift flour over the top, cover tight, and put in dish containing quite warm water, setting in fireless cooker over night. Or, lacking this, set on a warm soapstone over night, covering with a warm blanket. When made with wheat flour it takes the starter from twelve to twenty hours to get light, but the warmer it is kept without scalding, the quicker it will get light. When the batter is all foamy and of an odor that declares to the nostrils that it is surely fermented, it is ready to use.

To one quart of very warm, not scalding, water add one tablespoon of salt and stir to a thick batter with wheat flour, stirring in the starter last. Sprinkle flour over the top, keep warm and it will soon rise. When light mix at once into loaves and when they have risen till they are double in size, bake the same length of time as yeast bread.

The secret of success with salt-rising bread, lies in the thorough sterilization of all utensils used, clean sweet materials and a uniform amount of heat at all times. This amount makes five large loaves.

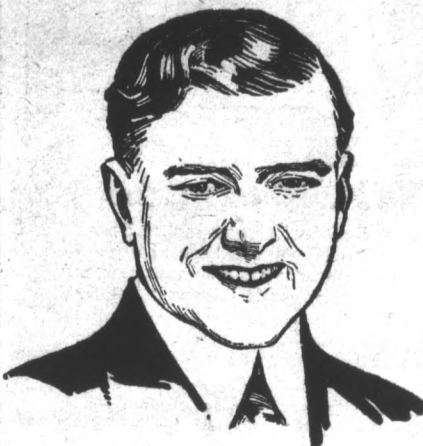
HOME QUERIES.

Pearl barley is usually used in broths and soups, and goes especially well with mutton broth. It should be cooked at least two hours. It contains 77.8 per cent starch, 8.5 per cent protein and 1.1 per cent fats. As a baby food it is used instead of oat meal when there is a tendency to looseness of the bowels.—Subscriber, South Haven, Michigan.

The Home Account Book issued by the Michigan Agricultural College may be had for thirty cents. The advance in price from twenty-five cents was made necessary by the increased cost of paper and labor.

You Are Welcome To This Ten-Day Test

All Statements Approved by High Dental Authorities



See What it Does for Your Teeth

This is to urge a ten-day test of a new, scientific tooth cleaner.

You have found, no doubt, that brushed teeth still discolor and decay. The methods you use are inadequate. There is now a better way.

The cause of most tooth troubles is a film. It is ever-present, ever-forming. You can feel it with your tongue.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

That film is clinging. It gets into crevices and stays.

So, despite your brushing, it may do a ceaseless damage. Teeth are safer, whiter and cleaner if that film is absent.

Science Now Combats It

Dental science, after years of searching, has found a way to combat film. Years of careful tests under able authorities have amply proved its efficiency. Now leading dentists all over America are urging its adoption. It is now used daily on millions of teeth.

This film combatant is embodied in a dentifrice called Pepsodent. And a 10-Day Tube is offered to every home for testing.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

For long this method seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And that discovery opens a new teeth-cleaning era.

The results are quickly apparent. A ten-day test is convincing. We urge you to make it at our cost and learn what clean teeth mean. Let us forget, cut out the coupon now.

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The New-Day Dentifrice

Now advised by leading dentists. Druggists everywhere are supplied with large tubes.

Look in Ten Days

Make this ten-day test. Note how clean teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. In ten days let your own teeth tell you what is best.

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No. 2821—Girl's Dress. Cut in five sizes, 4, 6, 8, 10 and 12 years. Size 12 requires 3½ yards of 40-inch material. Price 12c.

No. 2815—Child's Play Suit. Cut in five sizes, 2, 3, 4, 5 and 6 years. Size four requires 1½ yards for the waist, and 2¼ yards for the rompers, of 27-inch material. Price 12c.

No. 3130—Girl's Apron. Cut in four sizes, 6, 8, 10 and 12 years. For an eight-year size, 1¾ yards of 27-inch material will be required. Price 12c.



No. 3155—Girl's Dress. Cut in four sizes, 8, 10, 12 and 14 years. For a 14-year size, 4½ yards of 36-inch material will be required. Price 12c.



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THERE is a Splitdorf Green Jacket Spark Plug best suited for every type of engine—one cylinder or many cylinders—two or four cycle—"T", "I", or "L" heads—deep or shallow plug recess—with or without water-jacketed spark plug hole—truck, tractor, stationary, motorcycle, passenger car or marine.

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EASY PAYMENTS if desired, at a small advance over our Special Factory-to-Rider cash prices.

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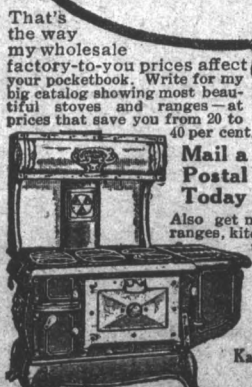
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Direct to You

Our Boys' and Girls' Page

Story of Billy the Hereford

By Charles Ruesink, aged ten years

WHEN I arrived in Adrian in company with forty-nine other calves May 18, I was sold to a nine-year-old boy named Charles Ruesink. He lived seven miles from the stock yards. He thought me too wild to draw home in a stock rack, so drove me home.

He was kind to me and wished to tame me, so he put me in a box stall for two weeks. He came in often to pet me and talk to me. I did not like to have him lead me by a rope, and pulled away from him, so he got one of the men to lead me around till I grew more gentle. While being led, I nibbled at the grass. I found afterward he was getting me accustomed to pasture feed.

During the first two weeks he fed me on alfalfa hay and ensilage, ground corn and barley, the whole oats, also half a teaspoon of salt each day. After this I was out on pasture, but was also given the ensilage and grain. I liked the green grass so well that I didn't eat much ensilage. The first of Aug-

use he took me from pasture and put me back into the box stall again. After this I had only dry feed. The ration was the same as before, only as I grew bigger he gave me more feed.

Since May 18 I have eaten a great deal of feed, 1,150 pounds of hay, 1,260 pounds of ensilage, 1,188 pounds of grain, and two pounds of salt.

Charles sent me to Buffalo the first week in December. At that time I weighed 880 pounds and was sold at auction for twenty cents a pound, or \$176. My transportation charges, yardage and commission amounted to \$5.30. The bunch of calves I was shipped with won a prize of \$50, making a premium of \$2.00 for each club member. After deducting transportation, yardage and commission charges the net proceeds from my sale amounted to \$170.70. By adding the \$2.00 premium and two prizes of \$7.50 each that I won at the fair and Buffalo show, my entire proceeds amounted to \$187.50.

Junior Livestock Feeding Contest

FOR the purpose of encouraging a practical interest among young people on farms in the feeding of cattle, sheep and swine, the Union Stock Yard & Transit Company of Chicago, offers the following prizes on animals fed by boys and girls from ten to nineteen years old:

First prize	\$50.00
Second prize	40.00
Third prize	30.00
Fourth prize	20.00
Fifth prize	10.00

Conditions.

1. All entries to be made in the name and by the feeder and filed with International as soon as possible after date when feeding period begins. Contestants are limited to two entries in any one division. Exhibitors will be required to personally select and care for their animals without the aid of an assistant.
2. Within thirty days after feeding period begins the animals must be weighed and an accurate record of feeding kept thereafter.
3. In judging these classes, quality and finish will count fifty per cent; gain twenty per cent; cost of gain, twenty per cent; and records kept and written reports, ten per cent.
4. Notice of intention to enter one or more of these feeding contests to be mailed to B. H. Heide, Secretary, International Live Stock Exposition, Union Stock Yards, Chicago, at the beginning of the feeding period, who will upon receipt of notification, mail you formal entry blanks. No entrance fees will be charged in above classes. All



Interest in Boys' and Girls' Canning Projects is Again Running High.

animals must be in place, ready for exhibition, at nine a. m. on opening day of show.

As these contests are to be kept on a short feeding basis, some assurance must be had that the animals were not on feed previous to the date of opening the contest and contestants must be ready to produce the necessary evidence if requested to do so.

Prizes in addition to the above will be announced from time to time.

HERE IS PLUCK BOYS.

TO have a catastrophe overtake your enterprise twice and then, undismayed by failure, to try a third time, requires pluck of a rather unusual quality. It is the kind that Theodore Tholke, a club boy of Nevada possesses. Last spring this boy joined a poultry club and purchased three hundred baby chicks. Soon afterward an electric storm passed over his home and all but nineteen of the chicks were killed. Theodore viewed the devastation the storm had wrought, straightened his shoulders and went out and bought one hundred and fifty setting eggs. But luck was against him, again. Scarcely had he got the eggs under hens before a waterspout caused the irrigation ditch to overflow. The resulting flood washed his eggs and nests away.

Many would have given up in despair at this point, but not Theodore. Still determined to raise chickens, he obtained more eggs and finally succeeded in raising one hundred and fifty chicks. On these he made a net return of \$142 and was awarded the state championship of Nevada.

HOW TO KEEP FIT.

OUR boys and young men are storing physical, mental and moral energy, not only for the daily duties that are coming to them now, but also for the responsibilities of the future. Those who lay by the largest reserves will be the better fitted to stand the test when it comes. The majority fail to establish sufficient reserves largely because they lack the needed information. Several million boys and young men have profited by the data gathered by the United States Department of Health and published in pamphlet form. This information is furnished free to any who may write for it. Simply send a postcard to the United States Public Health Service, 228 First Street, N. W., Washington, D. C., asking for pamphlet entitled "Keeping Fit," and you will receive a whole lot of valuable information about the care of the body, the development of muscular strength and endurance, and the vigor of manhood.

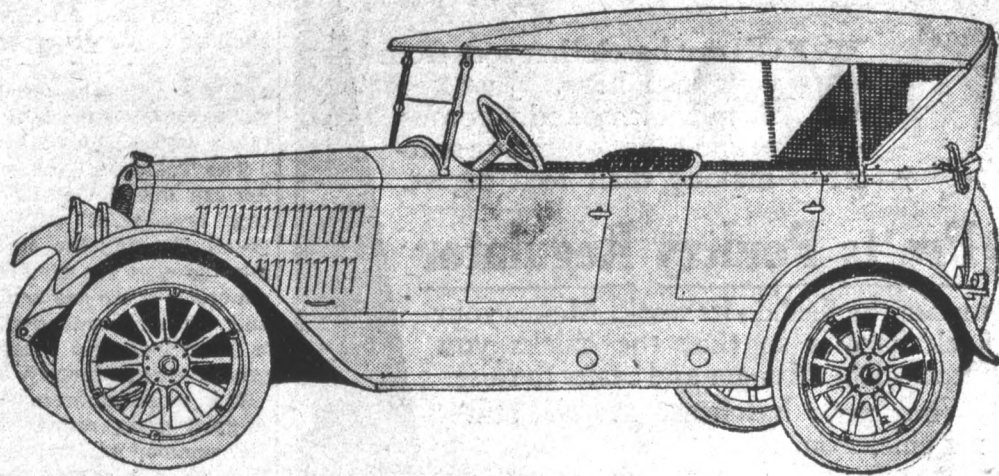
AN INDIANA GIRL'S PIG.

ON June 1 I began to feed my pig. I gave it slop morning and evening and milk at noon. On June 1 it weighed sixty-two pounds and was nearly three months old. It was farrowed March 9, 1919, and on September 1 it weighed 186 pounds. From June 1 to September 1, it gained 124 pounds, which I think is not bad for a start, as it was the first pig I ever fed. Next year I hope to do better. I expect to keep it.

I am only ten years old and never showed a pig before and had only seen them shown once, but I hope it will not be my last show.

I did not get my pig very fat but it is a big long pig and papa says it will make a very large one some day.

Papa took my pig to the fair on Sunday morning and I went on Tuesday morning so I could show. At 3:30 we showed and I won first prize, which is \$30, and first best showman in Berkshires and third best showman in all the breeds.—Margaret Barker.



A Long-Life, Economy Car

One that brings greater value

"Have you seen the new Mitchell yet?" That is the query everywhere. It started at the New York Automobile Show, grew louder at the Chicago Show.

And now the nation over, people who appreciate the latest, all urge upon their friends the advice to consider the new Mitchell before purchasing a new car.

For the Mitchell organization, which during the past few years has brought out numberless mechanical betterments, has now staged a style sensation.

And thus utility and beauty are united. While several refinements have been made in the chassis, the chief effort has been to bring about more harmonious lines.

You'll agree that it's a triumph in designing when you see this new Mitchell.

You'll note the slanting radiator, at the same angle as the windshield, and you'll note how all the lines give a new speediness in appearance.

Then you'll examine the detail of finish and wonder how such values can be included at a medium price. As you ride in the new Mitchell, you'll marvel at the roominess, the comfort, the "costly-car" feeling. And before you know it, you'll covet a car like this, and find nothing else to equal it. That is the way it is affecting other people everywhere.

So it is wise to place your order early with the Mitchell dealer, so as to insure early delivery. Orders are pouring in for this new car. You'll want yours quickly, too.

MITCHELL MOTORS COMPANY, Inc.
RACINE, WIS.

5-PASSENGER TOURING CAR
3-PASSENGER ROADSTER

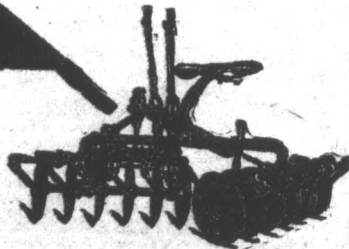
5-PASSENGER SEDAN
4-PASSENGER COUPE



"ACME" TILLAGE TOOLS

Make Perfect Seed Beds

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



"ACME" Disc Harrow
—10 Sizes

Better Tillage — Bigger Crops

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



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

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

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

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

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

Most Economical Pumping Power Known

Perkins Windmills pump more water at less cost over a period of years than any other pumping device known. Upkeep expense almost nothing.

PERKINS WIND MILLS

Direct Stroke, Wood or Steel Wheel. Back Geared Steel Mills for deep wells. Oilless replaceable bearings. Automatic regulator without springs or weights. Quiet, simple, powerful. Find out how cheaply a Perkins Mill will work for you. Write for Free Book today.

PERKINS CORPORATION, 44 Main St. Rahawaka, Ind.
24-Hour Service on Replacement Parts

Guard Your Garden

Prevention is better than cure. Keep away blight and mildew and destroy insect pests with a

Brown's Auto-Spray

Our No. 1, shown here, operates by compressed air. Half a million have been in use from 1 to 18 years. Write for free Spraying Calendar & 1919 Catalog.

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



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



Big Hatches of Hardy Chicks

YOU can hatch that sort from your own hens. Just keep them healthy and vigorous. And you know that's mostly a matter of making their feed digest.

Pratts Poultry Regulator

makes the feed do its work. Makes your flock hardier so that the chicks you hatch will be stronger and easier to raise.

When your hatches come off, start your chicks on

Pratts Buttermilk Baby Chick Food

You'll find it puts vigor into your youngsters when they need it most—in the first three weeks.

Samoset Farm, Augusta, Maine, used it last season. The proprietor, H. J. O'Hear, says:

"In feeding Pratts Baby Chick Food I find that it has eliminated the so-called baby chick diseases that we have had so much trouble with in days gone by. It has proven a bone and muscle maker, and a developer of chicks in the shortest possible time."

"Your Money Back if YOU Are Not Satisfied"
Sold by 60,000 dealers. There's one near you.

Write for Pratts New Baby Chick Book—Free

PRATT FOOD COMPANY

Philadelphia Chicago Toronto

Makers of Pratts Animal Regulator,
Hog Tonic, Cow Remedy, Dip and
Disinfectant, Veterinary Remedies.



The 1920 Sensation at \$12.45

Machine has double walls; copper tank. Sold direct from factory. Guaranteed to give satisfaction or money back.

DETROIT INCUBATORS

140 Eggs, \$12.45. Detroit Producers, 140 Chick, \$7.10. Both for Special Combination Price, \$17.50, complete. Freight prepaid to your station. Order from this advertisement or write for full description.

DETROIT INCUBATOR COMPANY

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

POULTRY

OVIE'S BABY CHICKS

They Lay and Pay!
There is more than a tingle of satisfaction when you receive Ovie's Baby Chicks, which are beyond comparison in quality, from free range flocks. That is why, once a customer, always a customer.

25,000 SELECTED CHIX WEEKLY
Hatched by an expert with our new system used exclusively by us, in the world's most up-to-date Hatchery.

14 LEADING VARIETIES

Safe delivery guaranteed by P. P. prepaid. Write us for illustrated booklet on Ovie's Chix
OVIE'S HATCHERY CO.
24 State Street MARION, IND.

Barred Rocks 15 eggs for \$1.75. 100 hens laid 10,423 eggs from Jan. 1 to Nov. 31, 1919. Winter Layers. LEWIS B. AVERY, Saline, Mich.

Barred Plymouth Rock eggs for hatching from fullblood prizewinning strain \$2.00 per 13 post paid. J. A. BARNUM, Union City, Mich.

Baby Chicks S. C. White Leghorns, bred to lay. After Apr. 1 will sell chix and eggs from my exhibition pens, write for prices.
HILLSIDE POULTRY FARM, Hillsdale, Mich.

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

CHICKS AND EGGS

Rose and Single Comb R. I. Reds. Barred Plymouth Rocks. Superior Color. Prolific Layers. Prepaid by parcel post and safe delivery guaranteed. Illustrated catalog free.
INTERLAKES FARM, Box 39, Lawrence, Mich.

CHICKS CHICKS

12,000 chicks a week after Mar. 20. Grand laying strains utility S. C. White Leghorns and Mottled Anconas. Strong, sturdy chicks shipped everywhere parcel post guaranteed safe arrival in lots 25-50; 100 or more. 12th season—order now. Fine free catalogue.
W. VAN APPELDORN, R. 7, Holland, Mich.

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

Sick Baby Chicks?

There is only one way to deal with baby chicks and that is to keep them well. Doctoring a hundred or more chicks is mighty discouraging work. It's pure carelessness to lose more than 10 per cent of chicks, from hatching to full growth. Many lose 40 per cent to 60 per cent, and even more. No profit in that.

Our book, "Care of Baby Chicks" (free) and a package of Germozone is the best chick insurance. WITH BABY CHICKS YOU MUST PREVENT SICKNESS—NOT ATTEMPT TO CURE. "I never had a sick chick all last season"—C. O. Petralin, Moline, Ill. "Not a case of white diarrhoea in three years"—Ralph Wurst, Erie, Pa. "Have 800 chicks now 5 weeks old and not a single case of bowel trouble"—Mrs. Wm. Christians, Olive Ridge, New York. "Two weeks after we started last spring we were a mighty discouraged pair. Every day from three to six chicks dead. A neighbor put us next to Germozone and we are now sure if we had had it at the start we would not have lost a single chick"—Wm. E. Shepherd, Scranton, Pa.

GERMOZONE is a wonder worker for chicks, chickens, pigeons, cats, dogs, rabbits or other pet or domestic stock. It is preventive as well as curative, which is ten times better. It is used most extensively for roup, bowel trouble, snuffles, gleet, canker, swelled head, sore head, sores, wounds, loss of fur or feathers. 25c, 75c, \$1.50 pkgs. at dealers or postpaid.

GEO. H. LEE CO., Dept. F-39 Omaha, Neb.

You Take No RISK With An **Ironclad** Both \$17.25
30 Days Trial Freight Paid
10 Yr. Guarantee Paid

Think of It! You can now get this famous Iron Covered Incubator and California Redwood Brooder on 30 days trial, with a 10-year guarantee, freight paid east of the Rockies.

150 EGG INCUBATOR CHICK BROODER

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



130 Egg Incubator and Brooder \$16.25

If Ordered Together. Freight Paid east of Rockies. Hot water copper tanks, double walls, dead air space, double glass doors, all set up complete, or 180 Egg Incubator and Brooder \$20.00 FREE Catalogue describing them. Send for it TODAY or order direct.

Wisconsin Incubator Co., Box 82 Racine, Wis.

Chicks that Live \$15 per 100 S. C. W. Leghorns MY SPECIALTY SNOWFLAKE POULTRY FARM, R. 1, Grand Rapids, Mich.

Chicks, Leghorns, Minorcas, Spanish, Houdans, Cam Wyandottes, Tyrone Poultry Farm, Fenton, Mich.

Money In Geese

THERE is good basis for the fact that a goose was chosen in the fable to lay "a golden egg." There is good money in geese for a lot of farmers that are now overlooking this opportunity. This is especially true on farms where pasturage is abundant. Geese are great foragers and eat more grass, weeds and pasturage than any other kind of fowl. This makes them especially attractive in these days of high-priced grain feeds.

The Toulouse, Embden, Chinese, and African are the most popular American breeds of geese. The first two greatly leading the others. Occasionally the eggs are used for cooking, but generally geese are kept only for meat and feather production. Goose meat is nutritious and palatable and not greasy when properly cooked.

It is most important that geese have a good grass range available during the summer while a pool of water for bathing and recreational purposes is also a desirable feature.

The market for geese is not so general as for chickens. This point should be considered in undertaking the raising of geese, as most of the sales in cities are made around the holidays and Jewish feasts, although a few will sell the whole year round.

One of the best things about geese is their extreme hardihood. Geese are rugged birds and need shelter only in winter or stormy weather. An open shed or an old barn usually is satisfactory for this purpose. From four to twenty-five geese may be kept on an acre of land, although under most conditions ten is a fair average.

Geese are fed a ration to produce eggs during the latter part of the winter so that the goslings will be hatched by the time there is good grass pasture. The eggs may be hatched by either chickens, geese or incubator. Some breeders prefer to raise the goslings under hens, as geese sometimes become difficult to manage when allowed to hatch and rear their young. The period of incubation of goose eggs varies from twenty-eight to thirty days.

Goslings do not need feed until they are twenty-four or thirty-six hours old, when they can be started on one of the brands of chick feed, along with one feed a day of a mash or dough composed of equal parts of shorts (middlings) and corn meal, with five per cent of beef scrap added after the

goslings are six weeks old. Bread and milk are a good occasional feed for young goslings. Fine grit or sharp sand should also be available. If the goslings are to be fattened the ration should be gradually changed to one-third shorts and two-thirds corn meal by weight, with five per cent of beef scrap added, while a feed of corn should be given at night as soon as the birds are large enough to handle the whole grains.

Adult geese may be fed for egg production in early spring on a mash of one pound of corn meal, one pound of bran, one pound of middlings or low-grade flour, and eighteen per cent of beef scrap, which is fed in the morning; equal parts of corn and wheat, or corn alone, is fed at night. Grit and oyster shell should be kept before the geese, especially when they are laying. A constant supply of drinking water should always be available under protection in bad weather so that the geese can not get their feet into the water. Cut clover hay, alfalfa, silage, cabbages, mangel-wurzel beets, or any waste vegetables may be fed during the winter months.

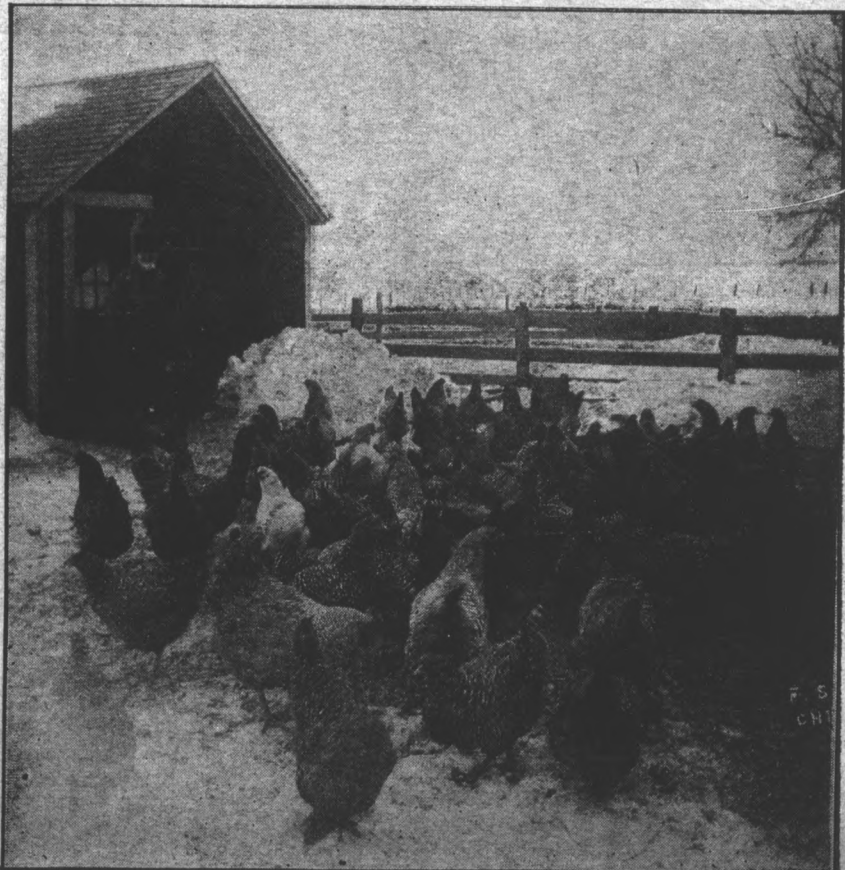
Many breeders pluck the feathers from their live geese at some time prior to molting. Some pick every six weeks during the summer and early fall, while others pick only once or twice a year. Feathers are ripe for picking when the quills appear dry and do not contain blood. About one pound of feathers can be picked from each goose per year. The demand for goose feathers and the practice of plucking geese appear to be decreasing, attention being concentrated on a production of young geese for market. Lots of market poultrymen make a specialty of fattening and selling the young geese when they are fully feathered.—R. G. K.

THE FARM FLOCK IN SPRING.

(Continued from page 493).

twice each week, preferably on sunny days near the windows. Once a week is enough if the hens are properly protected from lice and mites.

Buy a toe punch and mark the chicks that are hatched first. This will help to save the oldest pullets when the flocks are culled in the fall. It takes a helper to hold the chick and spread the web of the foot so that, a



Exercise and Meat Foods Keep the Egg Production High.

neat job can be done. The toe punch is useful in marking all chicks from special hatching eggs so such birds can be distinguished from the home flock.

Note the bands placed on cockerels last fall and see that they are not too tight. A cockerel often develops a large leg and if the band slips below the spur it may bind and possibly shut off the circulation. This might cause the foot to freeze. At least it is very uncomfortable and a larger band should be substituted.

In planning the hatching business for the year remember it is quality that counts more than quantity. Nothing is gained by hatching more chicks than can be given proper care. It is better to sell the eggs or sell day-old chicks than to keep too many chicks and have them die because of overcrowding and lack of care. When the chicks are worth at least twenty or twenty-five cents each it pays to keep down the mortality rate.

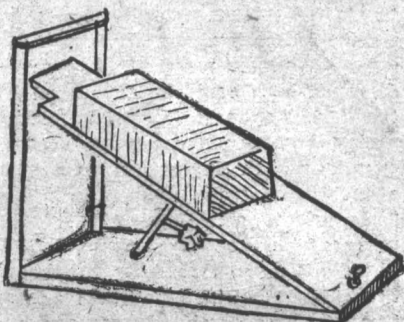
The advice to stick to one breed of poultry is always good. But if a farmer ever gets sick of taking care of a certain breed of poultry until he omits the care, it often pays to take up a new breed. This is apt to develop a new stock of enthusiasm for poultry and may lead to study and good management that will make the poultry more profitable. Constantly changing breeds has kept many from success. And at the same time some poultrymen have tried several breeds before they found the one that they liked the best. Then they made no more changes and found their profits to increase every year.

The cost of lumber and hardware may reduce building operations on poultry farms this year. It means that buildings already constructed should have a greater earning power. The increased cost of incubators should lead many farmers to appreciate the value of the machines they now own. Brooders and other equipment not needed, should have as great a second-hand value this year as it ever will have. While this may be an expensive year for expansion it is also a good year to profitably use equipment purchased before prices advanced.

Do not neglect the green food in the poultry ration before the birds have free range. It is quite necessary to insure an abundance of fertile eggs early in the spring. If all the mangels and cabbages are used, try cut clover and sprouted oats. Oats are rather high and it is much cheaper to use mangels and clover chaff or cull vegetables as a source of green feed. But the hens need green food regardless of price. And it has the health giving qualities which help to produce fertile eggs.

A HOME-MADE RAT TRAP.

A VERY effective rat trap can be made from two boards hinged as in the illustration and weighted with a brick. The top board should be shaped at the open end, so that it will work easily and evenly up and down in the upright frame which is fastened to the



lower or baseboard. The trigger is made of two round sticks one-quarter-inch in diameter. The bait should be tied firmly to the trigger so that the rat or mouse will be sure to spring the trap in trying to remove it, place the brick in position and the trap is ready for Mr. Rat.

R. G. KIRBY.

GOMBAULT'S CAUSTIC BALSAM

THE STANDARD REMEDY
HUMAN and VETERINARY



It is generally true that an external remedy that is good for the animal is also good for the human body, and Gombault's Caustic Balsam is no exception to this rule. The many testimonials received from physicians and veterinarians are convincing proof of its merits. Rheumatism, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Throat, Stiff Joints, in fact any ailment requiring an external application can be treated with absolute safety and the beneficial results produced are all that could be desired.

Soothing and Healing--A Perfect Antiseptic

As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors. A trial will convince anyone that here is a remedy without an equal.

Write for any information desired. \$1.75 per bottle at druggists or sent by parcel post on receipt of price.

The Lawrence-Williams Co., Cleveland, Ohio

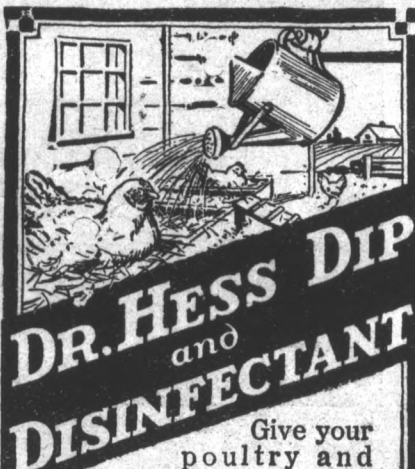


Sturdy Chicks—Spry as Crickets

HILLPOT QUALITY CHICKS are easy to raise because hatched from eggs of pure strain farm-range stock. Book your order now, shipment any date desired.

WHITE OR BLACK LEGHORNS	\$25.00	\$12.50	\$6.75
BARRED OR BUFF ROCKS	\$30.00	\$15.00	\$8.25
R. I. REDS or WHITE WYANDOTTES	\$35.00	\$18.00	\$9.50

Sent postpaid. Safe Arrival Guaranteed Anywhere in U.S.A. Free book. W. F. HILLPOT, Box 69, FRENCHTOWN, N. J.



DR. HESS DIP and DISINFECTANT

Give your poultry and animals the best living conditions by using Dr. Hess Dip and Disinfectant. It is a powerful germ destroyer—helps to keep off contagious diseases. Make the rounds of the poultry house, pig pens and stables regularly with the sprinkling can. Kills hog lice. Don't neglect the garbage cans, drains, foul-smelling and disease-breeding places. An excellent disinfectant for the home. One gallon makes 100 gallons solution.

Dr. HESS & CLARK
Ashland Ohio

Barred Rock Eggs

for hatching \$1.50 per 15. \$9 per 100. Choice stock. Mrs. ROYAL KELLY, Opaac, Mich.

Barred Rock Baby Chicks, order now for May and June. Apply for terms Jerome, Mich.

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

Baby Chicks S. C. W. and Brown Leghorns, and S. C. Anconas. Healthy, vigorous, and from a good laying strain. We guarantee safe delivery. Order now. Seventh season. Send for price list. City Limits Hatchery and Poultry Yard, R. 5, Holland, Mich.

B-A-B-Y C-H-I-C-K-S

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

Hubers Reliable Chicks

500,000 FOR 1920
By Parcel Post Prepaid. Delivered to You. Guaranteed Live Delivery. Eggs for Hatching by the Setting or 100.

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

This is our 11th season. With the great increased demand for our chicks and the fine reports and praise we receive from our customers, proves that our chicks are from Stock of Good Quality. Bred for Heavy Egg Production and that they are Properly Hatched. Stop your loss by buying our Reliable Chicks.

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

Hubers Reliable Hatchery
East High St. FOSTORIA, OHIO

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

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

DAY OLD CHICKS

Guaranteed to 1,500 miles. Eggs for Hatching. Bar. Rocks, S. C. W. Leg., S. C. & R. C. Reds, W. Wyand., Buff & W. Orp. Catalog free.
GOSHEN POULTRY FARMS, R. 19 Goshen, Indiana

Day Old chicks and eggs for hatching. Breeder and importer of Barron Strain White Leghorns, White and Barred Rocks, S. C. Rhode Island Reds. Heaviest laying strains obtainable. Order early.
Brunner's Poultry Farm, Holland, Mich., R.R. No. 8

Eggs
From special mated and selected R. C. Brown Leghorns: 15 \$1.50, 50 \$4, and 100 \$7. Safe delivery guaranteed. D. E. SPOTTS, HILLSDALE, MICHIGAN.

Raise Pheasants Instead of Chickens

All of our eggs sent out are from our own pens and are from strong healthy birds and are not over three days old when they leave the farm. Except the last three varieties some might be ten days old. Packed in dead grass and shipped by insured parcel post prepaid. Price per dozen eggs. Ring Neck [Chinese] Pheasant \$5.00. Golden Pheasant \$6.00. Pure Mongolian Pheasant \$7.00. Silver Pheasant \$8.00. Lady Amherst \$15.00.

MISS ANNA L. WADE

Edwardsburg, Mich.

Eggs Postpaid 12 Mammoth Bronze turkey \$5.00, on farm range, 15 Bradley Strain Barred Rock, \$1.50. R. E. BLACK, Quincy, Ohio.

Fowler's Buff Rocks. We are now booking orders for eggs. A few choice cockerels left. R. B. FOWLER, Hartford, Mich.

CHICKS We have shipped thousands each season since 1904. Are booking orders now for Spring delivery, booklet and testimonials. FREEPORT HATCHERY, Box 12, Freeport, Mich.

DANGER If chix and eggs are Chix 15c Up 100,000 Chix not shipped right. Best Blooded stock ever produced at low prices quoted. Selected Utility, Exhibition trapped stock. 16 varieties. Hatching eggs. Hens, Ducks. Book your orders early. Avoid disappointment. Stamps appreciated. Beckman Hatchery, 26 E. Lyon St., Grand Rapids, Mich.

Hatching eggs from a vigorous heavy laying stock. S. C. W. Leghorns, Barred Rocks, W. Wyandottes, Buff Orpingtons. 15, \$1.50; 50, \$4.50; 100, \$8.00. Shipped prepaid. Miller Poultry Farm, Nappanee, Ind.

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large, great layers, pure white. Strong, Day-Old Chicks. Hatch every week. Guaranteed delivery, full count, alive and lively \$18.00 per 100. Parcel postpaid. V. A. MORSE, IONIA, MICHIGAN

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

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

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The "Champion" Mower



Notice that: The knife head is unusually long, giving extra strength just where cutter bars most often break. Pitman connection to knife head has a self-adjusting device that automatically takes up wear.

Outer end of pitman crank box is closed and has an oil chamber that holds enough oil to lubricate the box for several hours.

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Covers 8 Acres a Day

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or Oats

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Important Bee Ailments

Mr. H. W. Sanders Describes and Gives Treatment for the Common Diseases of the Apiary

BEES, in common with other insects, develop from the egg to the full-grown form by means of metamorphosis, or a series of steps by which the creature changes with startling suddenness into first one and then another entirely different form.

It begins life as an egg, which under the microscope is seen to be about the same shape as a cucumber with beautifully regular markings. This egg is attached to the bottom of the cell in which it is laid by the queen-bee by means of a sticky substance that she exudes at that time, and three days later the egg hatches into a tiny grub, or larva. This is fed by the nurse bees with a food so concentrated as to cause the most surprising growth, and the white worm that is to form the future bee doubles in size and then doubles again within a few days. By-and-by it gets too big to remain coiled up at the bottom of the cell, and we find that it has stretched itself out and just about fills the cell up. When this stage is reached the larva ceases to eat, and suddenly becomes a "pupa." This is the form popularly known as the "Chrysalis" among other insects, and is the prelude to the final transformation into the adult, or perfect insect.

During the week or so that the bee remains in the pupal stage, the organs of the larva seem to dissolve, and those of the bee proper, wings, legs, antennae, the compound eyes, the nec-tar-sucking tongue, the jaws, and all

quit distinct, and we find that a colony with a brood disease may have perfectly normal and healthy adults, and that a colony with an adult disease may have healthy brood.

In this country adult bees are troubled with but few diseases, though some of them are not yet properly understood. For example: "Spring Dwindling," in which the colony becomes smaller and smaller in spring, has always been considered as a result of poor wintering, whereas scientists now think that it is likely caused by a germ called "Nosema apis." "Dysentery" after the bees are set out, or even before, in the cellar, is almost certainly the result of improper food, or other adverse conditions in winter, and both this and dwindling may be avoided as the beekeeper is able to solve the problem of successful wintering. An abundance of good food, a strong colony with a vigorous queen in the fall, and protection from the cold by packing or placing in a cellar or roothouse, are the three essentials for this object.

There is also a disease called "Disappearing Disease," "May Disease," or "Paralysis," that comes and goes in a curious way in nearly all parts of the world, although only in the hotter parts have very serious losses been recorded. In this trouble bees are noticed crawling about in front of the hive with a peculiar black, almost greasy appearance. The abdomen is



Strong Colonies Are the Best Insurance Against Disease.

the specialized organs and equipment distended and the bees appear to be in of the bee appear. Finally a young pain, crawling up grass stems or wan-bee emerges from the cell, and all this dering about unable to fly. The cause wonderful process has in about twen-of death seems to be constipation. There may be one or more hives af-of an adult bee.

If we were to compare the life of an insect with our own, we would not be hence the name "Disappearing Dis-far out in saying that the insect does ease." The infection seems to be con-all its feeding first, all its sleeping fined to bees affected for cases from next, and all its breeding in the final warm countries where there were con-stage of its growth, for these separate siderable losses were cured where the functions are seldom mixed together diseased bees could be separated from as among the higher animals. the healthy ones. In the northern

The above facts may seem to be states, however, the trouble seems to some more of that "pure theory," cure itself. In England there has been which it is hard to connect with prac-a most disastrous disease called the tice, but actually the bee-keeper who "Isle of Wight Disease," from the fails to understand the life history of place of its first appearance, that has his bees is going to lose all of them killed off more than half the bees in sooner or later through disease. the country. The symptoms are sim-

Bee-diseases are sharply divided into ilar to those of the disappearing dis-two classes, those which attack the ease, but it seems to be far more se-brood, or bees in the process of growth vere. Fortunately this trouble has not as outlined above, and diseases which yet occurred in North America.

Foul-Brood.

The above are the only diseases that are likely to affect the full-grown bees, ent periods of its life, the diseases are but those that attack the brood, or

BEE HIVES

Sections, Comb Foundation, etc. Everything for the bees including Beginner's Outfits. Send for 1920 catalog.

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larval bees, are far better known, and far more menacing to the welfare of the colony. There have been few regions that have not had to cope with an outbreak of either "American Foul-brood," or "European Foul-brood," (sometimes called black-brood), and most states now have an apiary inspector who has power to treat all infected areas where the disease may appear. The disease is carried by honey, which has been stored in an infected hive. To human beings the germs of foul-brood are quite harmless, and there is therefore no restriction on its sale, but when a can that had contained such honey is thrown on the garbage pile without being washed, any bees in the neighborhood may find it and clean it out, thereby contracting foul-brood. When they die out, or become too weak to resist, other bees will rob out their stores and so the trouble spreads. Containers that have held honey should always be washed out and the beekeeper who uses any "strange" honey should take care that his bees get none of it.

Foul-brood is often spread through beekeepers not examining their colonies. Some old-fashioned beekeepers still use "box-hives" or "gums," in which the combs are built fast into the box and if one of these gets the disease he has no means of finding it out till the entire neighborhood has been affected. Even where the movable comb hive is used, there are some who do not regularly inspect their combs. These are the folks who are the hardest hit when there is an outbreak, for they frequently lose their entire stock before becoming aware of the danger.

Of course, experts in honey-production know that to get the best results they must open the hives and perform the manipulations needful to control swarming, for the natural instinct of the bee is to swarm rather than to make honey, and it is by changing this line of action so as to keep them storing that the best crops are secured.

The symptoms of foul-brood, whether "American" or "European," are to be found in the appearance of the brood. Healthy brood is pearly-white and the cappings are level with the top of the cell in the pupa stage. When diseased, however, they turn brown or black, the cappings are sunken and often perforated with holes, and there is a foul smell.

A toothpick is inserted into the dead larva as it lies in the cell, and then withdrawn. If the substance draws out into a string or thread for several inches, then the trouble is "American"—we say the brood is "ropy"—but if there is no such ropiness, then it is "European."

There is also a difference in the smell, that from "American" resembling the smell of glue, and that from European being sour, like yeast.

Treatment.

Treatment of "European" foul-brood, which is the less severe of the two, consists of making the colony queenless, and keeping it so for about three weeks, to allow all the brood to hatch. A young Italian queen is now introduced, and the bees having been given time to clean out all the infected bodies of the larvae that have perished, it is found that the trouble is ended.

In "American" foul-brood, however, the more serious of the two, a much more radical treatment is necessary for the dead larva sticks tight to the cell and the comb will always be dangerous. The treatment is to shake the bees into a clean hive, and then to shake them again in three days into another clean hive with full sheets of foundation. This obliges them to use up all the infected honey they carried away from the original colony. All infected hives and combs are closed up where bees cannot get at them and then treated at night. Combs are melt-

(Continued on page 523).



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BABY Chick S. C. W. Leghorns, White, Buff Barred Rocks, S. C. R. I. Red, Ancona, White Wyandottes, Buff and Brown Leghorns, 25 for \$3.25, 50 for \$11.00 for \$20. Fenton Chicken Hatchery, Fenton, Mich. Box 244.

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Fine laying strain of prize birds.

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Additional Poultry Ads. on Page 521

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Edgar is now an American Citizen, and is here for the purpose of bettering the breed in this country.

Edgar's calves are as yet too young to offer for sale but they are a promising lot and are being spoken for fast.

We have a few choice young bulls by Black Monarch III who won the Mich. State Fair Grand Championship in 1914-1915-1916, still for sale.

Our herd is under State and Federal supervision. A visit will interest you, write for particulars.

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GUERNSEY bull calves whose sire's dam made 19,460.20 milk. 909.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.80 fat.
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Guernseys Federal inspected herd. Bull 2 yrs. old, son of Imp. Spotswood Sequel, dam's A. R. record 419.34 b. f. class G. Bull calf 8 mos. old, 6 bull calves 2 to 5 mos. old. Satisfaction guaranteed G. W. & E. G. Ray Albion, Mich.

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RETAINED AFTERBIRTH.

BY DR. G. H. CONN.

THIS is a matter which many stockmen do not regard with due seriousness, possibly because they have not had an opportunity of observing the various evils resulting from the failure of a cow to clean properly.

When any great portion of the placenta, or afterbirth, is retained in the uterus for any length of time after the cow has given birth to the calf, there usually develop a varied chain of symptoms, which are very noticeable and likewise often serious and many times fatal. There may occur a simple catarrh of the uterus in which the discharge is of a mucous consistency or it may be a thick, heavy pus sometimes containing streaks of blood. There may be a cachexia or unthriftiness, or a wasting away, or there may be an absorption of the septic or poisonous matter, which is known as septic metritis, which oftentimes results in death and there also many times results a sterility or barrenness of the cow following a retention or any of these symptoms that we have enumerated here.

A portion of the afterbirth may remain after the cow has apparently cleaned normally and we sometimes find shreds or portions remaining after it has been removed by inexperienced men, or sometimes when the veterinarian has removed it.

When the simple catarrhal condition of the uterus follows this retention, the tail and escutcheon are soiled with a mass of filth which is composed of pus and dirt and when the cow is in the recumbent position a quantity of pus is usually noticed to flow from the vagina. Such cows in a herd can usually be detected from the odor of this discharge alone. Milk from a cow in this condition should not be used for human consumption. Now, as a matter of fact, a veterinarian can do little in the way of treating this condition, unless he is called early, as the mouth of the uterus will contract so that it is impossible to use mild antiseptic irrigations, as it is unsafe to use such irrigations unless it is possible to syphon off all the solution, because if any is allowed to remain it may produce such irritation and straining that an eversion of the vagina may take place and this would be a very serious condition under the circumstances.

With the resulting cachexia that we spoke of the cow gradually loses flesh, her hair is rough, she gives very little or no milk, there is a loss of appetite and she will not respond to any extent to feeds or tonics. She gradually grows weaker and becomes a living skeleton. Sometimes after a year or so she regains some of her former health but this is unusual and generally wastes away and dies in a few weeks.

In other cases the cow absorbs these septic or poisonous products and this condition is known as septic metritis or pyo-metra and is, commonly speaking, an inflammation of the uterus due to the absorption of the poisonous material within it. After several days, the cow loses her appetite, respiration becomes labored, the temperature may reach 105 or 106 degrees Fahrenheit. With early and persistent treatment some of these cases recover but when they do recover they usually leave the cow sterile and this is a great loss to the cow owner.

With any of the above conditions, it is not unusual to have a sterile cow after recovery. Sometimes, after the catarrhal symptoms of which we just spoke, the cow may be gotten with calf with persistent service, or at other times after the lapse of several months up to a couple of years. If it is not possible to get her with calf within two years after the above condition, very little hopes should be entertained. The practice of tying heavy objects

The CHAMPION Turns Corn Into Coin!

Do you know why silage possesses a higher feeding value than the same forage dry cured?

Do you know that with a silo you can keep more live stock and make more money per animal?

Do you know that silage can be used during summer and fall to supplement pasturage?

All these questions are answered and many other points about the value of silage and proper silo construction are thoroughly covered in the new Champion catalog which is sent FREE to you for the asking.

It also contains dependable information about the

Champion Rot-Proof, Wind-Proof, Time-Proof Silo

—the silo that makes and keeps silage perfectly—the silo that is literally rooted to the earth—the silo with creosote oil-filled staves which absolutely cannot rot, warp or swell.

Get the whole story. Write—today—for the free book which gives you all the facts about the one silo that is 100% right.

No obligation. The book is yours for the asking.

The
E. W. Ross
Company
Box 214
Springfield,
Ohio



Buy A Holstein Sire

How would you like to own a full brother to a 24.78 lb. Junior 2 yr. old out of a 26.39 lb. dam, sired by a 32.43 lb. bull with good breeding all around him? He is 5 months old, well grown and a dandy.

First [check for \$350 buys him; also 3 other A. R. O. bulls as nice as you ever see.

LAKE SIDE DAIRY

Lake Odessa, Mich.

Bazley Stock Farm YPSILANTI, MICH.

A splendid bred Bull born Dec. 12th 1919. Sire a 25 lb. 3 year old son of King of the Pontiacs. Dam 4 20.47 daughter of Woodcrest De Kol Lad 25 A. R. O. Daughters. Sire's Dam a daughter of Berl Wayne's Paul De Kol 2nd. Nicely marked and guaranteed right in every way. Price \$125.00.

JOHN BAZLEY
319 ATKINSON AVE.
DETROIT, MICH.

Holstein-Friesian Cattle

Herd Headed by
Segis Pontiac De Nijlander

A 32-lb. grandson of Michigan's great 35-lb. champion. His dam, Oak Valley Korndyke Beets Segis Fan, 32.06, is also a Michigan prize winner. Write for calf list. Wah-be-me-me Farms, White Pigeon, Mich.

The Traverse Herd

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

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

to that part of the afterbirth that is usually found protruding, in an effort to bring it away, should not be allowed, as it usually tears the afterbirth so that a part of it remains. The inexperienced can often do more harm than good in these cases, and it is poor policy to allow them to attempt this unless a veterinarian cannot be had.

In my experience it is usually best to wait for about forty-eight hours in most breeds of cattle before removing the afterbirth, and in many cases it is good policy to wait many times for about seventy-two hours. It is practically safe to wait in any cow for at least twenty-four hours.

Many people are of the opinion that there is some way of preventing this retention, and that there is also some remedial agents that can be given that will cause the cow to pass them, but there is none as far as I have ever been able to learn.

HOW TO DRESS CALVES.

CALVES from three to six weeks old, and weighing about one hundred pounds, or say from eighty to one hundred and twenty pounds, are the most desirable weights for shipment. (The head should be cut out, so as to leave the hide of the head on the skin. The legs should be cut off at the knee joint. The entrails should all be removed, excepting the kidneys; the liver, lights and heart should be taken out. Cut the carcass open from the neck through the entire length—from head to bumgut. If this is done they are not so apt to sour and spoil during hot weather. Many a fine carcass has spoiled in hot weather because of not being cut open. Don't wash the carcass out with water, but wipe out with a dry cloth. Don't ship until the animal heat is entirely out of the body, and never tie the carcass up in a bag, as this keeps the air from circulating, and makes the meat more liable to become tainted.

It is very essential that the directions for dressing calves be followed, especially in regard to letting calves cool off properly before shipping in hot weather, as hundreds of calves are received in bad order and sold for not much more than charges, and some do not bring freight. Numerous carcasses are also condemned by the health officers. They should hang up six to eight hours, or over night, in an airy place to properly cool off before shipping.

Calves under fifty pounds should not be shipped and are liable to be condemned by the health officers as being unfit for food. Merchants, too, are liable to be fined, if found selling these slunks, for violation of the law. Very heavy calves, such as have been fed on buttermilk, never sell well in our market, they are neither veal nor beef.

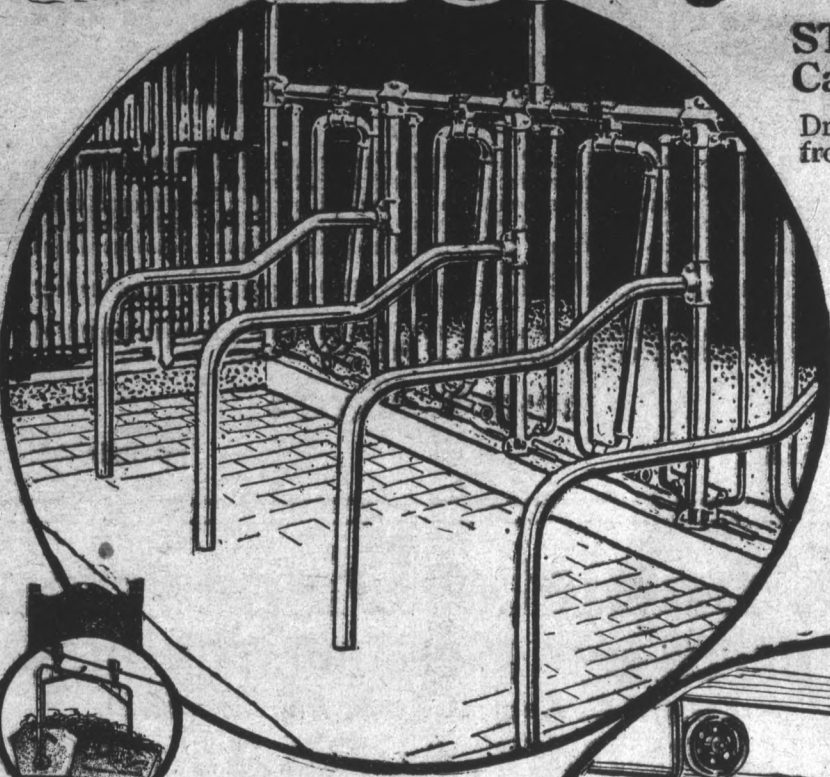
IMPORTANT BEE AILMENTS.

(Continued from page 521).
ed up into beeswax, honey is boiled, and hives are scorched out with a blow lamp, or straw fire, to sterilize the interior. All gloves, knives, clothing, extractor, or anything used in these operations must be carefully disinfected or destroyed by fire.

Prevention is better than cure, and these methods are heartily recommended to all beekeepers:

1. Never permit a weak colony to be robbed, for if diseased the trouble will be spread.
2. Never feed honey purchased from an unknown source, or allow containers that have had honey to lie around.
3. Never purchase bees, hives, combs, or other supplies from infected districts.
4. Inspect regularly the inside of your hives and if you find suspicious symptoms send for your state apiarist, and give him every cooperation in making a thorough job of eradicating the disease.

DREW Steel BARN Fixtures



STALLS that Keep Your Cattle Clean—Contented

Drew Stalls will give you extra profits from your herd. They are roomy without wasting space—compact without cramping the cow. By a series of skillfully planned exclusive details, the Drew Stalls are made superior; yet they cost no more.

Features No Others Have:

- Double swinging sure stop. Impossible for cow to put her head in the wrong place, yet allows utmost freedom.
- Spring Cushion Bottom, a patented device that prevents injury to the cow.
- Anchor Plates that fasten the stall to the curb making a strong, permanent fastening.
- Indestructible Stall Posts 1 1/2 inch in diameter of rolled steel.
- Wood lining to stanchion of finest No. 1 Rock Maple, Rounded—smooth.
- Double sure lock stanchion—can be opened with one hand.
- Adjustment device for any neck size, operated by one set screw.
- Alignment device; keeps cows inline at the gutter.

FREE Barn Floor Plans and DREW Expert Service

Get the Best in Litter Carriers

Drew Litter Carriers are specially designed to do extra work. No other carrier on the market has these features:

Four lift chains, double rolling shaft lift and double beveled gears—making Drew the strongest and easiest to operate. Heaviest load easily lifted with one hand. Eleven inches extra lift over any other construction. Hollow tubular track—forming perfect connection with cable that permits carrier to pass smoothly from rigid track to cable.

You are not getting the best in carriers unless you get the double rolling shaft lift and tubular track.

Drew equipment is different. Every Drew fixture has exclusive features, yet costs no more. Make your herd yield its maximum. Equip your barn with Drew Fixtures.

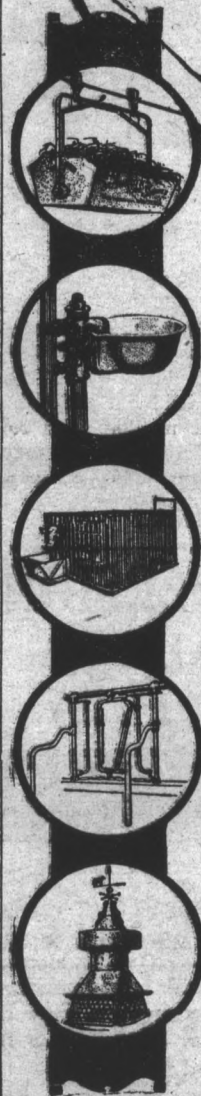
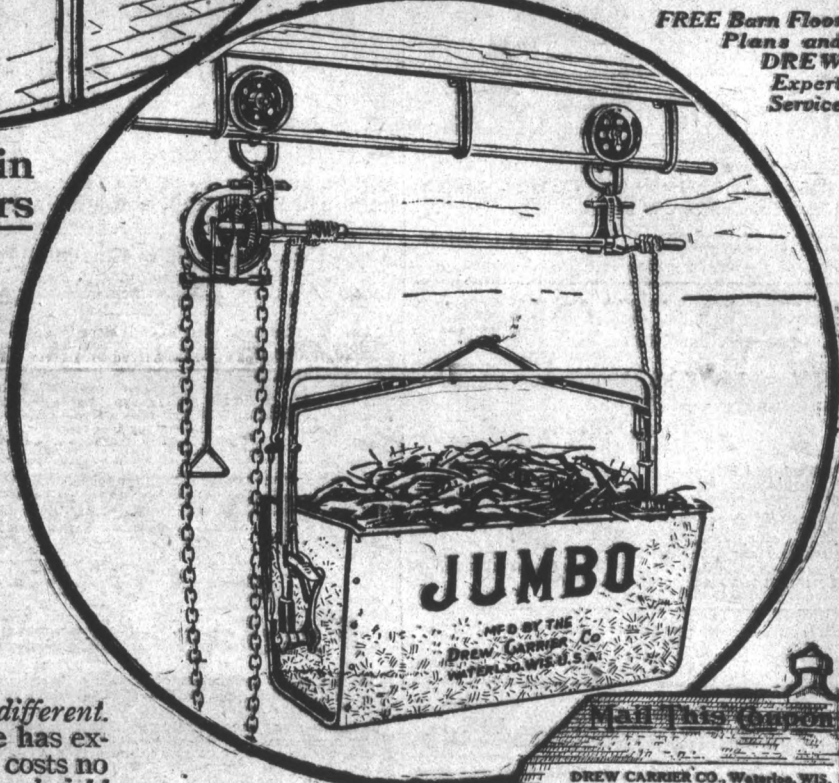
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Stalls, Stanchions, Litter Carriers, Waterbowl, Full Pens, Cow Pens, Calf Pens, Hog Pens, Feed Carriers, Bull Staffs, Ventilators, Feed Trucks, Hay Tools, Door Hangers, Etc., Etc.

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SEND THE DREW IDEA BOOK #32 WITHOUT obligation or cost to me. I want to know about.....Stanchions.....Stalls.....Carriers.....Drinking Bowls.....Steel Pens.....Bull Staff.....Barn Plans for.....New Building.....Remodeling—(date).....

Name.....

P.O.

R.F.D. State.....

4 Nearest Dams 32.46 lbs.

Bull Born November 14, 1919

Color—nearly half and half.

Sire's Dam:—Butter 7 Days 32.32; Milk 7 Days 552.40; Average per cent Fat 4.63.

Sire's Sire's Dam:—Butter 7 Days 40.32; Milk 7 Days 610.20; Butter 30 Days 165.22; Milk 30 Days 2095.8.

Dam:—Butter 7 Days 26.61; Milk 7 Days 532.9.

Dam's Dam:—Butter 7 Days 30.59; Milk 7 Days 565.00; Butter 30 Days 124.19 Milk 30 Days 2436.6

she heads a combination of three direct generations of thirty pound cows.

Price \$750.00 f. o. b. Howell.

McPherson Farms Co., Howell, Mich.
Herds under U. S. Supervision.

King of the Pontiacs and King Segis

Bull calf born Dec. 10th. 1919. Sire: from son of King of the Pontiac whose dam is 33 lb. daughter of King Segis. Sire's dam Bucca Lassie Jean Butter 33.05 Milk 721.

Dam, Fine large cow now on test making 23 lbs. Price \$150.00 if sold at once.

A. W. COPLAND, Birmingham, Mich.
Herd under state and federal supervision.

A Real Bull

Young bull nearly ready for service from a 19 lb. jr. 3 yr. old daughter of Alcatraz Pontiac Butter Boy (136933). The heifer has a 31 lb. dam she also has a 31 lb. sister who has a 33 lb. daughter that gave over 100 lbs. of milk a day.

Write for pedigree.

SINDLINGER BROS.

Lake Odessa,

Mich.

CLUNY STOCK FARM

A Semi-Official Bred Bull to Head Your Herd
Maplecrest Application Pontiac No. 132652, heads Your Herd
His dam's record is 1344.3 lbs. butter, 23,421.2 lbs. milk in 365 days, and 35,103 lbs. butter and 515.6 lbs. milk in 7 days.
One of his sons from our good record dams will carry these great blood lines into Your Herd.
For Pedigrees and Prices write to
R. BRUCE McPHERSON, Howell, Mich.

\$125 Buys Reg Holstein Bull 1 yr. old. Delivered and guaranteed O. K. High class breeding and good individual. B. B. REAVEY, Akron, Mich.

A BULLY GOOD BULL CALF.

Born July 1919. His six nearest dams have good yearly records. Amongst them are three world's records Good individual, nicely marked, and worth in any good herd all he will cost. You can't pay too much for this kind. I have a fine four months bull, not quite so well bred but a nice one.
L. E. CONNELL
Fayette, Ohio.

PERHAPS we have the bull you want. Our herd under Federal supervision headed by a 36 lb. son of King of the Pontiacs. Bull calves at your own price and terms. Three dandy fellows of serviceable age and several good young calves. Will also sell a few good heifers bred to Fellers DeKoe King of the Pontiacs son of King of the Pontiacs and Woodcrest Dora S. 89. Call at Hillcrest Farm, Ortonville, Mich. or write John P. Hehl, 151 Griswold Street, Detroit, Michigan.

REGISTERED Holstein bulls sired by King Zerna Alcatraz Pontiac, son of the 350,000 bull, some from good A. R. O. cows. C. H. Giddings, Gobleville, Mich.

Holsteins of Quality

Five large heifers and some extra good cows bred to a grand son of May Echo Sylvia, also calves and yearling heifers. All Federal tested for Tuberculosis.
E. A. HARDY,
Rochester, Mich.

FOR SALE three Registered Holstein-Friesian 2-year old heifers. Will make fine cows, best of breeding, sired by a Pontiac Bull. Will sell one or the three.
HENRY S. ROHLFS, Akron, Mich.

To reduce my herd I am offering for sale a number of Pure Bred Holstein heifers and full age cows.
JOSEPH H. BREWER, Grand Rapids, Mich.

Winnwood Herd

—SENIOR HERD SIRE—
Flint Maplecrest Boy (166974)

4 years old and weighs 3000 lbs. We have a few of his sons ready for service and some little fellows straight as a line and priced right the daughters of Flint Maplecrest Boy are making good.

—JUNIOR HERD SIRE—

Sir Ormsby Skylark Burke (249 66)
 A brother to the world champion cow over all breeds (Duchess Skylark Ormsby) 1506 lbs. of butter in one year. He is the best bred Ormsby bull in Michigan his dam a daughter of King Segis Pontiac she is a sister to King Segis Pontiac Count and the \$50,000 bull King Segis Pontiac Alcatraz, we said get a better bull (we got ours) one of his sons out of a daughter of Flint Maplecrest Boy will make some herd sire.

JOHN H. WINN, (Inc.)
 ROSCOMMON, MICH.

Reg. Holstein Bull calf born Feb. 1, 1920. Sires 13 dams ave. 31 lbs. Price \$100. Reg. and Del. would take Liberty bond. J. R. Hicks, R. 3 St. Johns, Mich.

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

Bull calf born Apr. 27, '19. Sire's six nearest dams average 33.34 lbs. butter for 7 days. Dam is a 16.52 lb. 3 year old. **Oscar Wallin,** Unionville, Mich.

LONG DISTANCE

Holstein calves of either sex. Can spare a nicely marked heifer backed by seven dams that average above 1200 lbs. butter and 24000 lbs. milk in one year. Choice Duroc Sows. **A. FLEMING,** Lake, Mich.

10 mo. old bull 45 white, 9 nearest dams average 23.85 lb. butter, 533 lb. milk in 7 days. \$125. Terms. Also few grand daughters of Maple Crest Korn. Heng. **M. L. McLAULIN,** Redford, Mich.

FOR SALE

Four Reg. Holstein Cows and a 31 lb. bull.
J. Taylor Gage, Manchester, Mich.

Holstein bull calf, born Dec. 2, 1919. Dam has near 22 lbs. of butter in 7 days, sire's dam at 2 yr. 19.21 lbs. of butter in 7 days, 12.30 lbs. in reg. yr. with 18.370.40 lbs. of milk. Price \$150. Write for particulars on our \$2500 herd sire. **Ridenour & Reck,** St. Johns, Mich.

HARWOOD HEREFORDS

Young stock both sexes for sale.

"Keep On 508019" heads the herd. Write us your wants. Visitors welcome.

JAY HARWOOD, Ionia, Mich.
 Farm six miles south of Ionia.

HEREFORDS

3 Prince Donald, 3 Farmer and one Polled bulls from 7 to 13 months old, for sale.

ALLEN BROS.

PAW PAW, MICHIGAN

Herefords Special low price on the following for a short time. One four year old cow due in spring. Two 2 year olds with calves by side. One yearling heifer. Three bull calves, about 9 months old, one polled, two horned, all well marked and good dark color.
COLE & GARDNER, Hudson, Mich.

Herefords. Just purchased 3 new herds, now have 150 head; we offer you anything desired either sex, horned or polled, any age. Priced reasonable.
THE MCCARTHY'S, Bad Axe, Mich.

Hereford Herd Headers only the upper crust retained, undesirables unsexed, not the largest herd, but few as good. Come and see. Farm adjoins town. **E. J. Taylor,** Fremont, Mich.

MICHIGAN JERSEYS

Michigan is an ideal place for the raising of Jersey Cattle and there are no better cattle for dairying than Jerseys. Jerseys mature early, live long, produce persistently, give the greatest amount of butter-fat obtainable from every pound of feed. They are hardy and vigorous, always on the job and the greatest mortgage-lifters that ever entered a barn.

Michigan should have more Jerseys and the Jersey breeders of the state are anxious to cooperate with anyone who is interested in successful dairy farming.

MICHIGAN JERSEY CATTLE CLUB

ALFRED HENRICKSON, Sec'y-Treas. **SHELBY, MICH.**

The John P. Olcott Dispersal

PERRY, MICH.

MONDAY, APRIL 12, 1920 SIXTY HEAD

The entire herds of John P. Olcott and Frank A. Hart, twelve head from V. C. Wilkinson and three from S. T. and A. B. Service. RECORDS: Nearly every cow has a record or is from a record dam. One is a 30 lb. jr. 4 yr. old with two daughters by the 35 lb. bull. INDIVIDUALS: An extra good lot of individuals much better average than is usually found in dispersals. HEALTH: Tuberculin tested and sold with 60 day guarantee and retest privilege. Sale easy of access and under cover. Seven months time on approved notes. Bring your bank reference. Send for catalog.

JOHN P. OLCOTT

PERRY,

MICHIGAN

Complete Dispersion

MAPLECREST FARM HOLSTEIN HERD

Dwight G. Rapp, Owner, Lansing, Mich.

THURSDAY, APRIL 1st, 1920

Twenty-eight females, including a 24.8 lb. cow and two daughters by a 31 lb. bull a 22 lb. and a 19 lb. cow, a 21 lb. jr. 3 yr. old and two daughters. Most of the heifers are by a 31 lb. son of Maplecrest Korndyke Hengerveld. Most of the cows are bred to a 29.8 lb. grandson of King of the Pontiacs.

A good working herd in fine condition under federal supervision having passed the first test with no reactors. A safe herd to buy from. Sold under 60 day guarantee with retest privilege. Guaranteed breeders.

Investigate the herd sire by 30 lb. son of King of the Pontiacs from a 29.8 lb. cow. Free conveyance leaves Kerns Hotel, Lansing, Mich. for farm hourly from 9.00 A.M. to 1.00 P. M. Send for catalog.

Michigan Holstein Friesian Association Sale Managers

Albert E. Jenkins, Sec'y, Eagle, Mich.

COMPLETE HOLSTEIN DISPERSION and CONSIGNMENT SALE

Friday April 2nd, at 1 P. M.

65 Head under the auspices of Southwestern Mich. Holstein Breeder's Association. This is a complete dispersion of Pardee Bros. herd of 46 head, which is under Federal Supervision, and also a complete dispersion of F. A. Norris' herd.

This sale comprises a 20 lb. producing daughter of King Segis, and her daughter and also a grandson of Hengerveld DeKol. 20 head are bred to a line bred grandson of King of the Pontiacs. King Pontiac Dora DeKol whose 3 dams and also 7 dams average 30 lbs. of butter in 7 days. Others are with calf to a grandson of Dutchess Skylark Ormsby. Others to a 31.43 lb. son of King Valdesse Pontiac. All animals are tuberculin tested, free from abortion and guaranteed as represented.

Galien is on the main line of the M. C. R. R. between Chicago and Detroit. P. M. R. R. Trains will be met at Sawyer. Free Transportation. Write for catalog.

PARDEE BROS., GALIEN, MICH.

COL. D. L. PERRY, Auctioneer.

R. A. BACKUS, in box.

REGISTERED HOLSTEINS At Auction, April 3, 1920, 10 A. M.

At the John B. Dudley Farm, one mile west of Oberlin, O. Stop 3 on the Cleveland and Southwestern Electric, Norwalk Division April 3, 1920. 65 Registered Holsteins, consisting of the good bull Spring Farm King Pontiac 4th No. 103897 His dam is a 34.56 lb. granddaughter of Aggie Cornucopia Johanna Lad No. 32554, the Sire is Spring Farm King Pontiac No. 66664 by King of the Pontiacs No. 39037 and out of Tweede White Lady No. 83186. Butter 7 days, 37.45. Butter one year, 1127.85. Five daughters of the above mentioned bull, daughters of Rose Hill Pontiac Pietertje No. 59959, granddaughters of Colantha Johanna Lad No. 32481. King of the Pontiacs No. 39037, Pontiac Korndyke No. 25982, Rag Apple Korndyke 8th No. 73416. Every animal has been hand-picked by us and all are noted for their fashionable breeding and good individuality, their size is also remarkable, several weighing from 1400 to 1800 lbs. Every animal over six months of age tuberculin tested prior to sale. Every animal of breeding age guaranteed to be a breeder. Every animal sold will carry insurance policy free of charge for the purchase price.

DUDLEY & ROICE, Owners
 OBERLIN, OHIO

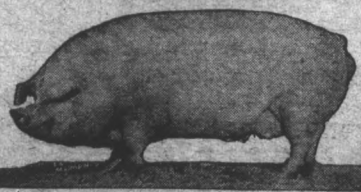
Auctioneers: Col. D. L. Perry
Col. Clayton B. Roice

THE FAMOUS O.I.C. SWINE

We have the undefeated Herd of the World. Winning premier breeder and exhibitor at every fair shown in 1919-1918-1917, including the following state fairs—Ohio, Michigan, Indiana, Illinois, Missouri, Kentucky, Tennessee, Oklahoma, New York, Alabama, Tri-state fair Memphis, and the National O.I.C. twice. Stock of all ages for sale. Registered free in the O.I.C. association. Order now. We will ship any of our stock on approval allow you to keep three days before you have to pay for it. You will be your own judge on your own farm.

CRANDELL'S PRIZE HOGS,

Cass City, Mich.

**The Wildwood Farm**

Jersey Cattle, Majesty strain, Herd on State accredited list, R. of M. testing constantly done. Bulls for sale. **ALVIN BALDEN,** Phone 143-5, Capac, Mich.

Maple Lane Register of Merit Jersey Herd. Bulls ready for service out of R. of M. dams and sired by one of the best grandsons of Pegasus 99th of Hood Farm. **IRVIN FOX,** Allegan, Mich.

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

FOR SALE Jersey Bulls ready for service R. of M. ancestors. Raleigh-St. Lambert breeding. Jerseys stand for economy. **Waterman & Waterman,** Packard Rd. Ann Arbor, Mich.

For Sale Two young Show Bulls ready for service. Oxford Lad breeding. Dams prize winners and producers. **MAPLE HILL FARMS,** **EARLY BROS. R. R. 6,** Grand Rapids, Mich.

LILLIE Farmstead Jerseys—A few heifers bred to L. freshen soon, heifers bred to freshen next fall. 3 cows, R. of M. bull calves. **C. C. Lillie,** Coopersville, Mich.

Bulls ready for service from our herd bull Marguerites Premier, gdson of Pegasus 99th of Hood Farm, and cows now on test for R. of M. **Smith & Parker,** Howell, Mich.

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

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Max Walton Sulton and White Bull Sulton. Model Type, by the Ocala Co. Shorthorn Breeders Ass. **John Schmidt,** Sec. Reed City, Mich.

SHORTHORN DISPERSION

As we are forced to leave the farm we will sell our entire herd at

PUBLIC AUCTION March 30, '20

10 choice cows and heifers. One young bull. To the prospective buyer, this is the place to get big beefy stock with the right kind of breeding at your own price.

Write for catalog.

N. C. THOMAS, Auctioneer.

L. H. Leonard, Owner Caledonia, Mich.
 We also have a few choice pure bred Belgian mares and Stallions at private sale.

BIDWELL SHORTHORNS

For Beef and Milk

Registered bulls, cows and heifers. Good Scotch and Scotch Topped for sale. In prime condition. Modern sanitary equipment. Herd under state and federal supervision. Farm 10 minutes from N. Y. C. depot. 1 hour from Toledo, Ohio. Automobile meets all trains. Write

BIDWELL STOCK FARM

Box B, Tecumseh, Mich.

Richland Stock Farms

Home of the Michigan Champions.
Shorthorn Sires in Service:

IMP. Lorne, IMP. Newton Champion, Sterling Supreme. Why not buy a young bull to head your herd that carries the blood that is making Shorthorn History. Only a few real headers left. Write your wants.

C. H. PRESCOTT & SONS, Tawas City, Mich.

Royal Bruce 795521 heads our herd. Three half brothers sold for \$55,000.00 one Cluny Proud Augusta going to head Wm. Dutches of Collyne's herd at \$21,000.00. One bull and a number of females for sale. **CARR BROS. & CO.** Bad Axe, Mich.
Norman Carr, Secretary.

MEADOW HILLS Shorthorns. Herd headed by Silver King, full brother of Lavender Sultan Purdue University's great sire. For sale females of all ages, a few young bulls. **Geo. D. Doster, Doster, Mich.**

Central Mich. Shorthorn Breeders Assn. offer 40 bulls, 38 females, write for new list. **OSCAR SKINNER, Sec. Gowen, Mich.**

The Kent Co. Shorthorn Assn. have males and females of quality for sale. **L. H. LEONARD, Sec., Caledonia, Mich.**

FOR SALE Registered Shorthorns of good milking strain. Bull Roan three years old, bull calves 2 to 6 months. **Chas. Warner Jr., R. 4, Imlay City, Mich.**

Milking SHORTHORNS. Olav bred bull calves Herds under Federal Supervision. **Davidson & Hall, Beland & Beland, Tecumseh, Mich.**

Two Scotch Shorthorn bulls also heifers for sale. **JAMES NEAD,** Sunfield, Mich.

Registered Shorthorn bull of best Bates breeding five months old. **D. L. McLeese, R. 1, Sag. Co. Freeland, Mich.**

Milking Shorthorn 1 bull calf of service age for sale, color red. **ROSEMARY FARMS,** Williamson, Mich.

Shorthorns Good Scotch bred bulls, cows and heifers priced right. **W. B. McQUILLAN, R. 7, Howell, Mich.**

Shorthorns Scotch and Scotch Topped, only a few left at old prices. **W. J. BELL,** Rose City, Mich.

HOGS

Berkshires size with quality is our specialty. Write your wants to **M. G. MOSHER & SONS,** Osseo, Mich.

Duroc sows and gilts bred to Walts King 92949, who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat and price list. **NEWTON BARNHART,** St. Johns, Mich.

Walnut Hill Durocs service from Ira Jackson and Brookwater stock, also bred gilts and sows of all ages for Mar. and Apr. farrow, priced right and registered in buyer's name. Write **JOHN C. DEAN, R. 1, Mason, Mich.**

DUROC-JERSEYS

A few extra good bred sows and gilts for sale. **CAREY U. EDMONDS,** Hastings, Mich.

DUROC JERSEYS

Bred Gilts for March and April farrow. Write at once for description or come and see them. Satisfaction guaranteed with every order. **RUSH BROS. OAKWOOD FARM, Romeo, Mich.**

Michigana Farm offers some exceptional values in bred gilts. Also in tried sows. These are guaranteed to give satisfaction. They will ship on approval to responsible parties. They breed and sell good Durocs. **O. F. Porter Mgr. Pavilion, Mich.**

ROYAL BRED GILTS

Dams sired by Michigan Cherry Col. Bred to Jacks Cherry Orion King No. 16259. Son of the \$10,000 champion, Jacks Orion King 2nd. all high class stock, write for prices. **The Jennings Farms, R. 1, Bailey, Mich.**

APRIL AND MAY DAIRY NOTES.

(Continued from page 498).

very best feeds, those containing the most digestible protein, are neglected because the cost per ton is greater. Now is the time for dairymen to get busy and grow on their farms more of the feeds their cows require; alfalfa, clover, oats and peas and corn, both as roughage and grain, always keeping in mind that hay cut early and properly cured and well-made silage will replace daily a pound of grain in the cow's ration.

The fences should be repaired before the cows are turned in the pasture. It is much easier work to drive posts and repair fences early in the season, before the ground becomes settled by the rains. If the herd is turned out before the fences are in good condition the cows are sure to find the weak places and acquire bad habits that will prove a nuisance during the whole season. If the cows are satisfied that the fence was put there to mark their limits of range, they will settle down and cause very little trouble so long as their supply of food holds out.

W. M. K.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Dog Has Worms.—My hound dog, nearly two years old, passes small worms, vomits occasionally, eats good, but is rather thin. Is fed leavings from table, johnnycake, potatoes, cooked meat, such as racoon, muskrat and rabbit. No raw meat except sometimes a rabbit's head. This dog gets the best of care and has good bed by the fire.

G. H. Pinckney, Mich.—For each pound of live weight of dog, give one dram of kamala in sweet milk twice a week for two weeks. Santonin and calomel is an excellent remedy.

Bruised Leg—Pinworms.—Early last fall my four-year-old mare kicked through stall partition, bruised leg below hock, causing quite a swelling, which with rest and treatment she got pretty well over, but when allowed to stand in stable leg stocks. Also have a last spring's colt that backs up against fence and is inclined to rub tail. Would like advice regarding both animals. R. V., Capac, Mich.—Apply equal parts tincture iodine and camphorated oil to bruised parts of leg once a day and give her a teaspoonful of acetate of potash in feed or in her drinking water once a day. Wash out rectum of colt with one part coal tar disinfectant and fifty parts water occasionally. Also apply some to scalp of tail daily.

Obstructed Teats.—I have a heifer three years old, had calf last summer; since then a lump came, which obstructs the free flow of milk through teat. A. V. S., Deckerville.—Paint over bunch with iodine ointment every day or two, this can be obtained at any drug store.

Split Tooth.—Have mare that spits out food, and our local veterinary tells me that she has a split tooth. He pulled one of her grinders, told us to feed her plenty of oats, but she fails to digest them. E. S. S., Kalamazoo, Mich.—Feed her cut and ground food and she will soon pick up.

Young Cow Fails to Come in Heat.—I have a three-year-old heifer that had calf last spring. Since then she has failed to come in heat. W. O'C., Fenton, Mich.—Give her half dram of ground nux vomica and one dram of ground capsicum at a dose in feed three times a day.

Weakness.—Recently we lost two calves, both were from two-year-old heifers, and both calves were carried 280 days, but were thin and weak when they were born. Both died before they were two days old. Do you believe the bull at fault? R. B., Albion, Mich.—Your calves died the result of weakness, not disease.

COMBINATION SALE

WEDNESDAY, APRIL 7TH, AT 1 O'CLOCK

Located 11 miles N.W. of Jackson, 9 miles S. E. of Springport, 1 mile N.W. of Minard Mill, on Jackson-Springport State Road.

Closing out my entire herd of grade cows. One Registered Angus bull, 2 yrs. old. Lord Elbert, No. 261720. Will also include 12 head of

REGISTERED HOLSTEINS

- No. 1.—Netherland Helen Sherlock No. 401392, 2 yrs. old, due to freshen in March.
No. 2.—Violet Lilith De Kol, No. 401394, fresh. Has just made a seven-day A. R. O. of 325.0 lbs. milk, 13.098 lbs. butter at the age of 2 yrs., 3 mos., 25 days.
No. 3.—Daisy Barteena, No. 469617, 2 yrs. old, due to freshen in April. She has an own sister, as Senior 2-yr.-old with A. R. O. record of 407.5 lbs. milk, 17.63 lbs. butter in seven days.
No. 4.—Lady Barteena Dinola No. 34110, 4 yrs old, due to freshen October 1. Own sister to heifer above.
Five Heifers and Three Bulls Sired by Colantha Coronis Papline King No. 181361, a 24-lb. grandson of Colantha Johanna Lad.
No. 1.—Herd-book, No. 469618, his first heifer to freshen has just made an A. R. O. record at the age of 18 mos. (no days) of 240.8 lbs milk, 9.043 lbs. butter.
No. 2.—Born April 19, 1919, 100 per cent same blood as the one above.
No. 3.—Born Aug. 23, daughter of an A. R. O. cow.
No. 4.—Born Sept. 1. Two half-sisters with A. R. O. records.
No. 5.—Born Sept. 23. Own sister to heifer No. 1.

THREE BULLS

- No. 1.—Born Sept. 8. His dam has an own sister with an A. R. O. Senior 2-yr.-old record of 407.5 lbs. milk, 17.63 lbs. butter.
No. 2.—Born Nov. 2. His dam has an A. R. O. record of 449.9 lbs milk, 20.53 lbs. butter in seven days. She has one daughter and one grand-daughter with A. R. O. records, and she is now on Semi-Official test.
No. 3.—Born Jan. 6, 1920. Close related to bull No. 1.
Herd Tuberculin-tested under State and Federal. Will also include 22 hogs. Livery from Rives Jct. and Parma at 9:00 to 12:00 A. M.

VERNON E. CLOUGH, R. 2, Parma, Mich.

O. I. C. SOWS FOR SALE

One of the Best Herds in Michigan
Spring gilts and fall yearlings bred for March, April and May litters. I ship C. O. D., pay express and register in buyer's name. If you want a BIG TYPE sow, guaranteed right in every way, write me.

J. CARL JEWETT, R. 5, Mason, Michigan.

MICHIGAN LIVE STOCK INSURANCE COMPANY

INDEMNIFIES Owners of Live Stock — Horses, Cattle, Sheep and Hogs
Against Death by Accident or Disease
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THE BIG MICHIGAN COMPANY

A great deal of farm property never has been insured for what it ought to be. But now since the great advance in building material and labor, most farm buildings do not carry one-half what they should.

Farmers' household goods is another class of property that is woefully under insured. In case of total loss, these household goods could not be replaced for two or three times the insurance now carried.

It is not wise (an old saying) to put all your eggs in one basket. It is not bad business, therefore, to have insurance in more than one company. It is not necessary to disturb your present insurance. Keep that, but properly protect your property by taking out additional insurance in a good, big, safe, well managed company.

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Houseman Building, GRAND RAPIDS, MICHIGAN

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Wednesday afternoon, March 24.

WHEAT

Market strength is due to twenty-five per cent less acreage of winter wheat, large area of abandoned wheat in the west, and a reduction in the area to be devoted to spring wheat. Prices are advancing. The flour market is unsettled. Detroit prices are: No. 1 red \$2.52; No. 1 mixed \$2.50; No. 1 white \$2.50; No. 2 red \$2.49.

CORN

Unfavorable conditions for wheat in Kansas and Nebraska is strengthening corn. Receipts also have been light and export demand is developing with the improvement in foreign exchange. Farmers will soon be at their spring work which will reduce offerings at country elevators. Following are the latest Detroit prices:

No. 3 corn \$1.61; No. 3 yellow at \$1.66; No. 4 yellow \$1.61; No. 5 yellow \$1.56; No. 6 yellow \$1.53.

OATS

Supplies are short and receipts are small. Detroit cash prices are: No. 2 white 99c; No. 3 white 98c; No. 4 white 97c.

RYE

While domestic conditions have improved the situation in this market, export demand and buying have forced values to a higher level. At Detroit cash No. 2 is now selling at \$1.78.

BARLEY

The volume of business has been comparatively small but this deal has absorbed strength from other grains and the market holds firm at Detroit with cash No. 3 at \$3@3.25 per cwt.

BEANS

The bean situation shows but little change from previous weeks. Trading is dull, which is attributed largely to lack of consumptive demand at home and scarcely no export outlet. At Detroit the board quotes cash beans at \$6.50 per cwt., the same as a week ago. The New York market quotes choice pea beans at \$7.25@7.50 and common to fair do at \$6.75@7. The Chicago market is quiet and steady, with choice to fancy hand-picked pea beans at \$6.75@7.25 and red kidneys at \$13.50@14.

SEEDS

Prices rule slightly higher than a week ago, although the demand early this week was somewhat quiet. At Detroit prime red clover is quoted at \$34.50; alsike \$36; timothy \$6.40.

FEEDS

The production of feed continues light and with an improvement in the demand, prices are firmly maintained. At Detroit quotations are: Bran \$53; standard middlings \$55@56; fine middlings \$58@59; coarse corn meal \$69; cracked corn \$70.50; chopped \$59@60.

HAY

The shortage of cars is holding back shipments. Prices are firm. On the Detroit market quotations are: No. 1 timothy \$33.50@34; standard \$32.50@33; light mixed \$32.50@33; No. 2 timothy \$31.50@32; No. 1 mixed and No. 1 clover \$31.50@32; rye straw \$13.50@14.

POTATOES

The general movement of potatoes is moderate. Markets are strong and higher with U. S. Grade No. 1 selling in Detroit at \$8.50@9 per 150-lb. sack; in Cleveland \$8.75; in Pittsburgh at \$8.65@8.75; in Chicago \$5.85@6 cwt.

BUTTER

Butter markets rule firm with the close of last week. At Detroit fresh creameries are quoted at 66@67c; in Chicago 52@68c; in Philadelphia western creamery extra 70c, and in New York creameries range from 64@69½c.

EGGS

The local market is firm at 44@45c. In Chicago firsts are 44@45c; ordinary firsts 41@42c. The New York market is firm and trading at Philadelphia is steady with western firsts bringing \$14.40 per case.

WOOL

Trade is quiet in the primary markets of the country. The basis recently established in Arizona is considered by some as too high, others are looking for an advance. Considerable discussion pro and con has been heard regarding this point, but the solution will not come until the movement in the primary markets has become more general. Shearing will be started soon in southern Utah and New Mexico. A considerable part of the Nevada clip is reported to have been put under contract. What the basis will be for fine wools in the fleece states is a matter claiming much attention. The opening figures, in the opinion of some factors, will be ninety cents a pound. Whatever the price may be there is no question in the minds of the trade about the disposition of all the fine wool without difficulty. The hitch in handling the 1920 domestic clip comes in the case of medium sorts, these still being a doubtful quantity because the manufacturers have shown no disposition to get away from their present attitude toward them. A little has been done in territory three-eighths blood wool within the week on the basis of \$1.25 per scoured pound. Quarter-blood fleeces have been sold in scattered lots on the basis of 65 cents for wools outside of Ohio.

GRAND RAPIDS

The first of this year's make of maple syrup was marketed this week, makers being paid \$3 per gallon. The Michigan Maple Syrup Association announces it has contracts with many

makers better than \$2.75 per gallon. The association has a standing market for all the syrup it can secure and can guarantee a minimum of \$1.75 in barrels, equivalent to about \$2.50 in cans, when extra cost for canning is considered. It offers \$1.10 in barrels for "buddy" or scorched. The egg market is lower this week at 42c bid. Owing to weather conditions receipts are light. Indications are that Aprils will start around 38c for storage. Potato market is strong at \$3@3.25 per bushel, jobbing. Michigan Potato Growers' Association states there is a scarcity of western potatoes and Michigan is now supplying practically all the country. Prices will stay firm it says, around \$5 per cwt. To stabilize the potato market in the Grand Rapids market area, an arrangement has been made by farmers with the Grand Rapids Growers' Association this week for conducting a cooperative warehouse and marketing service. Timothy seed is a little lower this week at \$7.25 per bushel retail. Clovers are unchanged. Mammoth \$40 and medium at \$38.50. Farmers resumed marketing hay this week. City market price is \$28 for timothy.

NEW YORK PRODUCE MARKET.

Butter.—The market has been keenly sensitive all the week and the price tendency has been upward. Increased receipts are due to the arrival of delayed shipments. It is generally admitted that the production is less than one year ago. Undoubtedly there will be quantities of foreign butter import-

ed this year which will more than offset any shortage that may have threatened because of decreased production in this country. But little Danish butter arrived in the market this week, only 400 casks having been reported so far. Government reports, however, state that a vessel is now on the ocean bearing better than two and one-fourth million pounds of Danish butter to this port. Some of that butter will be re-consigned to Cuba and other tropical countries. Storage stocks are selling rapidly, the total butter in storage at present being now considerably less than one year ago. The price of butter has advanced about 1½c during the week. Quotations are: Extras 68½c; higher scoring than extras 69@69½c; firsts 64@68c; seconds 59@63c.

Cheese.—There has been but little change in the cheese situation since last week. Values have not changed. Local consumption continues to be good and there is some export demand, especially for under-grade stock. Some current make cheese is being received but as yet in no considerable quantities. Quotations on held cheese are: Fair to good 22@27c; average run 28@29c; specials 29½@31c.

Eggs.—The egg market has strengthened considerably during the week, due to falling receipts which has been brought about by shippers sending by freight rather than by express as formerly. Demand has been especially keen and there has been insufficient supply to meet it. The total gain in price is about 4@5c. Quotations today: Extras 48½@49c; extra firsts at 49½@50c; extras 51@52c.

Poultry.—The poultry market has been very strong and active during the week and prices have advanced. Receipts have been light and consumption has been high. All classes of poultry are selling several cents higher than one week ago. Established quotations are: Chickens 35@38c; fowls 46@48c; old roosters 26c; turkeys at 45c; ducks 40c; geese 20@22c.

CONDENSED MILK SITUATION.

The exchange situation continues to prove a barrier to export business in condensed milk. The fact is, exporters have practically ceased placing orders for condensed milk. Manufacturers of that product are facing a very serious situation as all ports contain excessive accumulations of stock and interior points are clamoring to be relieved of the quantities which they have which are filling up all of their available storage space. It is a question, which condensed milk manufacturers must soon solve, whether there are not too many manufacturing plants engaged in the condensing of milk for the demand for that product. During the war, with vast armies in the field and with strong demand from non-combatants plants were taxed to the limit of their capacities, but now the situation is very materially changed.

The domestic demand for condensed milk continues normal, that being a factor which varies but little from year to year. The only demand from an exporting source is from the American Relief Society which is supplying some of the war devastated cities with milk. However, the orders placed by that society are comparatively very small and do very little to relieve the situation. The demand which prevails at present is for case goods, bulk milk being a drug on the market. Without doubt, with the coming of summer and with the coming of the usual summer demand for ice cream the situation will be relieved considerably, but at present there is a very decidedly unsettled feeling in regard to the market.

ELEVATORS TO FORM EXCHANGE.

A meeting of members of boards of directors and authorized representatives of the seventy-five odd cooperative elevators operating in the state has been called by the Michigan State Farm Bureau to be held in Saginaw on March 30-31, for the purpose of considering ways and means of co-ordinating the various lines of work of these farmer-controlled institutions and avoiding competition, both in buying supplies and in selling.

Live Stock Market Service

DETROIT

Cattle.

Receipts 2,558. Canners and bulls steady; others are \$1 lower than last week. Best steers \$11.25@11.75. Best handy wt bu steers 10.25@10.75. Mixed steers and heifers 8.75@9.25. Handy light butchers 7.50@7.75. Light butchers 7.00@7.25. Best cows 8.25. Butcher cows 6.75@7.00. Cutters 5.50@6.00. Canners 4.50@5.00. Best heavy bulls 8.50@9.00. Bologna bulls 7.50@8.00. Stock bulls 7.00@7.50. Feeders 8.50@9.25. Stockers 7.00@8.25. Milkers and springers \$65@150.

Veal Calves.

Receipts 1,508. Market \$1 lower. Best \$21.00. Others 10.00@18.00.

Sheep and Lambs.

Receipts 1,616. Good lambs are 50c higher; sheep and common lambs are steady. Best lambs \$19.50. Fair lambs 17.50@18.50. Light to common 12.50@15.50. Fair to good sheep 12.00@13.50. Culls 5.00@7.00.

Hogs.

Receipts 5,582. Market about 15@25c lower. Mixed hogs \$16.00@16.15. Pigs 16.25. Heavies 15.75.

CHICAGO

Hogs.

Estimated receipts today are 23,000; holdover 13,091. Market slow and unevenly 10@25c lower. Bulk of sales \$14.50@16; tops, early \$16.25; heavy 250 lbs up, medium, good and choice \$13.90@15.50; medium 200 to 250 lbs, medium, good and choice \$15@16.10; light 150 to 200 lbs, common, medium, good and choice \$15.50@16.20; light lights 130 to 150 lbs, common, medium, good and choice \$14.90@15.80; heavy packing sows 250 lbs up, smooth \$13.25@13.65; packing sows 200 lbs up, rough \$12.65@13.15; pigs 130 lbs down, medium, good and choice at \$13.50@15.50.

Cattle.

Estimated receipts today are 7,500. Market steady, calves 50c lower. Beef steers, medium and heavyweight 1100 lbs up, choice and prime \$13.50@15.25; do medium and good \$11.50@13.50; do

common at \$10.25@11.50; light weight 1100 lbs down, good and choice at \$12@14.75; do common and medium \$10@12; butcher cattle, heifers, common, medium, good and choice \$7.40@13; cows, common, medium, good and choice \$7.40@11.75; bulls, bologna and beef \$7.50@10.85; canners and cutters, cows and heifers \$5@7.35; do canner steers \$6@7.75; veal calves, light and handyweight, medium, good and choice \$17@18.50; feeder steers, common, medium, good and choice \$9@12; stocker steers, common, medium, good and choice \$7.65@11.25; do cows and heifers, common, medium, good and choice \$7.50@9.40; do calves, common, medium, good and choice \$8@11.50.

Sheep and Lambs.

Estimated receipts today are 8,500. Market steady to strong. Lambs 84 lbs down, medium, good, choice and prime \$17.50@20.25; do culls and common \$14@17.25; spring lambs, medium, good, choice and prime \$15@18; ewes, medium good and choice \$11@15; ewes culls and common \$6@10.75; yearling wethers, medium, good and choice \$15.50@17.

BUFFALO

Cattle.

Yesterday's prices are: Prime shipping steers \$14@14.50; best shipping steers \$12.50@13; medium shipping steers \$12@12.50; Canadian heavy steers \$12.50@13.50; Canadian steers and heifers \$10.50@11.50; best native yearlings 950 to 1000 lbs \$12@13; light native yearlings, good quality \$12@12.50; best handy steers \$11@12; fair to good kind \$10.50@11; handy steers and heifers, mixed \$11@12; western heifers \$11@11.50; state heifers \$10@11; best fat cows \$10@11; butchering cows \$8@9; cutters \$6@7; canners at \$4.50@5.25; fancy bulls \$9@10; butchering bulls \$7.50@8.50; common bulls \$6.50@7.50; best feeders 900 to 1000 lbs \$9.50@10; medium feeders \$8@9; stockers \$6.50@7; light common \$6@6.50; best milkers and springers \$10@15; medium \$6.50@9.

Hogs.

Today mediums and heavy brought \$15.50@16.75; mixed and yorkers \$17@17.50; pigs and lights \$16.50@17.

Sheep and Lambs.

Market steady. Top lambs \$20@20.75; yearlings \$17@18.25; wethers \$15@16; ewes \$14.50.

Calves.

Best calves \$22.50; fair to good \$17@20; grassers \$6@8.

The HORSE INDUSTRY.

THE Horse Association of America, recently organized by leading interests of the United States, issues through Wayne Dinsmore, its secretary, this statement: "Demand and price for good horses and mules are increasing in cities, and the farm demand is improving. There is a shortage of good horses and mules of all kinds. City trade is improving because transportation users of all kinds have discovered after years of experience that horses furnish the cheapest source of power on short hauls. There is work that the horse cannot do—long distance hauling with rapid transportation—but the motor can never take the place of the horse because the horse can do the work on short hauls just as rapidly and at a lessened cost of twenty-five to forty cents on the dollar. The best thing a farmer can do this spring is to breed his good mares to a first-class stallion. Farmers are determined bidders in country sales, and good horses have gone up \$35 a head in the last thirty days, while mules are now bringing from \$800 to \$1,000 a pair.—F.

MICHIGAN COOPERATIVE CROP REPORTING SERVICE.

(Continued from page 496).

March 1; 990,000 marketed during July, 1919, a part of which was wheat carried over from the 1918 crop; we have a total of 20,505,000 bushels. This represents the total available crop of 19,285,000 bushels of winter wheat, 952,000 bushels of spring wheat, and 268,000 bushels of old wheat on the farms July 1, 1919.

Oats.—The amount on farms is 12,538,000 bushels as compared with 26,528,000 one year ago. This unusually low supply is due to the light crop of last year. In many northern counties there is practically none on hand now and many other sections that usually produced enough for local needs will have to buy before the new crop is available.

Barley.—Barley stocks, like those of oats, are light. The amount on farms is 1,170,000 bushels as compared with 2,430,000 bushels one year ago. The crop was not only light but it has been used more generally for feed than ever before, being substituted in many cases for high-priced commercial stock feeds.

Notwithstanding the unprecedented movement of people from the farms to the cities, and the consequent throwing onto the market of a large number of farms throughout the state, prices have gained over last year. The increase is in keeping with that of recent years, while well-improved farms have made a greater gain than heretofore. The relatively low prices in Michigan are proving attractive to buyers from other states where the advance in values came earlier. The average value of improved farms in Michigan is \$87 as compared with \$80 one year ago. This is considerably below the average for the United States which is \$99.24. Farms without improvements have an average value of \$56 per acre as compared with \$54 last year and a United States average of \$74.41. Good plow lands are worth \$80 per acre, or \$4.00 more than one year ago.

COMING SALES.

Shorthorn, March 30, L. H. Leonard, Caledonia, Mich.
Shorthorns, March 31, W. F. Brickley & Son, Ionia, Mich.
Holstein, April 1, Dwight G. Rapp, Lansing, Mich.
Holsteins, April 2, Pardee Bros., Galien, Mich.
Holsteins, April 3, Dudley & Roice, Oberlin, Ohio.
Holsteins, April 7, Vernon E. Clough, Parma, Mich.
Holsteins, April 8, Mortimer Carter & Sons, Flint, Mich.
Holsteins, April 12, John P. Olcott, Perry, Mich.

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Remember! We guarantee your satisfaction with every shipment.

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Detroit, Mich.

"Enough Said!"

Ship to The Old Reliable House
Daniel McCaffey's Sons,
621-625 Wabash Bldg., Pittsburg, Pa.

WANTED hay, corn and potatoes,
White, best cash prices,
to box 926 St. Albans, W. Va.

CATTLE

Two Holstein bull calves, one sired by Long Beach De Kol Komdyke 88198, his dams record, Butter 7 days, 30.86; Butter 30, 21.55; Butter 35 days 122 lbs. (average per cent fat 4.5). Also one calf from another good bull, both bulls are good size from good large cows. Reasonable Prices. Box 47, Free Soil, Mich.

HOGS

DUROC JERSEYS

Gilts bred for March and April farrow, & Guaranteed back of every Sow Sold.
F. J. Drott, Monroe, Mich. R. 1.

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

Duroc Jersey, Bred sows and gilts April and May farrow. Sired by or bred to my 1000 lb. herd boar J. S. SCHUELLER, Weidman, Mich.

Duroc bred sows and gilts sired by Orion Cherry King Col. 2nd, bred to All Col. of Saginaw 2nd. First class lot, reasonable. W. C. Taylor, Milan, Mich.

DUROC GILTS. Bred and open. Real ones at fair prices.
BOARDMAN FARMS, Jackson, Michigan.

DUROCS for Sale Bred sows and full pigs of both sex and a car of grade draft colts.
CHAS BRAY, Okemos, Michigan.

Chester Whites spring and fall stock for sale either sex. At Saginaw fair we won highest honors against strong competition.
F. W. ALEXANDER, Vassar, Mich.

Raise Chester Whites

Like This
the original big producers

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

O. I. C. and Chester White Swine

Strictly Big Type with quality. Spring pigs of March and April farrow. A choice lot of boars. Will only spare a few more gilts at present. Will ship O. I. C. and record them free.
Newman's Stock Farm, Marlette, Mich. R. No. 1.

O. I. C. and Chester White Swine booking orders for spring pigs from big type blood lines. Fall pigs with size and quality. I ship O. I. C. and register in buyer's name. John C. Wilk, Alma, Mich.

O. I. C's. 2 extra choice last spring gilts. 11 last fall boars wt. 175 to 250 also fall gilts the best I ever had. Farm 1/2 mile west of Depot, Citizens Phone 124. OTTO B. SCHULZE, Nashville, Mich.

O. I. C's Am offering a few September pigs that combine size and quality.
O. J. THOMPSON, Rockford, Mich.

O. I. C's. Big type gilts, fall yrs., tried sows, Mar. Apr. farrow. Summer and fall pigs. I pay exp., reg. free, satisfaction guaranteed. G. P. Andrews, Dansville, Mich.

O. I. C. Gilts bred for March and April farrow. I pay express and register in buyers name. H. W. MANN, Dansville, Mich.

O. I. C's Have some Choice Spring Gilts, bred for spring farrow.
THAYER BROS., R. 1, Mason, Mich.

O. I. C. Gilts bred for March and April farrow, guaranteed safe with pigs. Fall pigs and a few service boars. Herd improved by D. T. F. C. Burgess, R. 3, Mason, Mich.

O. I. C. choice gilts bred for March, April and May farrow and fall boars. Am booking orders for spring pigs. A. J. Barker & Son, Belmont, Mich.

O. I. C's Choice bred gilts, 2 extra fine service boars, choice Sept. pigs either sex or pairs.
CLOVERLEAF STOCK FARM, R. 1, Monroe, Mich.

O. I. C. Choice gilts bred for April and May farrow.
W. B. McQUILLAN, R. 7, Howell, Mich.

LOOK B. T. P. C's We are selling at a great sacrifice for the next 10 days extra good gilts to farrow in Apr. choice fall pigs to make room for our herd sows.
W. BREWBAKER & SONS, Elsie, Mich.

L. S. P. C.

2 choice spring boars and 2 nice fall boars left, a few extra nice gilts left bred for April farrow.
H. O. SWARTZ, Schoolcraft, Mich.

FOR Sale—Large Type Poland China Gilts, bred for April farrow. Inspection invited. Free livery from Manchester. A. A. Feldkamp, R. 2, Manchester, Mich.

MILLER Meadows L. T. P. C. boars all sold. Gilts Mated by General Jones and bred to our young boar Alaska, address CLYDE WEAVER, Ceresco, Mich.

For Sale

Two Bred Poland China Gilts
Litter mated, farrowed Apr. 3, 1919. Choice individuals and choice Big Type breeding. Weighed March 10, 30 lbs., not fat. Bred for Apr. 7 and Apr. 23 respectively.
WESLEY HILE, R. 6, Ionia, Mich.

Boars also sows and pigs. Real Big Type Poland B Chinas. Bred big for 25 years. Sired by Mich. Buster by Giant Buster, litter 14 out of Mouw's Miss Queen 2nd, some breeding, also by Butler's Big Joe by Rust's Big Joe, out of a Wonder Queen, and said. Write us your wants, we will treat you right, our prices are low.
J. C. BUTLER, Portland, Mich.

Big Type Poland Chinas. Sired by Smooth Mastodon litter mated to the Ill. Grand Champion. The big boned, deep, long bodied kind at a farmer's prices. Wah-be-me-me Farms, White Pigeon, Michigan

LARGE Type P. C. the largest in Mich. Spring boars now ready to ship. Boars for the breeders and boars for the farmers. Come and see the real large type with quality. Free livery from Parma furnished visitors. Look up my exhibit at the Great Jackson Co. Feb. 10 to 12th, expenses paid if not as advertised. W. E. Livingston, Parma, Mich.

Big Type Poland Chinas with quality, at reasonable prices. Pigs of both sex, and bred sows and gilts.
G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Big Type P. C. Bred gilts, Fall yearlings, prize winners, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

L. T. P. C. Spring gilts ready to ship also fall pigs both sexes. P. R. ALEXANDER, R. F. D. 6, Albion, Mich., Bell phone 845FII.

B. T. P. C. Gilts sired by Big Giant and C's Orange. Bred to C's Orange and Col. Jack Jr. No better breeding to be had. L. L. Chamberlain, Marcellus, Mich.

LEONARD'S B. T. P. C. bred sows all sold. Order booked for boar pigs at weaning time from Mich. Champion Herd. E. R. Leonard, R. 3, St. Louis, Mich.

U. S. FIGURES SHOW

a shortage of 2,578,000 hogs, over Jan. 1, 1919. Just figure a moment what this will mean to the farmer. Constructive breeder of Poland China Hogs.
O. A. BOONE, Blanchard, Mich.

M. R. P. C. Breeder if you want to get in the King row. Buy a Gilt bred to Big Bol Mastodon, more Grand Champion Blood in his veins than any other Boar in Michigan. C. E. Garnant, Eaton Rapids, Mich.

I am offering Large Type Poland China Sows, bred to P's Orange, at reasonable prices; also fall pigs. Write or call Clyde Fisher, St. Louis, Mich. R. R. 3.

6th ANNUAL P. C. Bred Sow Sale March 13, 1920. For particulars write
W. J. HAGELSHAW, Augusta, Mich.

Large Type Poland China Stock Hogs and Bred gilts
E. H. EISELE, R. 2, Manchester, Mich.

B. T. P. C. All sold out except some Fall Gilts, Thanking my customers.
JOHN D. WILEY, Schoolcraft, Mich.

Large type P. C. Bred Sows and a few choice Fall boars. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

Tamworths The great bacon breed. Some good registered gilts bred to March farrow, also fall pigs. W. H. WARNER, Concord, Mich.

A FEW NO. 1

Fall boar pigs left. Pairs not akin. A few tried sows bred. Booking orders for spring pigs. Large type, winning blood lines. Satisfaction guaranteed.

STEBENS HAMPSHIRE FARM

R. R. 3, Angola, Ind.

Pine Grove Hampshires, "Quality First" Michigan Boy, Grand Champion boar of Michigan, Bred and owned by us. Many other prize winners at Michigan State Fair 1919. Hog's for sale all ages, both sex. "Lookout Joe", a \$1000 boar heads our herd. GEO. COUPAR & SONS, R. 1, Marlette, Mich.

Hampshire pigs of quality. Send me your order for Spring pigs. Satisfaction guaranteed or money refunded. A. E. TREBICE, Bentley, Mich.

Bred Gilts all sold at present and more later. Spring pigs in season.
JOHN W. SNYDER, St. Johns, Michigan.

SHEEP.

KIDS

I cannot sell you any more ewes until next fall. To some grown up, I can offer 10 very good young Shropshire ewes that will lamb in April for \$400.00. Their lambs contracted to me should not more than purchase price next fall. Also 10 mighty nice ewe lambs for \$350.00. Come and see them.
S. L. WING, KOPE-KON FARMS, Coldwater, Mich.

BUY A SHEEP

Wait a minute, buy Hampshires. The American Hampshire Sheep Association wants to send you a dandy little booklet with list of breeders. Some near you. Write COMFORT A. TYLER, Secretary, 22 Woodland Ave., Detroit, Mich.

Idle Wild Stock Farms Shropshire yearling rams from prize winning stock. Make your selection early. Cliff Middleton, proprietor, Clayton, Mich. R. 3.

250 Reg. Shropshires offered past season all sold. After Aug. 1st can supply any thing needed. Registered Shropshire ewes and rams of same high quality. C. LEMEN, Dexter, Mich.

Cotswolds ewes bred to one of Canada's best rams, start right buy good ones while they can be had. A. M. BORTEL, Britton, Mich.

HORSES

BELGIAN DRAFT HORSES

We have the best and largest herd in the world to select from, with Grand Champions heading our herd.

We won more premiums at the International Belgian Horse Show, Waterloo, Iowa, 1919 than any other breeder or exhibitor, competing against 25 exhibitors from Iowa, 3 from Indiana, 1 from Illinois and 1 from Canada.

We have sold 4 winners at the International Belgian Horse Show to an Iowa breeder. Those horses winning again at the International Live Stock Show at Chicago the same year.

We are listing mares of Iowa breeders and breeders from other states, to be bred to our Rubie 8004, whose offspring won at both International this year, taking some of the highest honors in stallion and mare classes.

We can sell you a carload of stallions and mares or just one of either sex.

We invite your inspection and will meet you at any of the railroad stations if you will write us in time.

Come to Burt, Michigan, via Grand Trunk Railway or to St. Charles, Michigan, via the Michigan Central Railroad.

We are in the market for Registered Belgian Draft Colts

Owosso Sugar Company
Prairie Farm

ALICIA, Saginaw County, MICHIGAN

For Sale

A few more of those big boned Percheron colts including Sever's largest three year old in Michigan.
CHAS. OSGOOD & SONS, Mendon, Mich.

Percheron Stallions and mares at reasonable prices; inspection invited.
F. L. KING & SON, Charlotte, Mich.

Percheron Stud. Good drafter, steel gray three years old. Ancestors were prize winners. Price \$500. E. J. Aldrich, Tekonsha, Mich.

Flash Light and Battery

Yours Without Cost

The best flash light money can buy. 6 1/2 inches in length, comes equipped with 2-cell battery ready for use. Throws a clean, white light that wind cannot blow out. Lessens fire risks. Just the thing to light you on your short trips to barn and cellar.

If you will send us two yearly subscriptions your own may count as one, accompanying order with \$2.00 remittance.

we will send you this Handy Flash Light ready for use all charges prepaid.

THE MICHIGAN FARMER,
Detroit, Michigan



Time to Re-tire?
(Buy Fisk)

THE FISK RUBBER COMPANY

OF NEW YORK

FISK TIRES

TIRE SUNDRIES

CHICOPEE FALLS, MASS.

PLEASE ADDRESS REPLY "ATTENTION OF

TO THE CAR OWNER:

I wish it were possible for me to meet you personally, to say directly to you some of the things I would like you to know.

If you could conduct an investigation as to which tire commands the greatest good will of its users I honestly believe you would find it to be the FISK.

In the first place, the tire is a good one. I not only think that but I know it. It is built to a high standard. The quality and construction are right and the types of FISK TIRES are generously oversized.

While FISK TIRES are sold through dealers only, we have a big chain of our own branches, one hundred and forty of these being so distributed that all dealers in the United States are within quick reach of Fisk fresh stock.

Each one of these branches is in charge of a Fisk man who is on his tip-toes to see that all dealers and users in his territory are pleased with FISK TIRES.

In direct distribution facilities and in our attitude to our dealers and to you who use tires, we have a place distinctly our own.

In volume of production and in years of experience we are among the small group that leads the whole tire industry.

I personally have seen, in my twenty years' association with The Fisk Rubber Company, its business grow from two-thirds of an acre of floor space to thirty-one acres of floor space and from an annual business, in 1900, of less than \$90,000 to very close to \$50,000,000 in 1919.

Our Ideal, - To Be The Best Concern In The World To Work For and The Squarest Concern In Existence To Do Business With, - is a true indication of our aims and policies.

Ask your dealer about Fisk Tires.

Very truly yours,

E. H. Broadwell
Vice President & Gen'l Manager.

EHB:M