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DETROIT, MARCH 15, 1919



CURRENT COMMENT

Let Us Reserve Judgment

THOUGHT and reflection are ever conducive to wisdom. And there was never a period in world's history, or certainly never in the lives of the present generation, when careful thought and dispassionate reflection on the part of the average American citizen was more important to the future welfare of our country and the world than is the case at the present time, when vital issues of stupendous importance are pending. Of the many grave questions of public policy which are engaging our attention at the present time, no other approaches in its tremendous importance to the future of the United States and its people that of our action regarding the proposed plan for a League of Nations as submitted by the committee of the Peace Conference.

Every right-thinking citizen earnestly desires that the horrible war, which has left large sections of the world tottering on the brink of the submergence of civilization, may bring in its wake some feasible means of preventing like catastrophes in the future. And our zeal in this direction is prone to win our hasty approval of the first plan offered with this object in view. But whether American can safely undertake the grave responsibilities which would devolve upon her and emerge unscathed from the complications in which the acceptance of the proposed plan would involve her is a most serious and as yet unsettled problem. And until we are better informed as to the probable effect upon our country and its government of the adoption of this plan, it is the part of wisdom to think, reflect and withhold final judgment in the matter.

It has been remarked that those who have expressed opposition to the plan as submitted were not united in their proposals for its betterment. Radical differences embodied in the most constructive criticisms of the plan have been pointed out as an argument for their dismissal from consideration. But when it is recalled that the plan is the result of weeks of deliberation and compromise on the part of its framers, while the criticisms are the

result of individual consideration of the plan as a whole, this divergence of views is not only natural but inevitable.

The resolution offered by Senator Lodge, published in these columns last week, may properly be looked upon as a crystallization of opinion among men who have a broad knowledge of American institutions and ideals and foreign complications and intrigue, and as such is worthy of our most serious and thoughtful consideration. The fact that so many members of the senate voluntarily indorsed it indicates a courage of conviction on their part wholly above mere political considerations. Nor does approval or opposition to the plan follow partisan lines. Strong men in both parties are as outspoken in their opposition to the plan as others are in its favor. And reflection will remind us of the fact that many of these men have, during their public careers, gained a knowledge of world affairs which has peculiarly fitted them to judge our proper course in the present emergency.

The multitudinous jealousies, envies and aggressions of the many countries and races of Europe and Asia, which have survived the ages, will not soon, if ever, disappear. The average American is but just commencing to learn of them. We are not yet sufficiently familiar with the problems involved to render intelligent judgment as to whether we desire to become involved in them in the future and if so in what manner and to what extent.

In grave crises, involving the principles of liberty or humanity our people have never failed to act, and with practical unanimity of purpose. Such action in this great war has saved the world a worse fate. But reflection will make it clear to us that such acts or reactions of the public conscience have never been the result of hastily formed opinion, hence the wisdom of retaining an open mind in the present grave emergency.

Marketing the Wool Crop

EVERY wool grower in Michigan should carefully read the report of the convention held at Columbus last week which appears in another column of this issue. As a means of insuring interested growers the best possible returns from their wool crop this year, plans have been made for the organization of wool growers by counties or communities for the marketing of their clip. This campaign will not be taken into any community where there is not sufficient interest manifested so as to make the results certain, but in any community where sufficient wool growers become interested to make it possible to collect and market a carload of wool, Mr. Freeman, of the Extension Department of the Agricultural College, will aid the growers in perfecting an organization for the purpose.

The best way for interested wool producers of any community to take up this proposition is through their county agent, when the extension and marketing department of the college will be called to aid them in the organization work. This plan of cooperative marketing has been a success wherever tried, and in addition to the economic benefits derived by farmers who join in such an organization, the educational benefits in having the wool graded at shipping points will be an added consideration.

State Farm Bureau

AS noted in another column, details of the organization of the Michigan State Farm Bureau were completed by the executive committee which held a two-day session last week. One of the plans adopted for the support of the work during the coming year is the creation of a guarantee fund by interested farmers of Michigan who will be asked to

lend their credit to an amount not to exceed \$50 to insure a substantial financial backing for the organization. Without question sufficient patriotic farmers of the state will meet this request and help put this organization on its feet. No movement in the interest of the farmers of the state and country has ever been more promising of beneficial results than this movement toward a country-wide organization based on the county farm bureau as the local unit. The Michigan men who have interested themselves in this organization are taking the initiative in a manner which proves beyond a doubt that the organization will be directed by farmers and purely in the interest of farmers, and in no sense under the control of the federal or state departments or under the direction of selfish interests of any kind. It is exactly the kind of an organization which can collect and disseminate information with regard to any of the state's agricultural interests, and which can lend effectual influence toward the betterment of economic agricultural conditions. This movement should appeal to every patriotic farmer in the state who should at once identify himself with his county farm bureau to the end that he may have a part in the direction of the work of this organization.

Farm Implement Prices

NOW that the war is over price adjustments are expected by people of every class. Farmers are no exception to this rule, and frequent inquiry is made with regard to the probable trend of prices for farm implements during the coming year. Implement manufacturers in every line complain that implement dealers, as well as farmers, are delaying purchases until the probable trend of prices has been determined. On the present outlook implement manufacturers offer no encouragement of relief from present prices in the near future. While labor conditions are unsettled, material reductions in labor costs have not, up to the present time, been possible, and reductions in the cost of material going into the manufacture of implements for this year's use have not materialized. In fact, implement manufacturers claim that the steel going into their goods for the present season's output is higher than it was last year, due to the fact that the agricultural implement trade was granted a preferential price of \$5 per ton below the government price of steel during the war. This preferred price was cancelled with the ending of the war. Steel prices have dropped about \$4.00 a ton during the present year, but even with this reduction, implement manufacturers claim their cost of steel is about \$1.00 per ton more than under the war price schedule. That there will be gradual future reduction of prices is to be expected when conditions are readjusted on a peace basis, but these reductions are dependent largely upon the trend of labor and material prices and are not likely to become to any degree apparent in this season's output.

The Bean Investigation

RECENT reports from Albion, New York, state that federal authorities are there investigating the alleged transaction of Lewis E. Sands, of Albion, vice-president of the New York State Bean Shippers' Association, Ben Gerks, of Rochester, formerly a broker in that city, but later bean buyer for the United States Food Administration Grain Corporation, and K. P. Kimball, formerly head of the bean division of the Food Administration at Washington.

It is alleged that these men conspired to control the handling of government beans and beans for the export trade, and the investigation is now being conducted to determine the meth-

ods employed in the purchase and storage of beans on government account at the warehouses at Albion and other points. It is reported that between three hundred and four hundred cars of beans were shipped from these points in December and that there are at present more than two hundred cars awaiting inspection and disposition by government agents.

It is to be hoped that the result of the entire investigation of the government bean purchases may be made public at the earliest possible date in order that rumors of manipulation may be substantiated and exposed or disproven, as the case may be. The bean situation should be given fullest publicity. Our patriotic bean growers are entitled to all the facts. Michigan Farmer readers will be kept advised of the developments as they may be revealed by government authorities.

News of the Week

Wednesday, March 5.

KING PETER of Serbia will abdicate in favor of Prince Regent Alexander.—It is agreed by the German cabinet that the government will not submit to coercion from the entente powers, either as regards armistice terms or final peace conditions.—Gustave Noske, German minister of war has taken measures to restore order in Berlin.—Following his address in New York City President Wilson leaves for Paris.—From 12,000 to 16,000 harbor workmen at New York docks go on strike.—Governors and mayors at Washington criticize congress for blocking appropriation legislation and other measures.

Thursday, March 6.

GREAT BRITAIN will release all Irish political prisoners.—Unless food is secured anarchy is certain to reign in Germany, according to reliable reports.—The council of the great powers has virtually agreed to form an adequate buffer state along the west bank of the Rhine to protect France against any renewed German aggression.—Three towns in southern Alabama are swept by a tornado in which at least four persons were killed and a half million dollars worth of property destroyed.—Representative Fordney of Michigan will head the Ways and Means Committee of the next congress.—The federal government will retain control of the railroads by using funds from the war finance corporation or by having the roads finance themselves through private loans.

Friday, March 7.

ABOUT 1,500 Michigan soldiers of the Eighty-fifth Division land in New York.—Famine is already upon the population of central Russia and diseases due to under-nourishment are rapidly spreading.—There were 96,468 American soldiers returned during the month of February.—Mrs. Ashbaugh, of Detroit, Mrs. Waters, of Grand Rapids, and Attorney Sampson, of Adrian, are appointed on the board of guardians of the State Industrial Home for Girls at Adrian.—The legislature will probe the state asylum at Traverse City.—Over 200 fast American fighting tanks will be used during the coming Victory Loan campaign.—The provincial treasurer of Ontario announces that the provincial war tax will be discontinued at once.

Saturday, March 8.

FRANCE is asking for a financial League of Nations to issue an international loan for the reparation of devastated France, Belgium and Serbia.—The British House of Commons is considering a bill providing for an army of 900,000 men.—A riot among Canadian troops at Rhyl, Wales, resulted in the loss of twelve lives and property damage estimated at \$250,000.—The Supreme Allied Council decides to lift the blockade on Austria to provide food for the entire population.—The Chicago Department of Health has ordered quarantined all cases of sleeping sickness.—The marine workers of New York harbor have been given an eight-hour day following which the strike was ended.

Sunday, March 9.

THE German army will be reduced to fifteen divisions and Germany is to be policed by Allied troops, according to preliminary reports on the final armistice terms.—Former Russian Ambassador Francis declares that if the Bolsheviks continue to rule in Russia then Germany has really won out during the recent war.—China asks the Peace Conference to curb Japan.

(Continued on page 437).

DEVOTED
TO
MICHIGAN

VOLUME CLII.

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A Practical Journal for the Rural Family

QUALITY
RELIABILITY
SERVICE

NUMBER ELEVEN

The High Cost of Rotted Produce

THIS article is to tell the story of waste. It will tell of food destruction almost unbelievable in amount. The things covered in this article affect the agricultural interests so vitally, and the public welfare so intimately, and the facts and instances here cited seem so indicative of radical errors in handling that the reader will state emphatically that if these things are so—then every effort must be made to remedy them.

In presenting the material at hand, I shall keep strictly in my field as plant pathologist, selecting only a small section of the big problem involved in the marketing of a sound product. In short, this article will look at the high cost of rotted produce—what it costs the farmer to ship it, and what it costs the public to have it rot—through the eyes of the plant doctor, diagnosing the ailments, pointing out their extensive ravages, and prescribing, where the facts warrant, a curative or preventive measure. The method will be to cite well authenticated instances which have been brought to the writer's attention.

Sweet potatoes in the stores have always been a high-priced food—they are selling now in East Lansing for six cents a pound. When we buy one sweet potato we pay for two that we never see. Nature grew them, labor harvested them, but they rotted long before any human being could utilize them for their intended purpose. "But," you say, "of course they did. Anyone knows that the sweet potato is a highly perishable commodity."

Right there is the hub of the whole story. The sweet potato is not a highly perishable product if you treat it right. Nature has given it a tough skin, even though she has given it a sweet flesh, readily rotted. A sweet potato is worth as much as a sound apple—but contrast the method of handling!

A sweet potato is dug and prepared for market by ignorant labor and shipped in the flimsiest of hampers or barrels. Bruised and wounded from the outset, every hamper is about one-third liability in rotted potatoes. The housewife who buys a large package of sweet potatoes at a bargain price usually loses in the transaction. The mishandled product will not keep.

I mentioned apples as a criterion for handling—but perhaps that was a trifle hasty statement. I should have said some apples. One day in August I looked over the cars of produce in the Detroit yards and although several cars of apples were in the yards, there wasn't a single first-class shipment to be found. The stuff was either rotted, bruised or wormy. There were some Keifer pears there, shipped all the way from South Carolina, and the market men were scooping them out of the car. A more rotted, slimy, wormy, maggoty mass of garbage never stood on track. The man who was found who could do this work of dumping this fruit, demanded and got a wage of \$6.00 a day. Black-rot and bulk shipments told the story.

Last summer we were in the throes of the food-saving campaign. Orators, posters, circulars, volleyed and thundered. The message brought is a peace time as well as war time necessity. And yet, in this time of "food will win the war" propaganda, I find

Careful Cultivating, Spraying, Fertilizing and Handling Would Save Millions of Dollars Worth of Perishable Produce.--By G. H. Coons.

from a semi-official government report that rotted potatoes blocked the piers of New York for five days. An embargo of five days duration had to be placed on potato receipts on seven piers in New York City to permit the cleaning up of yards and trackage congested with slimy, soft-rotted potatoes. Unless you have walked through a labyrinth of tracks in a great market like New York or Chicago, you can not conceive of the immensity of loss which such

onions were bringing a very high price. Ninety thousand sacks of onions on California docks were ruined by Black Mold in November, 1918. Eight cars shipped to New York in December were a total loss.

Cars of celery from Sanford, Florida, arrived on all markets in poor condition in 1918. As many as four cars at a time stood in the Chicago yards as a total loss. The trouble was watery soft rot. One grower, after paying the

closeness to a dozen big markets—so close that only a few days' haul will reach any of them—Michigan must be free from such reports of her own products!"

As I write I have at my hand something like two hundred reports on recent Michigan shipments. These are the reports of the Federal Food Inspections of the Bureau of Markets which have been referred by the Department of Agriculture to the Agricultural College for consideration. Taking them at random I find a car of potatoes from Grand Rapids showed six per cent of Black Heart when inspected at Buffalo. Besides the loss of the affected potatoes, this disease will cut the price of the cars anywhere from fifteen to thirty-five cents a bushel.

Here is another car with eighteen per cent Tuber Rot when inspected at New Orleans. There were two hundred and seventy-three sacks in the car—the equivalent of fifty of them worthless. They were, indeed, worse than worthless, because freight had to be paid on them and it took high-priced labor at the market to sort the good from the bad.

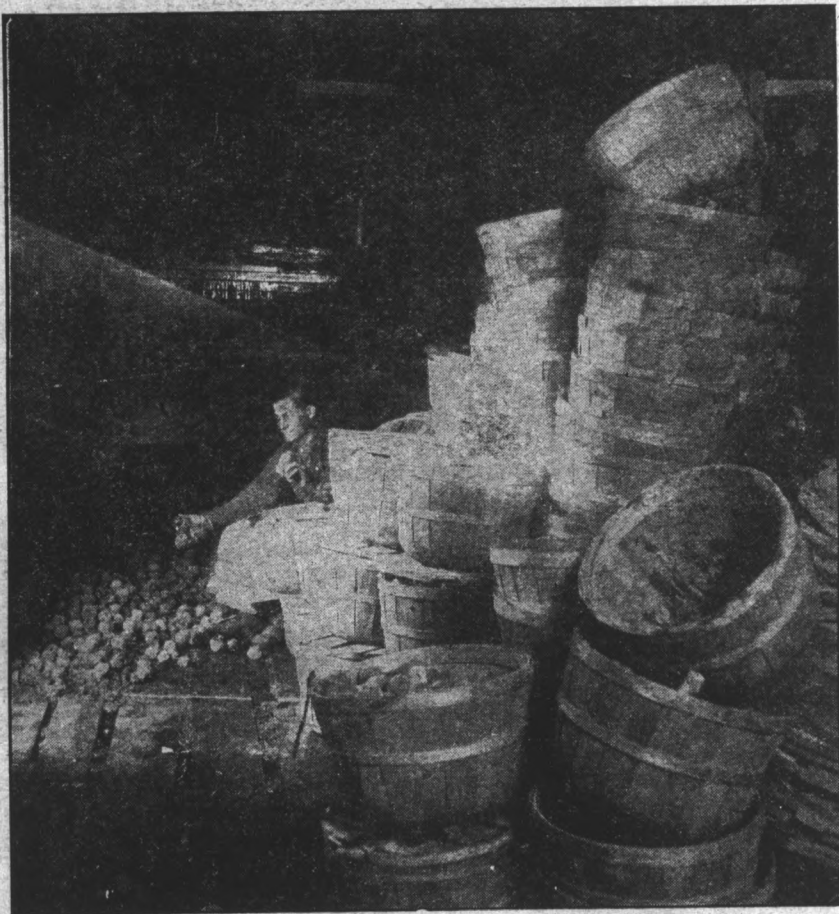
Here is a car showing Dry Rot twelve per cent, Wet Rot fourteen per cent. These were white potatoes in sacks. The wet followed mechanical cuts and frost. Fifteen per cent showed effects of having been frozen. Without stopping to fix the responsibility—here we have a worthless car of potatoes. When farmers chafe under the prices paid for produce, they must remember that the shipper is pro-rating the losses on a car like this one over the business of the year. When the public wonders at prices in the field and prices in the market—here at least is one of the many Ethiopians in the woodpile.

A Michigan car shipped from Grand Rapids showed from twelve to fifteen per cent of scab and six to eight per cent bad cuts. This car probably sold fairly well last year—Cleveland markets being good and tubers being at a premium when these arrived. But the market ratings put a tax of ten cents or more per bushel on this car on account of scab, and six to eight per cent of the tubers were culled out.

A car of onions left a town in western Michigan last year. These were yellow onions in sacks. They showed in Philadelphia markets sixty per cent Slimy Soft Rot. It doesn't take a jury to decide how much a rotted onion is worth. The question before us is—Is it worth while paying freight on it?

A car of Kalamazoo celery, "Liberty Brand," showed fifty per cent Slimy Soft Rot. The prudent housewife sees in the market "celery hearts"—they look like a bargain. The grocer has these celery hearts because the succulent outer stalks have rotted away. The thrifty "cull stock" men of the market have trimmed off the rot and the epicurean "hearts of celery" are ready. Somebody is paying for this lost celery. A car of celery from Tecumseh, Michigan, showed one hundred per cent Slimy Soft Rot when inspected in Pittsburgh. Another car, after being shipped from Manchester to Detroit, showed seventy per cent Watery Soft Rot.

A car of cabbage from Saginaw
(Continued on page 409).



This Loss of Farm Products is a Heavy Toll on the Industry.

conditions must indicate; and yet, the potato is as hardy and transportable a commodity as you would want if you treat it right. Keep it from frost, sort it up to a government standard, and you have a product ready for a trip across the continent or the ocean.

In June, 1918, as high as fifteen hundred hampers of head lettuce were dumped in Chicago. Whenever you pay from ten to twenty-five cents a head for this toothsome salad plant, just think of anywhere from three to ten heads that are not presentable because their leaves had soft rot, either in the field or car. Don't forget that your bill includes the price of these rotted ones, as well as the market man's protection against this risky commodity. Handling this product is a highly speculative business. The public pays for all market speculation.

In July, 1918, in Chicago, three carloads of onions from Stockton were dumped because of rotted condition, at a time when the market was bare and

freight and icing charges on a car, owed the Exchange \$28 on the shipment.

Six cars of egg-plants and four cars of peppers were dumped in a single day in New York City.

About twenty-five per cent of all the pineapples shipped are lost from decay between the field and market. One car received in Chicago recently showed only twelve boxes of sound fruit out of one hundred and eighty. There is a reason for pineapples being worth twenty-five to fifty cents apiece.

Florida oranges now arriving in New York are showing from fifty to fifty-five per cent damage. Blue mold rot is the principal cause. A sound orange, properly packed, is an asset to the grower—a scratched, bruised orange is a liability. Every rotted orange is considered when the great laws of trade operate to fix the price the public pays for goods.

"But," you say, "these are not Michigan shipments—Michigan with her

The Michigan Bean Situation

FURTHER emphasis should not be required to establish the just claim of Michigan bean growers who have not yet marketed their product, to a fair share of the benefit of the government order for three hundred and fifty cars of Michigan beans at \$9.25 per cwt. But the bean jobbers of the state who participated in this order have apparently decreed otherwise. Whether from cupidity, as it would appear, or from pressure of creditors, as many of them assert, the dealers have apparently determined to absorb the entire benefit of this order, instead of sharing it with the patriotic farmers of the state who so generally responded to the call for increased food production. Our current advices indicate that during the past week prices at many points in the state have been marked down to the lowest point this season, and that by dealers who participated liberally in the government order.

The Trend of the Bean Market.

In this connection the trend of the bean market at primary points since the first of the year will be of interest. Quotations for choice hand-picked beans on the Detroit Board of Trade were steady at \$9.00 per cwt. during the first three weeks of January, after which the quotation was marked down rapidly until it reached the \$6.50 mark the last week in February. Following the news of the government purchase of three hundred and fifty cars of Michigan beans on a block order at \$9.25 f. o. b. Michigan common points, the local quotation was raised, reaching a maximum of \$8.00 during the first week in March; only to be reduced again by regular steps to \$7.25 per cwt. last week. It is a matter of common knowledge that for the most part the Detroit quotations are nominal in character, more often expressing the views of the trade than being a record of actual sales. For example, early in February when the local quotation, representing nominal values at shipping points, was \$7.50 per cwt., the local office of the Bureau of Markets reported that beans were being sold to Detroit distributors in jobbing lots at \$8.50@9, and a few at still higher prices. But beans could not be moved in volume at these prices to outside markets, which fact was reflected in the progressive lowering of local quotations.

In other principal primary markets, current price history has had a similar trend. The New York market for pea beans rallied under the influence of the government purchase of Michigan stock, but last week lost most of the advance, with jobbing sales reported down to \$7.50 and some good lots offered for less. This situation is reported to be due to an increased pressure to sell, due to the small outlet for pea beans and the sluggish condition of the domestic trade.

At Chicago the feeling is more firm, due to reported strength in some of the leading outside markets. Holders are inclined to ask for better prices, but buyers are critical as to quality, which should favor the Michigan product, which is of vastly better quality this year than was the case last season.

Jobbers Playing Safe.

But it seems now too apparent, that the government purchase of nearly half of the beans held by Michigan jobbers at a price which should allow the favored dealers a profit on stocks purchased at the maximum price paid Michigan growers this year will not stabilize the present market at anywhere near that level. The most trustworthy reports obtainable indicate that jobbers are pushing remaining stocks on the market wherever possible at present quotations of around \$7.50 per cwt. delivered, and marking quotations to the growers down to a \$5.00 basis in many

cases, after absorbing their apportioned share of the profit from the government purchase, although in a few cases our reports show that dealers made an effort to stabilize values at a higher point, some even coming through with an \$8.00 quotation. But the general effect of the government order seems to have been bearish as to quotations, the evident intent of the favored jobbers being to unload present stocks at prices which will "average" them safely out of the deal and to make new purchases only on a safe discount from even present market values. While this will give growers who still have beans to sell an opportunity to sell their beans, it will be at a price so far below the cost of production as to materially discourage next year's planting.

Probably the factor of greatest influence in this determination is the quantity of beans now seeking a market in this country. Many California beans are still held by growers. Much of this stock is said to be of relatively poor quality, which is always a bearish factor in the market, and particularly this year when the demand for canning beans has slackened as compared with the war demand. Idaho is also offering beans liberally, and foreign beans are freely quoted on eastern markets, including Japanese, Manchurian, Chilean and Australian products. These stocks are, however, quoted at prices comparable with the domestic product, and are not a large factor in domestic consumption.

The Foreign Demand.

As against these bearish factors there is to be considered the possible outlet which will come with the lifting of the blockade against the countries of central Europe, which is expected shortly to result from the Peace Conference. The people of some of these starving countries are habitual bean eaters, and are accustomed to a product similar to our own. What this may mean to the future of our bean market is problematical. It may provide

an outlet for our surplus which will be reflected by a sharp reaction in prices. On the other hand, a large demand may not materialize. The Bean Division of the Food Administration Grain Corporation has stated that its requirements were fully met by the recent purchase, yet it is learned upon good authority that the bean jobbers are still hopeful of getting a further order of two hundred cars. With no stabilizing influence, the future of the bean market is highly speculative. To those who have appealed to us for advice as to what to do with their beans, we can only say, here are the facts so far as we have been able to secure them to date. What the future may develop we cannot tell.

The following excerpts from readers' letters give prices which are being quoted at interior points:

St. Johns, March 8.—Our dealers are not buying beans. They say they cannot get a market for them. They would pay \$5 per cwt. if they could get them for that.

Woodland, March 8.—Our local dealer is offering \$6 per cwt. They claim the market won't allow them to pay higher prices.

Cedar Springs, March 7.—Dealers in this vicinity are paying from \$5.25@6 for beans.

Morrice, March 8.—The manager of the local elevator quotes beans at \$5.50 per cwt.

Mt. Pleasant, March 8.—After the bean meeting at Detroit last month, dealers started to buy at \$5. They advanced to \$7 and are now at \$5 again.

Grant, March 8.—Our local buyers are at this date offering \$5 per cwt, or \$3 per bushel.

Sand Lake, March 8.—My dealer said this morning that he could only pay \$5.

Ellsworth, March 8.—Chatterson & Son, of Mt. Pleasant, are paying \$5 per cwt, for hand-picked beans.

THE STATE FARM BUREAU COMPLETES PLANS.

A meeting of the executive committee of the State Farm Bureau organized during Farmers' Week, was held at East Lansing last week. Plans were

completed for the financing of the enterprise and a ways and means committee was appointed to have full charge of the finances of the organization. The plan contemplated a membership fee from the several county farm bureaus of the state and also a guarantee fund of which interested farmers of the state will be asked to lend their credit to cover expenses as may be required during the year. This plan will be announced in detail at an early date. Mr. C. A. Bingham was elected permanent secretary, and will at once establish an office in Birmingham, Michigan, which will be the headquarters for the organization during the balance of the present year at least.

NO FURTHER GUARANTEE ON PORK PRICES.

New export regulations applying to pork and pork products issued by the War Trade Board, effective March 6, caused the Food Administration to announce tonight that it cannot continue the stabilization of the price of live hogs.

This means that the price of \$17.50 per hundred pounds, which has been maintained by agreement between the Food Administration and the packers will go by the board.

Officials of the Food Administration believe the effect may be an increase in price rather than a drop as had been expected by those who have urged that the government cease all price fixing of food.

COUNTY CROP REPORTS.

Osceola Co., March 5.—The absence of snow is hard on wheat and rye. Hay is selling for \$18@24 per ton; potatoes \$1.20 per cwt; hogs 15c; eggs 30c.

Livingston Co.—Wheat and rye are looking good. Farmers are getting \$3.60 per cwt for 3.5 per cent milk; hogs bring \$16.50 per cwt; potatoes 90c; butter 50c for No. 1; eggs 35c.

Ionia Co.—Wheat and rye, though somewhat brown on top, have wintered good so far. Potatoes \$1 per cwt; hogs \$16; stores are paying 32c for eggs and 44c for dairy butter; milk testing 3.5 is bringing \$3.20 per cwt. at condensary, with 30c out for hauling.

Gratiot Co.—Wheat looks good yet, but has been damaged some by the freezing weather. Hogs are selling for \$15@16.50; milk \$3 per cwt; potatoes \$1; butter 35c; eggs 34c.

Tuscola Co.—This has been a good winter for live stock of all kinds. Wheat and rye have come through the winter in fairly good condition, though there has been very little snow and ground has been bare most of the winter. The potato market is dull, dealers offering only 60c per bushel; hogs \$16; creamery butter 50c; eggs 35c; milk \$2.50 per cwt.

Bay Co.—Wheat and rye are now covered with about eight inches of snow. The following prices are paid for produce: Potatoes 95c per bushel; eggs 35c; butter 45@50c; milk \$3 per cwt; pork \$20.50 per cwt.

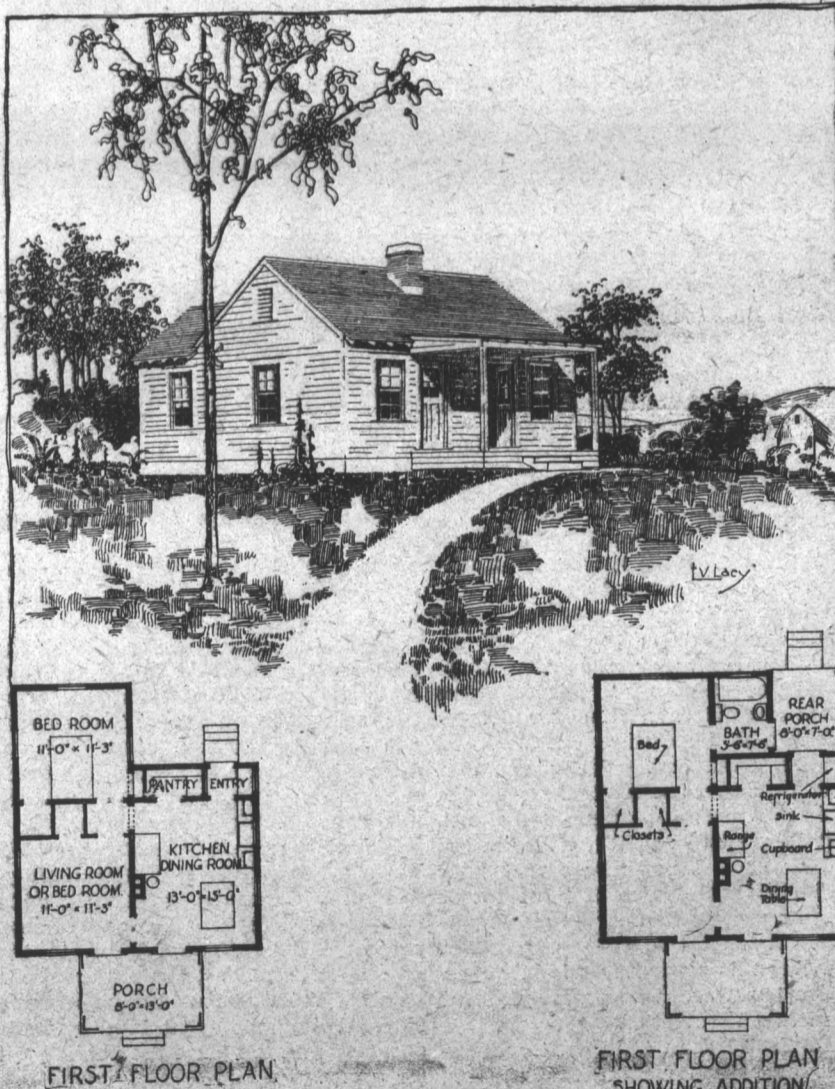
Clare Co.—Wheat and rye are badly winter-killed; on account of no snow and so much ice on the ground, it is hard to say just what the result will be. There is no demand for potatoes. Local quotations are: Rye \$1 per bu; wheat \$2; oats 55c; peas \$1.25; barley \$1.70 per cwt; buckwheat \$2.70; hay \$24; cream 49c; eggs 30c.

Huron Co.—Wheat and rye are good but the acreage is light. There are no potatoes being sold, it being too cold for shipping. Hogs are selling at \$14@16 per cwt milk 7c per qt; dairy butter 40c; eggs 32c.

Montcalm Co.—Wheat and rye are in fair condition to date. Price on potatoes is not satisfactory. Growers who have held should have \$1 per bu. in order to pay expenses and have a living left. Potatoes now bring 90c per cwt; hogs \$16.50; eggs 32c.

Kent Co.—The condition of wheat and rye is unchanged from a month ago; next month will tell the story on wheat. Pork dressed brings 18@19c; potatoes 90c@1; milk \$3.25 per cwt; butter 55c; eggs 38@40c.

Gratiot Co.—Wheat and rye do not appear to be badly damaged. There are more farm sales than ever before, and most everything brings good prices. Fat cattle sell for \$6@9.50; hogs at \$12.50@16.50; eggs 30c; butter 30@35c; milk \$2.40 per cwt.



A Comfortable and Inexpensive Tenant House.

The Demobilization of Prices



THE tide of democracy has swept the Hohenzollerns, the Romanoffs, the Hapsburgs and Turkey's Sultanic tyrant from the bowed shoulders of humanity. The crash of crowns has left grave issues for the people of this land to face. One of these issues is the general reduction of prices that is sure to come during the period of reconstruction. The varied industries of our social and economic structure are so inter-dependent, one upon the other, that it is the essence of Bolshevism for any single interest to depart from the principles of even-handed justice and launch a program of special privilege.

The strength of our nation lies in the fact that we are more than one hundred million American citizens, each with privileges equal to those of everybody else. The moment we begin to claim special rights, not because we are citizens, but because we are manufacturers, bankers, farmers or laborers, we are getting away from a republican form of government. There can be no sweeping reduction of prices during the next few months without seriously upsetting our whole social and economic structure.

Woodrow Wilson has laid down a maxim, at the world peace conference, that nations, little or large, must be given the freedom of self-determination so long as they do not attempt to trample upon the rights and freedom and opportunity of other nations. Is it too idealistic to suggest that the industries of this land be joined into a league, similar to the league of nations, in which there shall be domination of no particular interest? Woodrow Wilson alone cannot bring about stable and just conditions here. Capital, agriculture, manufacturers, labor, working singly cannot hope to do it.

But all of us, farmers, laborers, manufacturers and bankers working and cooperating and planning and reasoning together in the new spirit of democracy, fashioned and purified in the sacrifices of war, can establish a progressive, live and let live policy under

Modern Agriculture Asks for No Special Privileges or Favors, But Economic Solidarity with Other Interests.

By Wallace M. Kenyon

a social and economic system to which the new Republics of the world will look for counsel and guidance and, above all, for example. If we fail to demonstrate to these groping people that a great democracy can function smoothly in restoring order and progress and happiness from the chaos of a world war we have no right to assume world leadership under the new ideas and conditions begotten by the war.

The Trend of Prices is Downward.

Consumers ought to feel happy that we have a large supply of food and that prices are beginning to go downward. Extreme prices have encouraged the raising of everything. There is a bumper crop of wheat and corn. Cows and hens will be well fed and that means plenty of milk and eggs. There is a tremendous surplus of pork products. In the United States there is today nearly \$600,000,000 worth of cattle more than there was a year ago. Poultry is plentiful in all parts of the country. There is so much food that we don't know what to do with it. At present there is only a light demand from abroad.

Nor is it food alone that is being affected. Reductions in cloth prices has begun, both wool and cotton fabrics being affected. Yet prices have not declined sufficiently to make any very sweeping reductions to the consumers. The best posted authorities think that the return of prices to anything like the pre-war level will be delayed for some time. Supplies are short in countries where shipment is now impossible and this, backed by large volumes of credit and currency available as soon

as conditions in Europe are determined will constitute a strong factor in favor of holding a relatively high range of prices. Prices must follow costs, and the cost prices are not going to be reduced rapidly in this and other countries.

Freight charges have just been largely reduced on the ocean, but not to pre-war rates, and railway rates are not being reduced at all. In fact, the railroads seem to be moving to a condition wherein another advance in freight rates will be necessary. We have no doubt that, by and large, a private enterprise can operate a given business and earn a profit cheaper than the government can operate it without a profit. And yet, few of us are rash enough to suggest that the government should return the railroads without adopting some safe and sane system of control under which it could protect them until normal conditions are restored. Such a move at this time would be a confession of weakness on the part of the government, and might prove a body blow to other interests of the country.

Probably the greatest obstacle to any immediate decline in prices, particularly in the prices of food stuffs and clothing, is found in the government's policy of price-fixing. The price-fixing policy was adopted, it will be remembered, to protect the consumer against any unreasonable rise in the prices of necessities, and to stimulate the producer to do his utmost by protecting him against any sudden drop in prices or unforeseen decrease in demand for his products. It was a war-time necessity and it produced results

that enabled us to put over our problem of winning the war decisively with a minimum loss of life and equipment.

Yet many consumers are wondering why, in the midst of this era of plenty, they should be paying war prices, and the government exercising its war-time control of prices. The New York Produce Exchange has asked the government to discontinue its policy of price-fixing as now applied to hogs, grain and other food stuffs, to the end that prices may return to their normal and natural bases, controlled only by conditions of supply and demand, and so bring about a material reduction in the cost of living, now becoming so heavy a burden for the mass of our people. It claims that such a reduction of living expenses is being especially called for in the present period of reconstruction and readjustment where there must be a considerable discharge of labor, or possible reduction in wages to meet diminished demands incident to stoppage of the intense war activities.

Consumers Are Patriotic.

While it is important that food prices decline, the average consumer is in favor of the government standing by its promise, rather than excite a panic through failing to back up the farmers who have planted wheat and raised hogs as they would never have done otherwise.

Some of the leading commercial publications are complaining about the government maintaining the prices of hogs. One of them lambasts the Food Administration for fixing the price of hogs for February, as for January, at \$17.50 per hundred pounds. "A war price, a starvation price at a time when stocks of surplus meats are piling up so rapidly. All the while the city consumer pays fifty cents a pound for ham as if there wasn't a hog on earth." There has been much talk in congress and elsewhere about fabulous profits the big packers have made and about how the Food Administration helped them by keeping prices up to a high level. But how could the government have kept its promises to the farmers



The Home of One of Michigan's Best Herds of Pure-bred Shorthorn Cattle.



without also enabling the packers to sell his stocks before prices took a drop. If the packers' profits are too large they can be taxed, but if the farmer's prices threaten to fall below a certain level, production will fall off, and the country will suffer.

Mr. Hoover answers the critics of the Food Administration by saying: "It is no more possible to demobilize in a week the whole of these great and intricate forces set up during the war, than it is to demobilize our army by dismissing it on the field. And, pending these solutions, our American farmers, merchants, packers and banks simply must stand together for two or three months to carry our excess surplus over until the markets of the world have been more extended and finally liberated by peace."

We are prepared to export over fifteen million tons of food this year, although before the war we exported but five million tons a year. If the war had lasted another year every pound of this increased production would have been needed by our allies before next fall. But the armistice came suddenly, freeing shipping from military use and re-opening to the allies the cheaper South American and Colonial markets, where, in addition, they could have more liberal credits and markets for their manufactured goods. As soon as peace is declared and the markets of Europe are open to our trade there is sure to be a great demand for food for millions of mouths, even greater than our large surplus can supply. In fact, our best posted trade authorities declare that if the entire consuming populations of the world were able to obtain meats and fats, there would be a grave shortage, instead of a surplus in America today, even with the great crop of hogs we will soon have to market. There are 4,600,000 more hogs in America today than was the case a year ago. But for the next few months we face a critical situation. It is a time when we cannot afford to rock the boat, or claim special privilege in the matter on government price-fixing.

The high price of wheat is a contributing cause to the high prices of other grains, which in turn holds up the prices of meat, poultry and dairy products. The government has promised to the farmers of the country to pay for their 1919 crop of wheat a price equivalent to \$2.26 a bushel at Chicago, in case they cannot get that price in the open market.

Why, asks the consumer, should wheat sell here at \$2.26 a bushel when selling in Argentina at \$1.28, and when Canada and Australia are ready to undercut us a dollar? Why should corn be \$1.36 in Chicago and fifty-seven cents in Buenos Aires? Or oats sixty-eight cents in Chicago and thirty-seven cents abroad? Why, he asks, should flour stay at \$12 a barrel with an existing glut and with a crop of wheat, probably exceeding one billion, one hundred million bushels in sight?

No true American wants the government to break its promise to the farmers, but there is an almost unanimous agreement upon the part of the people that the government should either buy up the wheat crop at \$2.26 a bushel and sell it at the market price, pocketing the loss for the benefit of the consumer, or that it should pay the farmers the difference between \$2.26 and the price for which they sell their crop. In either case the taxpayer foots the bills. But it seems more fair to the laboring classes that the loss should be distributed widely than that the price of bread should be kept artificially at the war-level. The government, it seems, is inclined to give the con-

sumer the benefit of the market price and pocket the loss, and to that end the administration has prepared a bill proposing the appropriation of one and one-quarter billion dollars to be used by the Food Administration in purchasing 1919 stocks of wheat at \$2.26 per bushel, to be sold at world market

prices. Surely agriculture cannot complain that the government has not done its part toward giving it a square deal in the matter of price fixing and living up to its promises for increased wheat and meat production.

Labor Has its Problems.

Farmers have complained about the

scarcity and high prices of labor; laborers have complained about the scarcity and high prices of food stuffs. It is simply a case of prices following costs, and neither farmer nor laborer is justified in demanding maximum prices unless he is willing to contribute something to the general prosperity of the other. In a number of instances war-time conditions and prices have proved a strong factor in bringing about a better understanding between agriculture and labor.

In the west labor is emphasizing the land question in the spirit of Henry George. Labor claims that land monopoly is the prime cause of that distribution of population which is crowding the people too closely together in some places and scattering them too far apart in other places. The Farmer-Labor Alliance is now urging the California State Legislature to adopt a system of land-values taxation that shall include a supertax on all idle uncultivated land, as well as on land held for purely speculative purposes. The aim is to disintegrate speculative ownership of large areas of land and place a large share of the burden of taxation on monopolistic wealth at its chief source. There is nothing Bolshevistic in this system of taxation, no proposal to seize private property, no recommendation of, or excuse for violence, no suggestion that changes are to be brought about except by the due process of law and with the approval of a majority of the people.

Another question of vital interest to both labor and agriculture is the proposed cessation of immigration for a period of five or ten years. Such a program is needed to give labor opportunity to adjust itself to new conditions. It is going to take considerable time for labor, which has become complicated by war, to come to a new equilibrium. Obviously, this is going to be difficult if we are taking in a million or more people a year to disturb wages and cause unrest among the laboring classes.

Another consideration seems important, that is, the matter of self-preservation which involves keeping the ideas of democracy unpolluted by the social insurgents of European countries. The farmer may ask why he should be forced to pay war-time wages when there is a surplus of labor in other countries. Here, again, prices must follow costs, and the cost prices are not going to be reduced rapidly so long as labor is well paid. Cheap labor never built up a prosperous agriculture. Any lowering of our standards of citizenship and living is sure to disturb our prices of food products as well as the wages of our laboring classes. We cannot go on indefinitely mixing the unpatriotic money-makers of Europe with our people without modifying our spirit of Americanism. Any lowering of our present standards of citizenship and living at this period will not only harm us, but it will prevent our great interests from functioning smoothly and our democracy from rendering great service to mankind.

BACK UP YOUR FARM BUREAU.

Your farm bureau is an organization for the development of a rational program of work in agriculture and home economics, and for cooperating with state and national organizations to further public projects. It was organized to further the farmers' interests, and every farmer should back it up. If agriculture is to take its proper place among the great industries it must have proper representation. This can best be brought about through county state and national organizations.

A Plain Farmer's View of the State Farm Bureau.

THE organization of agriculture by counties of the respective farm bureaus into state bodies, and then into a national organization, as reported by the Messrs. Cook and Bingham at the New York meeting, is easily the foremost agricultural act of the year 1919. This organization includes every producer, regardless of his condition. He does not have to be voted in nor is he in danger of rejection. The member elects himself, without any shackles of secrecy, and the work of agriculture will be done in the open, without fear of criticism or suggestion being injurious and in this way establish and express agricultural opinion.

The leadership will be by men maintained by their farms and not by a series of levies and imports, with degrees and circles of circumlocution which conceals and at the same time absorbs revenues. This leadership will be of men of capacity to farm the soil and make agriculture profitable, rather than of capacity to pose and plead for farming by men who are not and never have been farmers.

It is of importance to note that this organization came into being of its own initiative without paid organizers, like the non-partisan league and others, who assume to organize agriculture and to charge so much per capita therefore. It is this assumption of "higher ups" that is not the spirit of the times and is distasteful now.

It is auspicious that this democracy of agriculture has come into being at a time when the bluff of authority of czars and kaisers has been called and in a similar way throws into the discard the nomenclature of masters, chiefs, royal grands and other insignia of a departed autocracy which assumed to speak for plain people. This departing leadership clad in the costumes of knights, pages, princes and pashas with imitation lances of curtain poles from the ten-cent counters of country stores, seated on chintz-upholstered thrones,

clad in cheesecloth robes, was more dramatic than practical, and finds no place in this organization.

Modern agriculture asks for no special privileges or favors, but economic solidarity with other business. The chambers of commerce of the respective cities are democratic in the sense that they voice their own ideas, and pay their own secretaries or other aids, and have the initiative of procedure. In a similar manner the respective county farm bureaus should employ their own county agents and ask no county appropriations, therefore unless it might be in the sparsely settled counties. Agriculture with its own economic independence then could insist on adequate compensation that would enable it to easily meet the cost of organization. This would allow agriculture in the respective counties to say to the United States Department of Agriculture and its representatives in the states, "we will cooperate with you; council with you, but the initiative is ours." The dictatorial bureaucracy that is always a tendency of the non-farmer agriculturist when segregated from actual farm work must yield to our self-determination.

Agricultural education has diffused able men throughout the counties, and now these men must assume to know agricultural needs and plans and be released from the imposed itinerant who flits about with a leather portfolio and whose purpose he acclaims is "to educate the farmer." The Department of Agriculture at Washington has become dictatorial and its young men are but parts of the wonderful circumlocution of detail which may mean well but acts feebly or too late, and is unable to appreciate local conditions. Agricultural colleges must support their alumni, in this matter of self-determination, or admit that agricultural education does not educate but must be guarded and fettered.

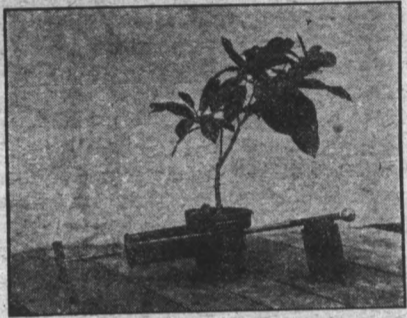
ABEL PARSNIP.





Spraying Formulas in Small Quantities

AN ounce of prevention is worth a pound of cure" is an old saying that applies especially to the control of insect pests. What would become of our fine cabbage plants if left to their own mercy as far as spraying them is concerned? They would have to withstand the attacks of insects from the time they were set out in the



A Small Dust-gun Capable of Applying Poison in Powdered Form.

spring until frost hit them in the fall. Early in their existence the cutworm might destroy them when it is on its nightly search for food. The small bea-beetle may riddle the leaves with the tiny holes it makes, while a little later the cabbage worms would probably come in abundance. All of these can be prevented from their destructive work by the proper application of poison. The onion becomes infested with maggots that perforate the bulbous root, making it unfit for food. Every year these insects put in their appearance in the garden and just as often take their share of the vegetables grown. Knowing what the trouble is does not always mean an available remedy. We know that the proper spray put on at the right time would have prevented these troubles. The question of what to spray for the various insect troubles may cause many not to spray at all, but with many others this is not the case. They know with what to spray and often just when to apply it, probably having the proper ingredients on hand, but the question that troubles them is how to mix, in the proper proportions, enough spray for a few rows of potatoes or a small patch of cabbages, perhaps a gallon or two.

The different state experiment stations publish bulletins on the subject and issue spray calendars for the benefit of the farmer. The Department of Agriculture, through the Bureau of Entomology, issues many useful bulletins on this and kindred subjects. But they are all written for the benefit of the farmer. The formulas and directions given are for the fruit grower with his thousands of trees or for the man that plants potatoes by the acre. As a standard they use the barrel, fifty gallons, and an engine often furnishes the power to apply it. But the small gardener with his limited area of ground and the small amount of produce grown, does not require more than a gallon of spray material. If he wants this small amount of spray material he must sit down with one of these formulas and do a mathematical problem, such as dividing three-fourths of a pint by one hundred, or try to measure out one-fiftieth of three pounds of arsenate of lead. If a good set of balances, capable of weighing to a fraction of an ounce, were handy he might find the correct percentage of material for the small quantity needed. Often one must

resort to the use of pencil and paper to get the correct proportions. Rather than do this he either will not spray at all or guess at the proper amounts. This generally makes the spray solution too weak so that it is not very effective or else it is too strong or poorly mixed in which case it is liable to result in burning the foliage.

The formulas given below are in terms most familiar to the housewife and are meant for those having a small patch of ground for garden purposes. In following the directions one should, for the most part, use old dishes and these, when not in use, should be kept in a place by themselves so as not to be used for cooking purposes and will be ready when wanted.

Measures of Equivalents for Household Use.

Two cupfuls of liquid or dry material equal one pint; four cupfuls of liquid or dry material equal one quart; three teaspoonfuls equals one tablespoonful.

"Measurements by weight are the most accurate, but, as a pair of scales is not included in the kitchen outfit of all housekeepers, measurement by cup, table or teaspoon are usually designated. Measuring-cups hold half a pint and divisions into quarters and thirds are indicated on their sides." To measure dry material, press the material into the cup or spoon solidly and level with a knife. All quantities call for level measurements.

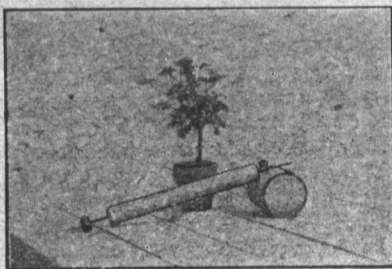
Nicotine.

Standard Formula.—Nicotine sulphate, forty per cent, one pint; soap, four pounds; water, 100 gallons.

Household Formula.—Nicotine sulphate, forty per cent, one teaspoonful; soap, one cubic inch; water, three quarts.

For Plant Lice, White Fly, Etc.

Into one quart of warm water shave



An Atomizer for Applying Small Quantities of Liquid Sprays.

one cubic inch of common laundry soap and when dissolved pour it into two quarts of water and add a teaspoonful of nicotine sulphate, forty per cent. Shake well to get a good mixture and it is ready for instant use. Care should be taken in purchasing the nicotine sulphate to get it of proper strength for if a weaker solution should be used it will make the spray too weak.

Nicotine sulphate can be purchased at many drug or hardware stores or wherever spray materials are sold. This spray seems to have taken the place of kerosene emulsion, to a great extent, as a contact spray. It is very effective and easy to prepare. It should be applied liberally so as to drench the plants that are to be protected.

Kerosene Emulsion.

Standard Formula.—Kerosene (coal oil), two gallons; laundry soap, one pound; soft water, one gallon.

Household Formula.—Kerosene (coal oil), two cupfuls; laundry soap, one

(Continued on page 436.)



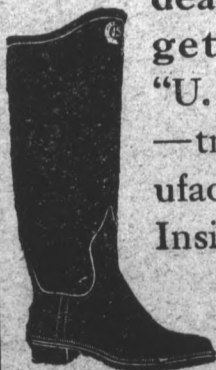
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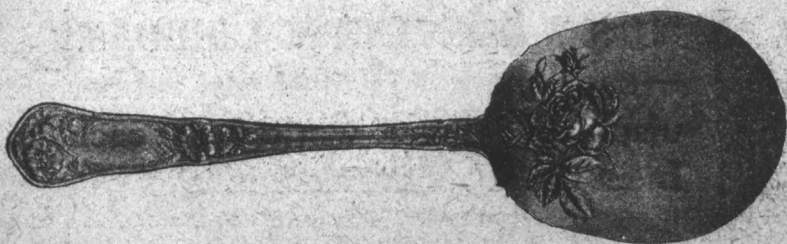
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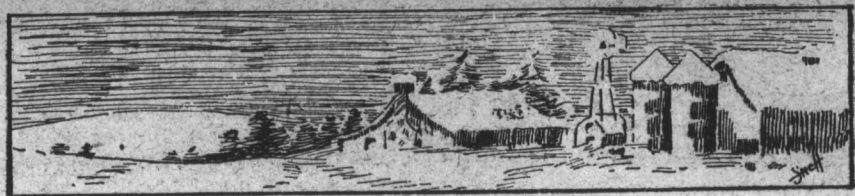
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Substitute Feeds for Calves

By L. J. Meredith

THE heifer calf is an important figure on the dairy farm. No other youngster in the barns has so great an influence in determining the future profits. If one is to succeed in bringing the heifers to profitable maturity at from twenty-four to thirty months of age one must select the best calves, feed them generously, and provide conditions that make for the favorable unfolding of heredity. The feed, the care and the housing must bring out the best that is in them.

The heaviest expense connected with rearing new cows for the dairy herd is caused by the failure of so many heifers to develop into profitable cows. In many instances this is due to rearing heifers that are constitutionally deficient and therefore incapable of developing into good cows. On the other hand, many promising heifers are ruined through feeding improper rations during the early period of their lives.

The heifer is fortunate, and so is her owner, if a feeder's skill and judgment are exercised during the first few weeks of her life. The tender internal organs that handle the milk, and later the grain and roughage, from which her body is built up, must be trained properly to perform their duties. Watchfulness of this important piece of mechanism must begin the first day of the heifer's life. A strong digestion is a mighty important thing for the young heifer.

There is no set rule for feeding the young heifers. Circumstances frequently call for quite different methods and feeds. Whole milk is the ideal food for the young heifer; skim-milk, supplemented with a proper amount of the right kind of grain feeds, ranks second. In a majority of the leading dairying communities, however, the increasing demand for whole milk makes it necessary for dairy farmers to utilize substitutes for milk or abandon rearing their heifer calves. Several manufacturers of commercial feed-stuffs, who were alive to the situation, have tried to solve the problem by putting on the market carefully prepared feed mixtures that are palatable and digestible. Just how largely we may safely substitute these prepared calf feeds for milk and how cheaply we can rear our heifers with only a limited supply of milk is a question of vital interest to all of us who are interested in building up our herds and at the same time selling our milk in the best market.

What I wish to say regarding the use of these prepared feeds is as much a confession of failure and a statement of problems as a story of profit and success. My experience and the results of quite an extensive investigation of various farms where these feeds have been used quite liberally go to show that there are many things about the young calf that makes it practically impossible to successfully utilize these milk substitutes until after the organs of digestion have become sufficiently developed to extract nourishment therefrom.

For about fifteen years we have raised calves each year and shipped milk to the city trade, and I feel that I have gained quite a fund of experience, yet I have never been able to successfully replace whole milk in the calf's ration before it was from four to five weeks old. In studying available data gathered from a number of the leading experiment stations I find that my experience conforms in a marked degree to the results reported by these investigators. Some of the very recent investigations in animal nutrition conducted at the Wisconsin and Connecticut stations show the value of skim-milk in the calf's ration, not only as a source of nourishment, but as an aid in promoting the more complete assimilation of the nutrients in the grain feeds. Briefly summarized, experience in feeding calves on the farm and the results reported from the experiment stations show:

1. That it is possible to raise good calves without milk of any kind after they are from four to five weeks old.
2. That low-grade powdered milk, when it can be purchased at three cents per pound, is the best skim-milk substitute, but that it is more efficient if fed along with grain and other commercial substitutes.
3. That under favorable conditions a calf fed whole milk and skim-milk up to four or five weeks of age and then given good care and proper mixtures of these substitute feeds can be made to gain one and one-fourth pounds daily during the first four months these feeds are used.
4. That there is no complete substitute for skim-milk, yet the gains made from some of these prepared feeds have been quite satisfactory and the cost of growth fairly low.
5. That a tablespoon full of soluble blood flour mixed with each feed tends to keep the bowels of the calves in good shape; and since it is a cheap source of protein it may be used with profit.
6. That prepared calf feeds, while good enough for rearing fair-sized calves are too expensive to feed liberally to ordinary grade calves.

The writer's first experience in feeding these prepared milk substitutes was during the spring and summer of 1914. A severe early drouth curtailed our supply of milk until we could barely keep our city contract and left us with eight Holstein heifer calves ranging in age from four to eight weeks. After making a careful study of the prices of various prepared feeds, other materials used as milk substitutes and the available data concerning their use we made up a mixture as follows: Wheat flour, twenty-five pounds; commercial calf feed, thirty-eight pounds; powdered milk, twenty-five pounds; linseed meal, ten pounds; soluble blood flour, two pounds.

The wheat flour was recommended as a good bowel regulator and a fairly cheap source of nourishment. A medium grade of flour was used in this experiment, although in later experiments we have used a low-grade flour.

The prepared calf feed was one of the popular brands, but owing to its high cost it was necessary to utilize other materials with it in order to make its use profitable.

The powdered milk was a low grade, purchased at a plant in western New York. The manufacturers claimed that it was simply the powder resulting from drying the skim-milk by a patent process. It is dry and will keep indefinitely in a dry place. Being almost the same as skim-milk dissolved in water it made a very valuable addition to the ration.

(Continued on page 441).

High Cost of Rotted Produce

(Continued from page 403.)

showed twenty-two per cent Slimy Soft apple. The Michigan potato this year Rot. The inspector reports "Slimy Soft" appears uniformly throughout the load. A loss of twenty-two per cent of the stock by weight in trimming heads for market use."

Such, then, is the average run of reports from inspectors of Michigan produce. There are countless cars better than these—and there are any number far worse. These are the cars for which inspection has been requested, either by shipper, railroad, or consignee. The comparatively small force of men at the great markets are reaching as yet only a small portion of the shipments, and I believe these are a fair average of the conditions.

I recall my trips through railroad yards inspecting potatoes brought in to Detroit from Canada during the great potato shortage of 1916 and 1917 and the visits to various markets in the summer. I believe that these reports are highly conservative. A trip through the railroad yards is a liberal education in the immensity of business interests and in waste!

Probably every farmer who reads this article is recalling some shipment he made to some commission house or other, and is recalling his disappointment when the check came in. One peach grower told me that he shipped

the Michigan potato this year was absolutely sound so far as Late Blight is concerned. It was a crop which, with proper handling should ship without loss.

Then there is the over-heating in transit—the peculiar form of suffocation that leads to blackening of the hearts of the potato. Always to be considered as a potential factor for loss is the matter of freezing injury. It is a long story to tell of the chances shippers take with the weather, and of the carelessness shown in handling cars in cold seasons. Then there are delays in transit and failure to ice, etc. All the great category of things which the carriers do or do not do which breed the claims against the road, come here.

There are any number of firms that run a thriving business in the matter of railroad claims. One large railroad company paid in the first eleven months of 1918, \$55,000 for damage claims in spoilage of vegetables. When a certain railroad system went into the hands of the receivers a few years ago, they found an unpaid mass of claims of several years' standing, on perishable products, amounting to \$5,000,000.

It is growing to be the policy of certain railroad systems to seek to pre-



The Farmer Must Grow Sound Produce, Free from Blight, Worms Rot or Spot.

some beautiful fruit on Friday night, and if he hadn't seen his name on the baskets on Monday morning, he would have denied any ownership of the rotted mass that came out of the car.

But this article doesn't seek wholly to tell the story of wastes and losses. It is written for the purpose of calling attention to a fact in agriculture and for the purpose of urging farmers to face the conditions and apply the remedies.

The causes of the losses are as numerous as the crops and the conditions that may confront them in transit. The losses discussed in this paper are outside of the enormous ones which come from poor packing, storing, bruising, etc., in the car. The damage arises from the attack of molds and bacteria on the commodity shipped. In part, they arise from diseases contracted in the field. The plants are sick when shipped and they never get better. In part, and we may say for the large part, with some commodities—the losses arise from carelessness in handling, in picking, packing, or placing in the car. It is safe to say that Michigan potatoes are showing from five to ten per cent shrinkage in long transit this year, due to rots which start at fork holes, bruises, scuffed skins, etc.

Think how the potato is handled—dumped and jostled, walked on, scooped over and forked about, thrown from the wagon to the floor, and tossed roughly into the car. And yet, every potato is worth nearly as much as an

vent claims instead of fighting them as heretofore. A certain railroad cut its losses in perishable products \$1,000,000 in one year, by seeking out the source of loss and damage and doing work with the shippers having trouble. Here we have the principle to work on. The cause of loss must be eliminated. This isn't a case of passing the bill on to the other fellow.

What Can the Farmer do to Avoid this High Cost of Rotted Produce?

The first thing the farmer must do if he is to prevent completely his share of this waste of food stuffs—if he is to stop this leak that is drawing off surplus in market returns, is to grow a sound product, free from blight, worm hole, rot, or spot. He must send nothing but firm, sound fruit to market, and this must be packed in a proper way, so stored and braced in the car that loss from jostling and breaking will be impossible. These things are paramount.

The railroad must give prompt service on the shipment. It must furnish adequate equipment. Where icing is required it must perform this service. There is need for development by the railroads for a proper checking system to insure icing and to give the correct story of icing service performed. It is to be hoped that of the the lasting benefits to come from the United States Railway Administration is exactly this thing.

Then the market men must give prompt handling to the car and give an

Modest Farmers

are the Minch Brothers, but they have 1500 fertile acres at Bridgeton, New Jersey, where they are making money. They grow about 400 acres of potatoes, and in some of their orchards the rows of trees are more than half a mile long. Incidentally, they grow a lot of produce.

They started with only a few acres, but they made these pay real profits, reinvested the profits in land and equipment, and learned farming by experience as they went along. They always kept accurate accounts to know just what it cost each year to handle each acre and just what they got out of each acre. They are careful even now to avoid anything that is not profitable.

Jan. 5, 1919, they wrote: "We have used Pyrox for 10 years on potatoes and apples, and find nothing on the market to equal it. It is always smooth and easily applied. We can cover the ground very rapidly and do it thoroughly."

Pyrox

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has been called by others who use it

"The Spray that Adds to Your Profits"

If that correctly describes it, and those who have used it longest say it does, isn't it the spray you have been looking for?

Notice that Minch Brothers emphasize in their letter what they consider to be three essential factors of a good spray material.

First—It is "always smooth." A spray must be uniform to be dependable.

Second—It is "easily applied." Pyrox is easily mixed and goes through the pump and nozzle without any trouble. Positively no clogging.

Third—It "covers the ground very rapidly and does it thoroughly." That means time saved just when every minute counts.

Think of the convenience and saving of time. Many a man could save his crop if he had a spray all mixed and ready to use. If the rush of the season's work finds him without time enough to do both the compounding of the raw materials and the spraying, both the crop and the profit are lost or reduced.

Blight has robbed many a man of the profits he might have had just as well as not if he had sprayed with Pyrox instead of with a mere poison. It pays to kill all the leaf-chewing insects with Pyrox and at the same time thoroughly protect the crop against fungous diseases such as potato blight and apple scab. It pays to keep the foliage healthy and green throughout the growing season, to give it greater vigor and enable the plant and trees to work for you.

The cost of your spraying material is very small when compared with the total expense of growing the crop. Labor is still high. Why not make each acre and every man hour of labor earn more for you by using Pyrox? You can buy Pyrox at most hardware and seed stores. If your dealer does not have it on hand, put his name on the coupon.

If you would like to know more about Pyrox and more about protecting your crops as Minch Brothers protect theirs against the destructive attacks of bugs, worms and plant disease, send for a copy of the Pyrox book. We make no charge for it. Use the coupon.

Bowker Insecticide Company

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IF YOU WANT TO SAVE YOUR CROPS — USE THIS COUPON

I would like to read your Pyrox Crop Book MF 41

Name

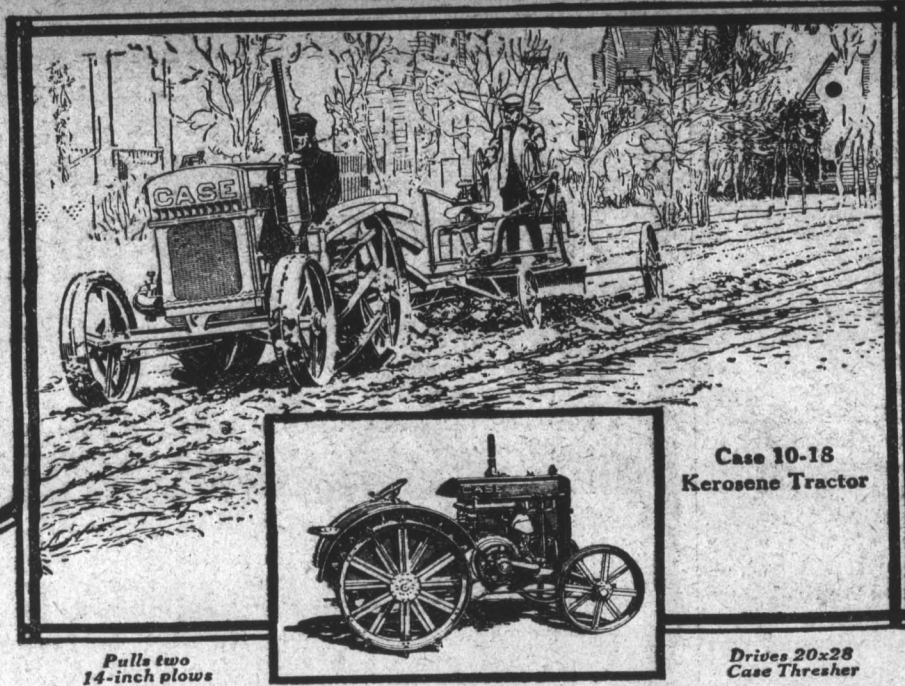
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THE adaptability of the Case 10-18 for so many kinds of work insures your getting the maximum number of days of service. And that is the way to figure the value of a tractor. How many days can it be employed profitably?

The Case 10-18 is not only a master worker in the field, but is ever ready for all kinds of belt work; also odd jobs such as road building and grading, hauling, etc.

It has the power, the compactness, the accessibility which puts it far in advance. It is the first to offer many improvements. For instance, this 10-18 is the first tractor with a one-piece frame with a valve-in-head, 4-cylinder motor mounted cross-wise. This construction permits added strength, complete enclosure of all working parts, perfect

alignment of all gears, shafts and bearings, and a considerable saving in power.

All gears are cut steel, enclosed and running in oil. There is a Case-Sylphon Thermostat which controls the cooling system and insures complete combustion of kerosene. Also a Case air washer, which delivers pure air to the carburetor, keeping the cylinders free from destructive dust and grit.

There are dozens of betterments—too long to itemize here—which are shown in our descriptive catalog, sent free upon request. This booklet also describes the larger Case Kerosene Tractors.

If you are interested in road work, we will be glad to send you our road machinery folder, if you mention it when writing.

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SHRP-SHAVR Safety Razor

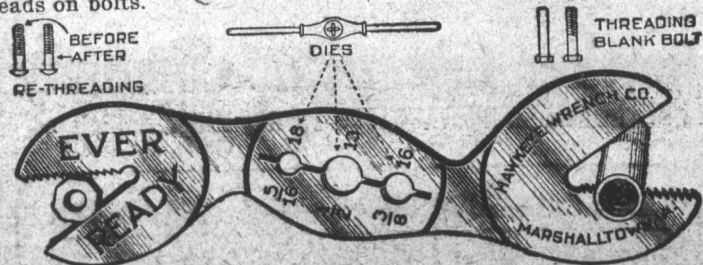
A thoroughly tested, guaranteed razor. The frame is constructed at the forty-five degree angle, which insures a clean, close cut. This razor will do all any safety razor will do. Easy to take apart and clean. Made in durable silver finish. Extra blades can be purchased at a nominal price. One of the most simple and efficient safety razors made.

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A light, compact tool you can carry in the hip pocket. Requires no adjustment, always ready for use and will work in closer quarters than any other wrench.

Made from tool steel and oil tempered. Is both a pipe and nut wrench. It has three standard size dies that will re-thread and cut new threads on bolts.



MONKEY WRENCH

PIPE WRENCH

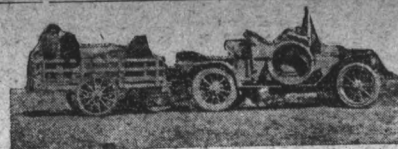
A very handy tool in repairing broken bolts. Just the thing to remove Rowe and Neverslip Calks. This wrench will work in very close quarters.

A handy tool to carry in hip pocket at all times. Every farmer should have one.

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honest and fair accounting of the condition. This matter of taking anything when the market is good, and picking flaws when the market is low—the unwarranted rejections which were the bane of marketing before the Food Administration and its licensing system—these things must be prevented from becoming the abuses of the old days.

The farmer should see his produce in the market to realize the true conditions. If this is impossible with his own eyes—he must use the eyes of others. It is now possible for a farmer for a slight fee, to secure a report on any shipment.

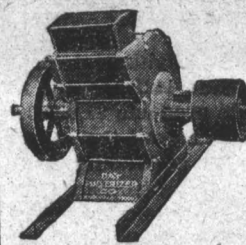
A few months ago the Michigan Farmer published as its leading article the story of the new Food Products Inspection Service, established under the direction of the Federal Bureau of Markets at all the great terminals. This article told of the work of Mr. F. L. Bloom and his staff of men at Detroit, and pointed out specifically how this inspection service is to benefit Michigan farmers.

In short, a request to the Bureau of Markets at any large terminal will secure official inspection and official report on your car. This service, which in the next few years is going to develop into the more far-reaching and practical side of markets work, must be clearly understood and the advantages it offers secured.

The results of all vegetable inspections of Michigan origin are now referred to the Agricultural College for "follow-up work," with the shipper having trouble. The Department of Botany, to whom these are referred presents the case with comments to the county agent, who traces the shipment and explains to the shipper the nature of the trouble and methods of control. It is hoped that results will come out of this work. If a county agent saves one carload of produce by his advice to the shipper who has had trouble he has earned his salary for six months.

Just now the country is confronted with food and labor problems of the greatest magnitude. The farmer who has slowly come into his own in the way of an adequate price for his goods is seeking to hold fast to his "things accomplished" as promise of things to come. The public is clamoring against the high cost of living. It seems inevitable that prices will drop. Serious writers believe that if we are to have an agriculture which will keep pace with the demands the world is putting upon it, then farmers must receive a price for their goods commensurate with prices received for other manufactured articles.

Economists can see hope of satisfying both parties to this ages-old controversy only by lessening the gap between grower and consumer. This article, which is the general discussion preliminary to a series of articles dealing with specific crop and market losses due to plant diseases, points out one cause of the difference between field and market price. Our theme is not "cut out the middleman" so much as it is to "cut out the middle loss." When the public finds it is paying for anywhere from two to ten articles that it never gets—feeding the unseen commodities to wasteful fungi and bacteria—the people will demand prevention along these lines of weakness. When the farmer realizes that he is running a precarious business because of these sources of loss, he is going to fight them. Altogether we have a common meeting ground at the market. The Food Inspection Service is going to give us results in food conservation and in waste elimination. We are at the outset of an era in which we cut out the high cost of rotten produce!



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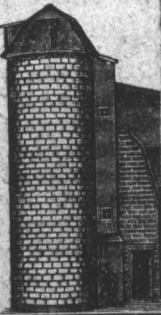
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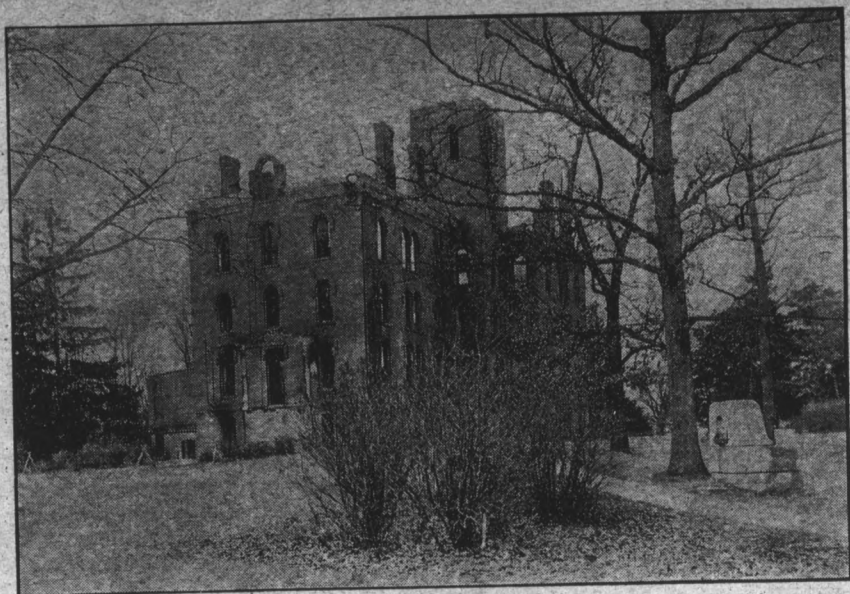
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At the Old School

By J. H. Brown

LAST week we spent two days at old M. A. C. attending several sessions of Farmers' Week and inspecting the exhibits and demonstrations in the barracks and college buildings. It certainly was the greatest and most instructive week the college and State Board of Agriculture ever put across for the benefit and entertainment of Michigan farmers and their families.

We have spent many days and nights at M. A. C. since the fall of 1883, and at every opportunity we take a hike for this all-the-year-round resort for a few hours. And every time we call it a day and let it go at that. During all these years we seldom visited the college without taking a fond look at old Williams Hall; and one day last winter we tramped up and down the creaking stairs and through the halls on each floor, and looked at the number on every room door.

Last week scores of farmers spoke to us about the ruins of this old dormitory, and wished they had a picture of the bare brick walls sticking up so bravely as though defying all creation to conquer them. Williams' Hall burned some time ago, and we looked around and inquired for photographs. None were available, so we made a special trip to the college again last Saturday to take these pictures for THE MICHIGAN FARMER. President Kedzie, Secretary Brown and Mrs. Landon, Librarian, showed us all the old pictures taken during the early history of the institution. We picked out the one that was taken in 1857, showing a good view of the old boarding hall, or "Saints' Rest." This included a portion of the old "College Hall," in the background at the right.

These officials pointed out to us the spot where the 1857 photographer must

have set his camera. After comparison we selected a position a little further north and nearer the southwest corner of the administration and library building, and took the accompanying picture. The view includes the north side and east end of Williams' Hall. In the right background the old College Hall is conspicuous because of its absence. The fountain shows up in the foreground, and the trees and shrubbery form a fine and appropriate drapery for the otherwise nude remains of old Williams' dormitory, so well loved by thousands of the readers of this paper, who lodged for a spell within these walls in the years gone by.

"Saints' Rest," built in 1856, was burned Dec. 9, 1876. It stood a few feet east of Williams' Hall. Williams' Hall was built in 1869 and cost \$31,500. The main portion, running east and west, is 101 x 109 feet, three stories and basement. The south addition extends 36 feet. The basement was used for a dining hall. When we attended the college there were three dining-rooms in the basement, and we boarded in "Club A."

During the last few days scores of farmers from all sections of Michigan have told us little incidents of their sojourning in the rooms back of Nos. 4, 15, 37, etc., and of the hazing stunts they helped pull off. We have been told that in that old building years ago there were some freshmen who commenced the study of entomological specimens in the middle of the night, and long before they were admitted to the class room and extended the right hand of sympathy of and by the professor of entomology. In nearly every such case of vigorous and protracted kindergarten work, nocturnally performed, it was found that it was a



Basement of College Hall Now a Tractor Garage. Williams in the Distance.

How to choose the right Lime for Your Land

IN order to be of the greatest benefit, lime must be thoroughly worked into your soil. Only by a thorough incorporation of the lime with the soil can *all* of the soil about the roots of the crops be affected by the lime. And only when *all* of the soil is affected by the lime will acid conditions be eliminated.

These facts point to one sure guide for buying lime—get the most finely pulverized limestone you can buy, for the better pulverized the lime the more readily it works into the soil.

Another point to remember is that moist pulverized lime forms into lumps. Therefore, it is important to purchase well dried lime and to shelter it properly if you store it.

The higher the percentage of carbonates and magnesia, the better the quality of the lime and the better the results obtained from it.

SOLVAY
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—meets every test. It is so finely pulverized that 95% of it will pass through a 50 mesh screen. It is furnace dried so that it comes to you in perfect condition. It contains an unusually high percentage of carbonates and magnesia—and has proved itself superior for any soil needing lime applications.

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We shall be glad to quote on Arcadian Ammonium Sulphate, (20.8% Nitrogen)



decided help to the student when he entered the insect class room, and his definition of the term was generally satisfactory to the tutor in charge.

This picture is a timely one. Sooner or later the walls will be pulled down. Last week, in company with a number of the old boys of M. A. C. we walked around the ruins and found that many windows had wonderful attractions. In fact, there is not a window in sight in this picture, but will attract notice from hundreds and thousands of the readers of this issue of THE MICHIGAN FARMER. Each one will point out his own window and call to mind some of the things that he did, or saw, or heard, during the happy days at old M. A. C. We took pictures of the ruins from each side and end, and will save the negatives, as a number have asked us for these pictures to keep as souvenirs.

Each man who helped lay the walls of Williams' Hall in 1869 must have been a "brick" of a mason, for all the walls, chimneys, tower and various arches and projections stand erect toward the sky, as plumb as when set in position fifty years ago. All the wood roof, floor stringers, partitions, sills and every bit of combustible material went up into smoke and down into ashes in the basement. It is very seldom that all the brick construction of such a large structure stands so perfectly after such a destructive fire. It almost seems to the ordinary layman that new timbers might be installed and the old dormitory be made to renew the days of its youth under the skillful direction and touches of the present-day architect and builder.

The second picture we took from the

center of the drive, northwest of the chemical laboratory. That spot is where we "landed" at M. A. C. the first day of August, 1883. It was Emancipation Day, and the colored people of Michigan had a big celebration in Lansing. We, with several other farmer boys, rode in a train load of excursionists from Battle Creek. We hired a horse and carriage to drive out to the college and have a little talk with Dr. Kedzie about going to school there. And so we took this picture on the spot where we first set our feet on the soil of the state farm.

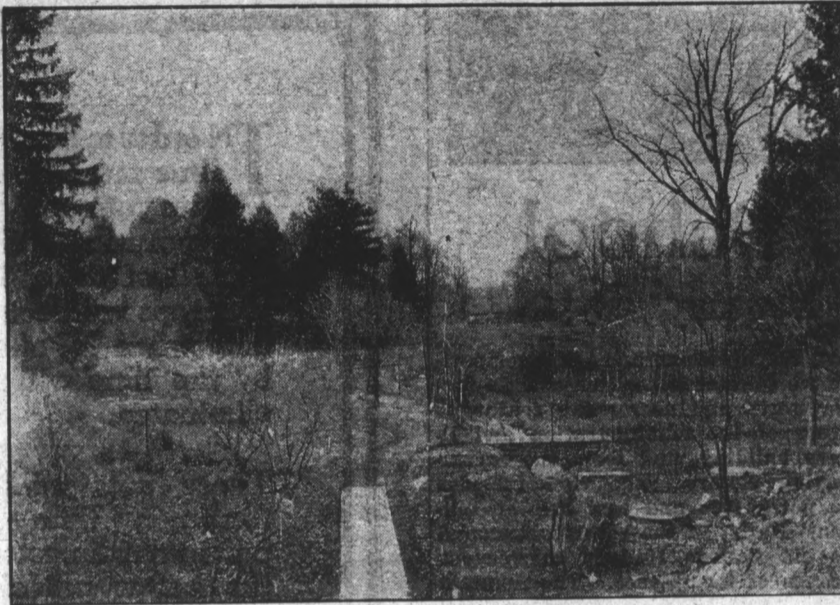
After taking the second picture we

swung the camera half way round on its tripod. And then we thought of Dr. Beal, whose eighty-sixth birthday was celebrated last Tuesday. And so will every one of our readers, after looking at the third picture. This botanic garden was started by Dr. Beal in 1873. It has gone through various changes during the more than 40 years that the Doctor taught at the College, and is known far and wide as the finest and most complete in the entire country. During the summer months hundreds and thousands of farmers and their families, city people, college professors, and visitors of every age, clime,

sex and previous conditions of servitude, slowly wander up and down the little paths of this botanic garden to find out something about things they never knew much about before. Thousands of Michigan farmers have gone into this sacred place and found out the names of a dozen or more common weeds that had tickled their shins many times on the home farm. They had been on speaking terms with these weeds for years and never knew their names.

The other day we called to see Mrs. Landon, and she produced the file of THE MICHIGAN FARMER of 1897; and in the issue of March 27, on the front page, we found the large map of the first R. F. D. route at Climax. Mrs. Landon has files of THE FARMER of the years 1845, 1847, 1849, 1858, 1863, 1870, 1871, 1873, 1875, and up to the present year. She has no file of 1872 and 1874. Is there any reader who can furnish one or both to Mrs. Landon?

We would like to take a picture of some one of the multitude of crowded corners in the College library. Mrs. Landon tried years ago to have something done in the way of a new and much larger home for the pinched and over-crowded books, poor things! Some day there will be as many cubic inches breathing space to each reader as he or she sits in a tight corner with cramped elbows turning over the pages of an interesting book, as is required for a pure-bred Guernsey cow in a legally qualified cow stable. Then the State Board of Health may possibly call attention to the reader's lack of air space and the danger to even a book worm, from such an insanitary environment.



A Bird's-eye View of Dr. Beal's Botanical Garden in Winter.

Shall Land Owners Pay all Taxes?

THE Michigan Farmer is to be congratulated in selecting such an able opponent of the Single Tax, or Site-value Taxation, as many of those in Michigan who believe in the efficacy of the single tax to remove some of the ills affecting society prefer to call it, as Mr. John R. Rood. An authority on "all branches of real property law" ought to give the readers of the Michigan Farmer much valuable information. However, it is well to state at the outset that "real property law" may not always conform to real property rights, for various reasons unnecessary to state. Site-value taxation concerns itself with property rights.

As to the beginnings of the single tax idea, Mr. Rood must go back much farther for its beginnings than to the middle of the last century. Somewhere around 1750-60 the Physiocrats of France, and whom Adam Smith, "the father of political economy" visited a little later, contended that "nothing that did not have material existence, or was not produced from land, could be included in the category of the wealth of society." And to abolish inequalities in the possession of wealth—inequalities that showed itself by a few being rich and many being poor—the Physiocrats advocated the "impot unique," or practically the Single Tax.

Nor is Mr. Rood any nearer being right when he states that single taxers desire to "abolish private ownership" of land, "and that the best way is to tax it out of existence." There is no thought in the mind of the single taxer to "abolish" the private ownership (possession) of land. In fact, single tax authorities distinctly state that it would be foolish to disturb titles; that the aim of the single taxer is to protect property rights and to restore to society only the value that attaches itself to the land through increase of population, leaving to the owner of the land all the values he himself has created.

It is necessary to remember this difference between land, and land value,

if one desires to avoid economic entanglements. For instance, there is an abundance of land in the country, but very little land value. On the contrary there is very little land in the city, but great land value. The city of Detroit and the farm areas of Michigan furnish an example of this. Detroit's area is a little over 50,000 acres—practically two townships. Michigan's farm area is stated at 18,000,000 acres,

50,000 acres of thickly populated land. Mr. Rood says that "the single tax is objectionable as a single source of public revenue because it is absolutely inelastic, the revenue depending on the rise of land values, not on public necessities." Can any source of revenue that increases in proportion to its need be rightly called "inelastic?" Truly, the single tax is just as elastic as the needs of the public require. Where

pronouncements of every political economist of any standing from Adam Smith till today.

Not only cannot the tax on land values not be passed on by the landlord "immediately," but at no time can it be passed on. It stays where it is put. Adam Smith, in his "Wealth of Nations," says: "A tax on rents * * * would fall altogether upon the owner of the ground rent, who acts always as a monopolist." Jean-Baptist Say, says: "The land-owner will never be able to saddle the consumer of his products with any part of his land tax." John Stuart Mill, Ricardo, McCullough and many others can be quoted to the same effect. A tax on land rents is a tax on land values, for the rent of land depends on location value. In all the criticisms of single tax, made by men whose study and observation entitled them to consideration, not a single one—except Mr. Rood—holds that a tax on land values can be shifted.

It is impossible in a single newspaper article, or even in a score of them, to indicate and correct all the misstatements and fallacies of Mr. Rood in his first article. Of course, the misstatements are unintentional; it is not easy for an opponent of any theory to have the viewpoint of its defenders. But I hope I shall be pardoned for speaking of one statement so at variance with facts that its mere mention should be convincing.

Mr. Rood says, speaking of land, that "as soon as speculation ceases to be attractive, development stops." This statement is unqualifiedly inaccurate. The land speculator, as a land speculator, is not a developer, either in the city or in the country. He is the great enemy of improvements; he prevents improvements being made. He is a waster of energy; he compels would-be improvers to pass by favorable sites in order to find within his means land on which he can build. Michigan wasn't settled by "land speculators." The pioneers were essentially home builders; they wanted some land they could

(Continued on page 433).

The recent series of articles under the heading "Shall Land Owners Pay all Taxes" brought out much lively comment from our readers. As space permits we shall publish what they have written us. In this letter Judson Grenell, Sec'y Michigan Site-Value-Tax League, criticizes Mr. Rood.

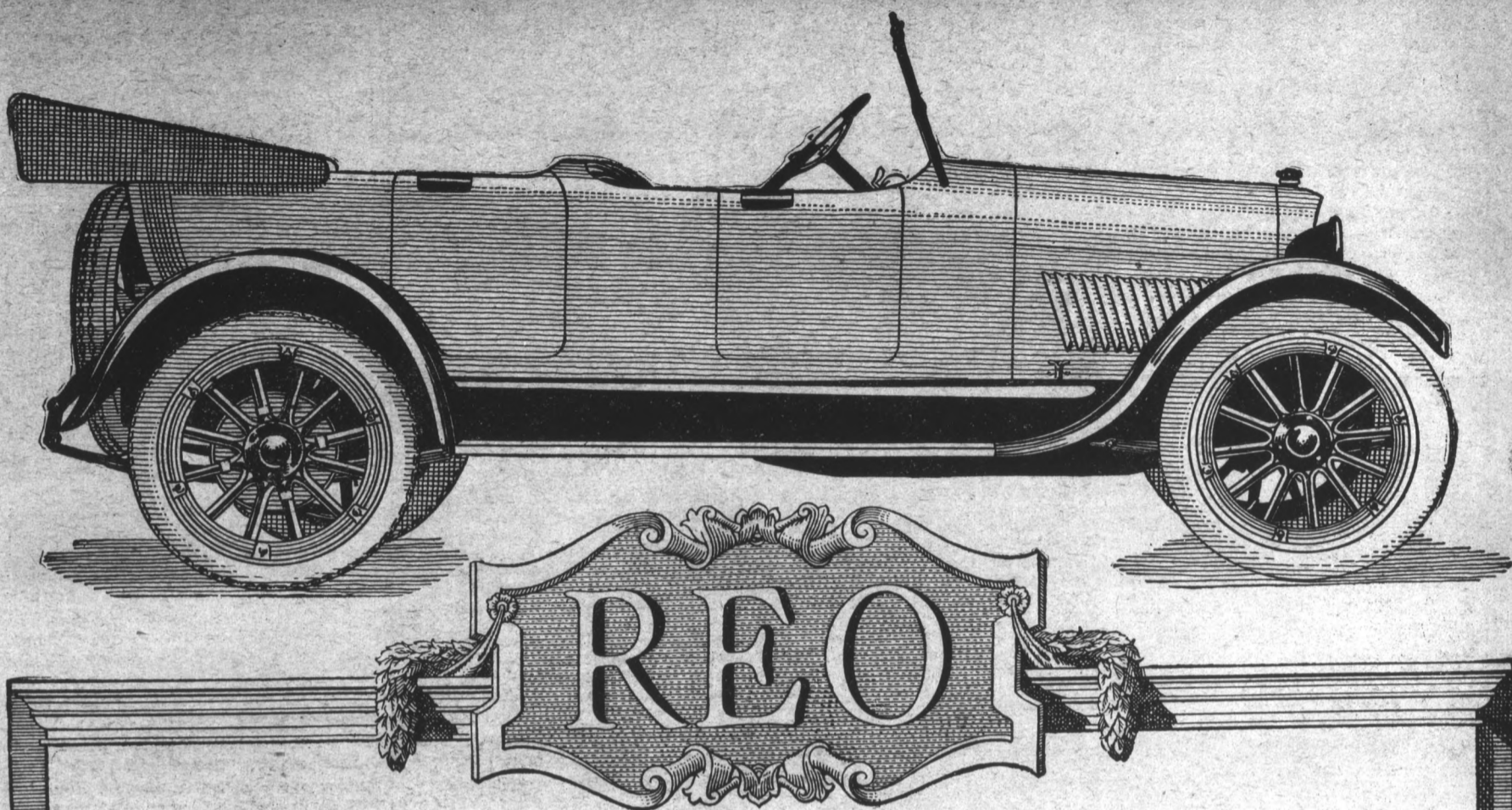
about two-thirds of which is under more or less successful cultivation. Now the land value of Detroit, independent of improvements, is assessed at over \$466,000,000; it is worth in the market \$700,000,000, the assessors, on their own statement, assessing it at two-thirds of its market value.

What is the farm area of Michigan worth, exclusive of improvements? Is it worth any more than "wild" land brings? And if all the 18,000,000 acres of land in farms in Michigan were wild, would they be worth on the average \$10 an acre. In fact, would they be worth more than the original government price of \$1.25 an acre? One will be very liberal indeed, in his estimate of the market value of the farm land in Michigan, independent of improvements, if he places it at an average of \$15 an acre. I am offered very good farm land, unimproved, for \$12.50 an acre, near good roads, within walking distance of schools, and with a railroad not far away.

At an average of \$15 an acre, Michigan's 18,000,000 acres have a market value, due to population, of \$270,000,000—less than half the value of Detroit's

population is thin, there is little call for public revenue; and there is little land value. Where population is dense, public needs require a considerable fund; and site values are high. Where the demand for funds exceed the annual values created by the community, it is evidence of extravagance or inefficiency. In times of stress, such as the country has just passed through, other sources of revenue must be found; therefore single taxers do not object to income taxes, considering them much fairer than the taxation of labor products, which are invariably paid by consumers, independent of whether the consumer has the wherewithal to pay for the next meal or is the possessor of a "swollen fortune," of "unearned increment," or of "war profits."

Taking it for granted that Mr. Rood means land value instead of land, when he says the single taxers hold that a tax on land "cannot be passed on," but stays where it is put, he is right. But in his argument denying this and endeavoring to show its fallacy, he is wrong. And in taking the position he does, Mr. Rood runs up against the



This Is March!—And History Repeats Itself

SPRING IS ALREADY HERE! We are a little late with our regular annual hurry-up message.

ALWAYS AT THIS PERIOD we find it necessary to warn tardy or indecisive buyers that only those who place their orders early—which means at once—can hope to get Reos for Spring delivery.

REALLY, WE MIGHT save the trouble of writing a new advertisement each year—the same copy would fit just as well one year as another.

THE SAME STORY might be told in the same way—so consistent and so persistent is the year-after-year demand for Reos.

FOR, NEVER SINCE THE DAY the first Reo left the Lansing factory and went into the hands of its delighted owner—never since that time has it been possible to make enough automobiles to supply all who wanted Reos.

ORDINARILY—and to a normal degree—that is from the factory standpoint, an ideal condition.

BUT IN MARCH of each year the condition becomes aggravated by an excessive over-demand that is at times discouraging to say the least.

CERTAINLY WE COULD build twice or four times—or ten times—as many Reos per annum as we do.

BUT THE REO POLICY has never been to build the most automobiles—only the best.

WE MAKE ONLY AS MANY Reos as we can make and make every Reo as good as the best Reo that ever came out of the factory.

THAT'S THE REASON for the tremendous demand that always exists for Reos. Reo quality—Reo low upkeep—due to a strict adherence to that Reo policy.

REO IS FIRST CHOICE of discriminating buyers. That's the kind of folk for whom we design and build Reos.

THEY ARE THE KIND of buyers a manufacturer and a dealer appreciates and therefore most dislikes to disappoint or to offer substitutes.

AND WHILE OCCASIONALLY a dealer who also handles some other line will try to sell a customer his Second Choice, because he can't get enough Reos to supply his local demand, he never really likes to do so.

ALL DEALERS PREFER to sell Reos—because they stay sold. And every Reo sold sells several more.

THEN THERE ARE the repeat orders from present Reo owners.

ALWAYS THESE HAVE constituted a large percentage of the Reo demand. They are getting to be a larger percentage from year to year because of the larger number of Reos that have been many years in service. Longer than any other comparable car.

OF COURSE a Reo owner always wants another Reo—the percentage of re-sales to Reo owners is amazing and a matter of which we are most proud.

TO ALL SUCH, THEN, we issue the usual March warning—see your Reo dealer at once and place your order.

MAKE IT DEFINITE by paying him a deposit and specifying a date for delivery. Else he cannot, in fairness to other buyers, reserve a Reo for you.

THEN REST SECURE in the knowledge that you will be one of the "lucky ones" to get a Reo this season.

THERE WON'T BE—cannot be made—enough to go round. That is now as certain as the same thing always has been certain in all previous years since the inception of Reo.

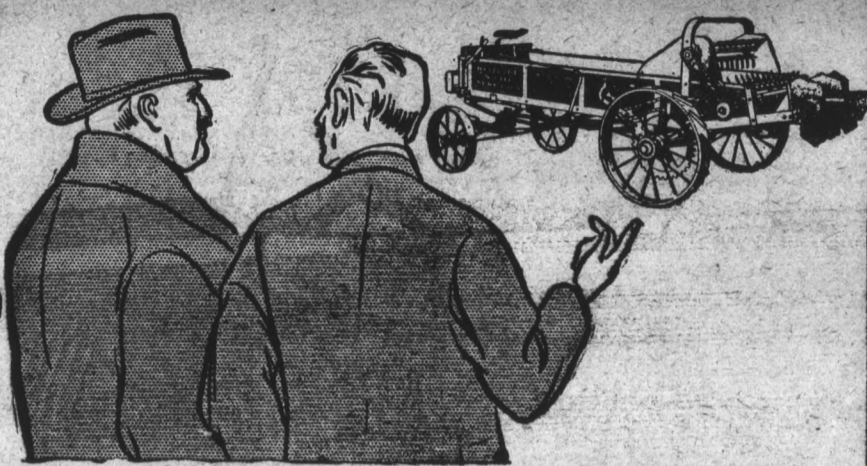
SO DON'T DELAY. Decide now. Order at once.

TODAY won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan

"THE GOLD STANDARD OF VALUES"

BUILT TO LAST



Forty Years Experience Stand Back of the Bellevue No. 10

The Bellevue No. 10 Spreader is built by an organization with over 40 years' experience in the making of farm tools. If you'll go over the No. 10, point by point, you'll see that its construction bears out this fact.

From a small beginning our factories have spread and grown to meet the ever-increasing demand for honestly made goods, marketed at fair prices, backed by a square deal policy for the purchaser. We have kept pace with the demand and the times until today ours is one of the most modernly equipped and largest farm implement factories in the world.

That's the kind of an organization that builds the Bellevue No. 10—that guarantees its economical, efficient service, day in, day out, for many seasons.

That kind of service makes a spreader a worthwhile, profitable investment for you. Certainly you will want to see the Bellevue No. 10 before you buy any spreader. Write for our free Spreader Catalog.

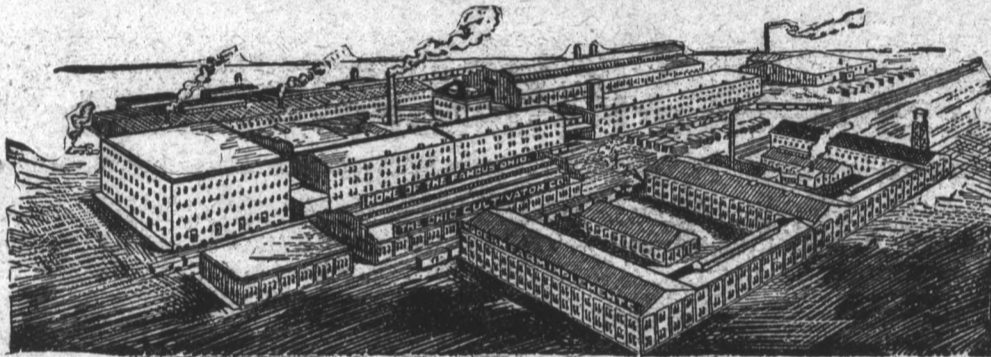
OHIO CULTIVATOR COMPANY

BELLEVUE, OHIO

Address Dept 61



Bellevue Spread Means
A Good Seed Bed



Farms and Farm Lands For Sale

**140 Acres \$3300, with
4 Horses, 3 Cows and**

Poultry, binder, mower, hay rake, plows, cultivators, drag, harrow, implements, crops, near railroad town advantages. Machine-worked loam tillage, clay sub-soil. 30-cow pasture on cream route; estimated 2300 cords wood; timber, fruit. Good buildings, 2-story house, 2 stock barns, horse stable, granary, poultry house, etc. Aged owner makes low price. \$3300, easy terms, gess all. Details this Central-West money-maker page 15 Catalog. Bargains 17 states, copy free. Dept. 814 BC, STROUT FARM AGENCY, Ford Bldg., Detroit.

80 or 200 Acres Easy Terms

well improved farms with stock and tools in southern Michigan; small payment down or will take city property. G. B. Dennis, owner, 138 Charlotte Ave., Detroit, Mich.

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Get my new list of Gladwin Co. Mich.; Farms, Stock Ranches and Out-over lands.
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Has buyers waiting for farm bargains. Especially ones fully equipped. Send full description at once with terms etc. With lowest net price to owner.
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IF YOU WANT to sell or exchange your property write me.
John D. Black, 17th Str., Chippewa Falls, Wis.

McClure-Stevens Land Co.

We have for sale 15000 acres of fine unimproved lands, well located, joining well settled locality, on easy terms. A tract of 160 acres, 5 miles from Gladwin, on daily mail route, all fenced with woven wire, 20 acres under fine state of cultivation. 6 acres in fruit. A Sheep Ranch of 313 acres, all fenced, well grassed over, living water, 700 acres cleared, 30 acres under fine state of cultivation with fruit, good buildings, 250 head of sheep, 4 stock ranches well grassed, fenced and watered with living water.
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Rich Michigan Farms. Low prices, Easy terms.
STAFFELD BROTHERS, 15 Merrill Building, Saginaw, Michigan

WANTED to hear from owner of good farm for sale State cash price, full particulars.
D. F. Bush, Minneapolis, Minn.

Wanted To hear from owner of farm or unimproved land for sale.
O. K. HAWLEY, Baldwin, Wis.

Send Today for Prices and Sample of Acclimated Michigan-Grown Early Yellow Dent
SEED CORN

High germination. Don't experiment this year—get the best seed.

D. WOODWARD & SON
Corn Breeders Clinton, Mich.

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Gombault's Caustic Balsam

The Worlds Greatest and Surest
Veterinary Remedy
HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Caustery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
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SKIN DISEASES,
RINGBONE,
PINK EYE,
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QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
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REMOVES
BUNCHES or
BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

CAUSTIC BALSAM IS THE BEST

Your Gombault's Caustic Balsam is the best I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweetened horse with the Balsam.
—Louis Miller, Sharon, Wis.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINARY REMEDY

Always Reliable.
Sure In Results.



Not genuine without the signature of
The Lawrence-Williams Co.
Sole Importers & Proprietors for the
U.S. & CANADA. CLEVELAND, OHIO

GOMBAULT'S CAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturist about your Gombault's Caustic Balsam, I have tried some of it and think it excellent.—J. M. Worozdovsky, Big Flats, Wis.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
TORONTO, ONT. CLEVELAND, OHIO.



SOME SEED FALLACIES.

JUST how the idea originated that only the seeds of sweet clover contained a large percentage of hard seeds which required scarifying in order to induce germination, while the other members of the alfalfa tribe and the clovers did not require scarifying, is a mystery. The idea is entirely without grounds—an utter fallacy. These hard seeds occur in all of the alfalfas and true clovers, including red, alsike and white. There is no known reason for the presence of these hard seeds. They appear in all climates, in all degrees of drouth and moisture, heat and cold, on all soils.

Actual experiments show that from ninety to ninety-eight per cent of all clover and alfalfa seeds are hard shelled naturally. This was found by germination tests of samples hulled by hand. The results were as follows: Red clover, 299 samples, hard seed ninety-two per cent; alsike, twenty-one samples; hard seed, ninety per cent; white clover, nine samples, hard seed, ninety-eight per cent; white sweet clover, six samples; hard seed ninety-eight per cent.

We have learned another item of vastly greater importance, however. We have learned that the clover huller also acts as a scarifier. And right here I want to digress a moment, for the special benefit of a considerable class of farmers who never see any good in agricultural colleges, experiment stations, crop improvement, farm bureaus and county agents. All the tremendous advancement in agriculture is due to these institutions. The prime object of a county farm bureau and the first duty of a county agent is to persuade all farmers to avail themselves of proven facts. There are some antediluvians who still think that a county agent wants to try out his own theories, making every farm an experiment station. Nothing to it. A good county agent is worth more to your county than a member of congress. That isn't a very good comparison either, so I will ask pardon of the county agent fraternity. Some congressmen are not worth two bits a dozen. Leaving the soft-shelled congressmen we will get back to hard-shelled seeds.

From 208 samples of red clover hulled by machine we get an average of hard shells of only seventeen per cent, as against ninety-two per cent for hand hulled seed. Alsike, thirty-six samples, eighteen per cent hard seed. White sweet clover, twenty per cent, only one sample of machine hulled seed. I tested a sample of machine hulled sweet clover seed the other day that gave ninety-two per cent germination, a very good percentage of scarified seed, even.

We have learned another thing. There is a very great difference in the number of hard shells in seed threshed by different hullers. One hundred and sixty-two samples of red clover seed threshed by six different hullers gave an average of nineteen per cent of hard seeds. One huller left but ten per cent, and another left thirty-eight per cent hard shells. The trouble with these hard shelled seeds is that they are more or less waterproof, and until the shell is bursted by moisture or mechanic means there can be no growth. The absorption of a very small amount of moisture causes the shell to crack by the action of frost, in which case the seed will grow with the return of warm weather.

If you want to sow scarified clover or alfalfa seeds buy a scarifier, but do not pay any fancy prices for scarified seeds, or pay fancy prices to have it done on your own seed.

EDW. E. EVANS.

Raising the Giant Rabbits

By E. I. Farrington

WITH steadily growing demand for meat rabbits, giant breeds have rapidly come into favor. Years ago only the Flemish Giant was known to breeders, but now there are several other kinds, including white, black and checkered. Some breeders are advertising what they call the black Siberian hare, a rabbit which is truly a giant in size, and which has been somewhat extensively exploited as being the best of all rabbits for fur production. There seems to be little reason to believe, though, that this is



They Yield Both Meat and Fur.

really a distinct breed. From all the evidence that can be obtained this breed is identical with the black Flemish giant. The claim has been made that these rabbits were introduced from Russia by a Jewish immigrant, first being bred in Canada. Government officials say, though, that there is no black rabbit in Russia or Siberia, and that all the hares in those countries turn white in winter. As a matter of fact, there is no more reason for calling any giant rabbit a hare than there is for giving that name to the Belgian hare. The Giants are really true rabbits, for they are born naked and blind, while hares always have their sight at birth and quickly begin to run around.

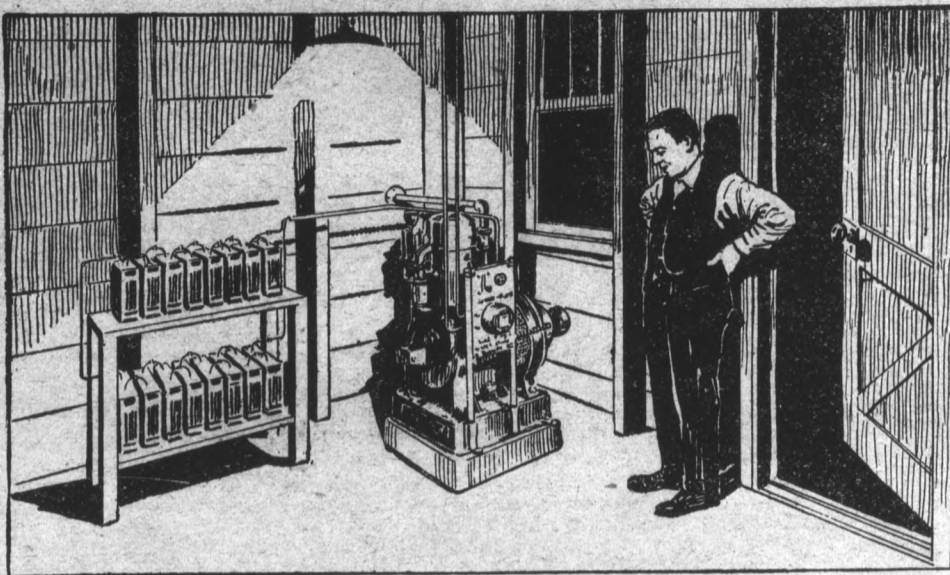
The black Flemish, or whatever name it may be known by, certainly produces an excellent pelt. After all, though, the fur proposition is not one of great importance at present. Of course, the pelts should be saved, at least in winter when the fur is in good condition, but they seldom bring more than fifty cents apiece, so that it would not pay to raise rabbits for their fur alone. It is as meat animals that they are most valuable, with the pelts as a by-product.

The white Flemish are not common as yet, but are especially good animals. Of course these black and white breeds are sports from the true Flemish.

Just what the origin of the checkered giant was seems to be shrouded in mystery. Formerly it was called the German checkered giant, but when the war broke out that name was dropped by unanimous consent and the word American substituted. Probably they are just as much entitled to be called American as German. It has developed of late years that the German name had been tacked to many things without warrant. In any event the checkered giant is as handsome a rabbit as can be found anywhere. It much resembles the English spotted rabbit, although much larger. It is white with black spots on its sides and with a solid black line along the back, although this line doesn't have the herringbone pattern which is found on the English rabbit. This checkered giant has a black snout, and is a compact, well-set-up rabbit. Its fur is especially attractive when made up into garments. As it is not very common yet, although seen at most of the shows, this is rather an expensive rabbit so far, but it is

(Continued on page 439).

Western Electric POWER and LIGHT



For every power use, this direct-connected set will furnish the electricity at low cost

The Western Electric Company believes that electric power will do for farming what it has done for other industries. It believes that every business farmer will consider the purchase of a sturdy, dependable power plant when offered by a manufacturer with unlimited resources for making good every promise. It backs up this belief by offering the Western Electric Power and Light plant in one neat, compact unit—the result of many years of experimenting.

The entire plant stands about 4½ feet high. The engine burns kerosene or gasoline; is throttle governed and air cooled.

The plant automatically starts itself at the touch of the starting lever; oils itself automatically; feeds its own fuel automatically by a vacuum feed system; automatically gives a tapering charge to the battery; stops itself when the battery is fully charged. Every automatic feature that can add to simplicity and reliability is found on this Western Electric Plant.

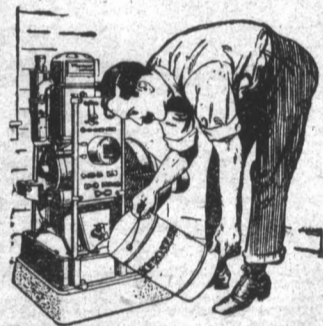
Small motors for pumps, cream separator, fanning mill, etc., can be operated directly from the generator thereby saving the battery for use at night. Many farmers are already using the Western Electric Utility Motor, a ½ horse power motor which can be carried to the work.

The Western Electric man near you will demonstrate this plant to you—and tell you about the many Western Electric labor savers for farm and home; all have been proved practical on farms everywhere.

Write for booklet No. 14-MF and we will tell the Western Electric man to get in touch with you.

THE WESTERN ELECTRIC CO., Inc.

Kirby Ave. and Dequindre St., Detroit, Mich.
500 South Clinton St., Chicago, Ill.



The fuel is poured into the base of the engine which burns kerosene as well as it does gasoline.



A REAL FOUR-POW TRACTOR

Here's a tractor that will do your big power jobs, and your small ones, quickly and extremely economically.

AULTMAN-TAYLOR 15-30 TRACTOR

In quality, design and power, it is just what the average farmer needs to solve his power and help problems. Back of this tractor stands an old reliable organization that is ever ready to see that the tractor makes good on your farm. You take no chance whatever. For your benefit, we carry a stock of repairs covering our entire line at our Lansing branch.

Write us today for catalog and full particulars.
The Aultman & Taylor Machinery Co.
630 Michigan Ave., E. Lansing, Mich.
Home Office, Mansfield, Ohio

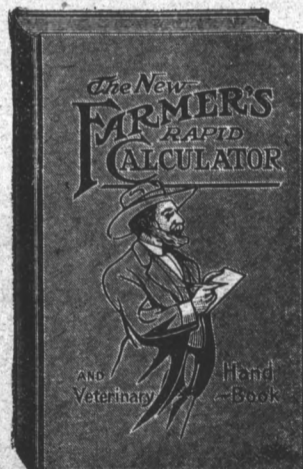
WANTED

Several old fashioned "P. D. Beckwith" cast iron roller Grain Drills. Need not be in running order, except wheels. A. M. TODD CO. Menasha, Mich.

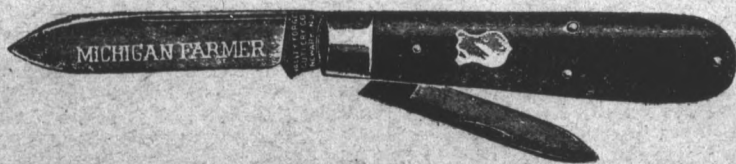
Farmer's Rapid Calculator and Veterinary Book

Indispensable to the farmer, valuable to all members of the family. This little book contains veterinary information, interest tables, methods of calculation, weights, measures, dimensions, etc., and a farm record which contains a simple method of keeping record of receipts and expenses of all branches of farm work. Convenient size, 3½ x 6½ inches, fits in the pocket, durable cloth binding. A time-saver every farmer should have.

Sent prepaid for two subscriptions or for one subscription and 15 cents additional.



Our Quality Knife



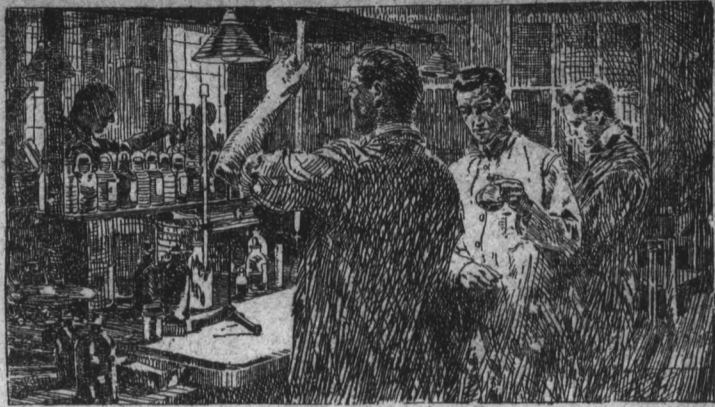
Made by the famous Valley Forge Cutlery Company. Two blades made of best razor steel. Ebony handle. Brass lined and well finished throughout. Guaranteed to give satisfaction. High-grade every way.

These knives were bought at pre-war prices, otherwise we could not make the attractive offers below. They are extra good value.

Sent prepaid for two yearly subscriptions to the Michigan Farmer at \$1.00 each, or for one subscription and 50 cents additional.

WALTHAM THE SCIENTIFICALLY BUILT WATCH

AND THE FOREIGN BUILT WATCH



The Hair Spring



A Campaign to Aid You in Selecting Your Watch

THE hairspring is the brain of the watch. It is the most delicate tension spring made. For use in the small sized watch, 84,000 springs are made from one pound of steel, raising the value of that pound of steel from \$5.00 to \$30,000.

The Waltham hairspring steel is drawn through diamond surfaces, and for the smaller watches, to a third of the thickness of a human hair.

The Breguet, or over-coil (named after its inventor, a famous old French watchmaker), is used on every Waltham watch. The most important part of the complete operation in making a hairspring is the forming and tempering of this Breguet over-coil.

At Waltham, instead of being formed or bent by hand as a separate operation, the entire completed hairspring is formed at one and the same time, after which it is hardened and tempered in form—the invention of John Logan, American watchmaker, a genius who was a part of Waltham leadership in watchmaking. Indeed, Waltham is the only watchmaker that claims this perfect method of making the Breguet hairspring.

The foreign, imported watch movement has a hairspring that is first formed in the flat, then hardened and tempered in the flat. Then the outer-coil is bent to form the Breguet over-coil, which, if the flat spring were as hard as the Waltham, and properly tempered like the Waltham hairspring, it could not be bent to correct form, and would be liable to break in the attempt.

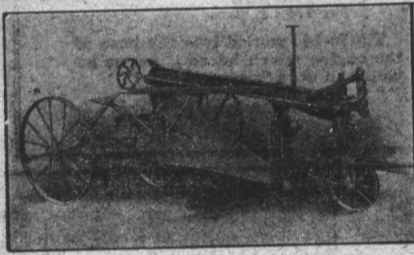
Waltham superiority is in original method, secret process, unvarying quality of every important part of the watch—a quality that cannot be equaled by the foreign "hand" method of manufacture. That is why Waltham leads the world in standardized watchmaking, and why your watch selection should be a Waltham.



The Riverside
The most dependable moderate price
watch in the world
\$60 and up

WALTHAM

THE WORLD'S WATCH OVER TIME



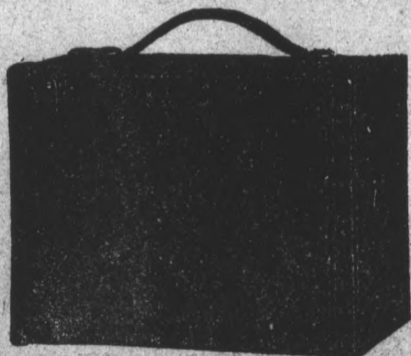
The Little Wonder TILE DITCHER

Will Save 80% of Your Work

Will ship to any responsible party subject to approval, without a cent in advance. Absolute satisfaction guaranteed. Write for terms and circular.

GEORGE TROOP R. D. 5 St. Johns, Mich.
EDW. JESCHKE Bellevue, Ohio

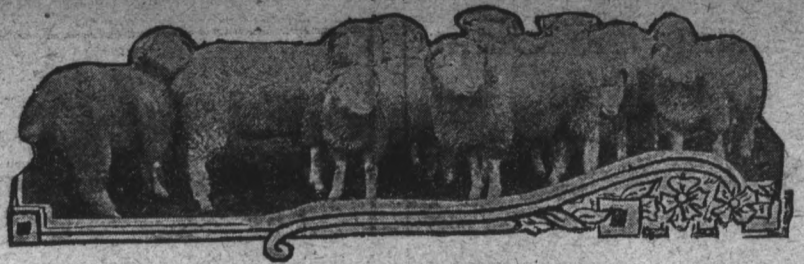
A Premo Jr. Camera



The PREMIO JR. MODEL B is a well-made, substantial, reliable camera in every respect. This camera has to stand the usual rigid tests which are applied to all cameras made by The Eastman Kodak Co. It loads and unloads in daylight with the Premo Film Pack of 12 exposures. It makes pictures $2\frac{1}{4} \times 3\frac{1}{4}$ inches in size and the negatives are of such quality that excellent enlargements can be made from them.

The instrument is fitted with an automatic shutter, which works for both time and "snap shot" exposures, and the best grade of single achromatic lens that can be obtained. It has two finders, one for vertical, the other for horizontal pictures,—in fact, it is as well equipped a camera as could be wished for in the box type. It will produce first-class results in all ordinary amateur photographic work, such as snapshots in good light, time exposures, home portraits, landscape and street photography, and the like. This camera is unusually simple to load and operate. A complete book of instructions is included with each one, and even a schoolboy who never had a camera in his hands before, can make good pictures with the Model B Premo Jr. within half an hour after getting it. Sent charges prepaid for 3 Subscriptions, or for One Subscription and \$1.25 additional.

Address The Michigan Farmer, Detroit, Mich.



Wool Growers at Columbus

By V. A. Freeman

THE sheep meeting called by the Tri-State Wool Growers' Association at Columbus, Ohio, on March 6, proved to be a very interesting and instructive meeting for those present. There were in attendance not only wool growers and representatives of wool growers' associations, but representatives of the wool dealers and all the other allied interests. Those present left with a greater feeling of security so far as the future of the wool situation is concerned.

One important fact brought out was that there was no great excessive accumulation of wool in the world at the present time, but that the situation varies from normal in the piling up of great quantities in certain places, and the lack of distribution rather than a large supply. Estimates of supplies on hand for the world market were smaller here the end of 1918 than one year previous, and basing future consumption on the normal rate before the war, there will be considerably smaller supplies on hand in the United States at the end of 1920 than at present.

Although accurate data as to the exact quantities of the different grades of wool held by the United States government is at present being withheld, the fact was brought out from a reliable source that a large part of the government's holdings is of a low grade of wool and of short wools that do not normally come into competition with the best fleece state wools. The fact that manufacturers are purchasing at the government wool auctions the best grades of wool at a price somewhat above the British issue price indicates that they feel the scarcity of such wools. The impression was left that the wool grower should not fear serious drops in price for his better grades of wool.

All of the allied interests as well as the growers themselves feel the importance of improving the grade of wool we are producing, and especially improving the manner in which it is put up. It was shown that selling on merit, whereby the producer would receive the exact value of his wool would be one of the best methods of bringing this fact to the attention of the growers. Last year there were several cents a pound variation in the value of the different wools produced in this state, yet the most of our wool was sold at a flat rate, each grower not knowing whether he produced a more valuable grade of wool than his neighbor. It is likely that there will be an even greater variation in the market value this year, on account of the limited supplies of our best wool and the large supply of low-grade wool held by the government at the present time. The low-grade wools held by the government have been withdrawn from the sales in most cases because of the low bids on them.

Representatives of the cooperative wool marketing associations present all gave glowing reports of their success last year. Of course, the fact was recognized that the prices being set eliminated many of the difficulties that might be encountered in cooperative marketing of wool last year, but these associations are branching out and new ones are being formed in most of the fleece states, so it is evident that a much larger volume of wool will be marketed cooperatively this year than ever before in this country.

Outside of the Ohio Sheep and Wool Growers' Association, most of the states are organizing on a county basis with a county selling unit. The county units look after the grading and shipping of the wool and in most cases consign it to some recognized wool dealer. In New York state last year the wool dealers sent their wool grader to the counties where schedules had been made out for the dealer's representative to go from one county to the next. Some counties had only one shipping point and some had as many as three, depending upon the quantity of wool and the central locations for the wool growers. Forty-five thousand pounds was delivered by the growers, graded and placed in cars in two days at one of these shipping points in Tompkins county. The cost of handling wool by this method was represented as being very low, but will be somewhat higher this year because the wool dealers' commission for handling the wool was paid by the United States government last year.

This method of handling permits each grower to see his own wool graded. If it is of a high grade and market value, he receives a high price for it, and if it is of a low grade he can learn the reason and thus be able to improve his grade the following year. It is the most practical way of increasing the interest in raising our standards of production, and has resulted in great good for this reason alone.

Decided action was taken in the support of having the manufactured woolen goods sold according to a standard of the per cent of wool or shoddy in the cloth. It was brought out by a representative of the Retail Wool Dealers' Association that there are practically no standard grades for manufactured woolen goods at the present time.

A representative of the United States Department of Agriculture reported that the work of checking up the excessive profits made by wool dealers is being carried on as rapidly as possible. Out of reports from five hundred country dealers which have been checked up, only twelve made excessive profits, the greatest being only \$1,000 for the whole year, and a large number reported losses. It is thought that larger profits will be found in checking up approved concentrating dealers, who were organized with field representative for country buying.

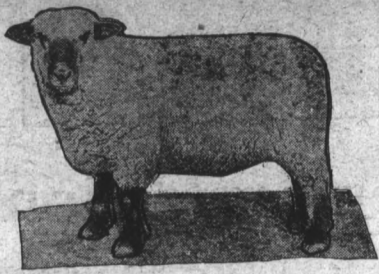
The meeting was a great success, and the Ohio Wool Growers' Association and others interested deserve considerable credit for their work and the efficient way in which they conducted the meeting.

Sheepmen Meet

THE meeting at M. A. C. was well attended. Not only was there a larger attendance, but there was more interest and enthusiasm in the sheep industry than usual.

President E. S. Read, in his opening address, outlined the status of the sheep business now as compared with 1900, and brought out the fact that we have room and need for 5,000,000 sheep in Michigan, instead of the 2,000,000 that we have at present. This condition would not exist if there were not something wrong, he said, as he took up the two evils, "Dogs" and "Lack of Organization."

(Continued on page 443).



A SUBSTITUTE FOR HAY.

What is a good substitute for clover and timothy hay? I won't have any hay the coming year and would like something to feed work horses. Would millet do? How is alfalfa treated to have it grow, or rather how is the soil inoculated?

Isabella Co.

R. J. W.

About the best substitute I know of for clover and timothy hay is field peas and oats grown together. Harvest them when the oats are in blossom and the pods of the peas just nicely forming. Don't wait until they are ripe. Cure them just as you do clover hay. You will be well satisfied.

If you get these peas and oats in early you will harvest them the last of June and there is still time to disc this ground and sow it to millet or Hungarian grass and this also is an excellent substitute for hay.

Alfalfa is inoculated in different ways. The easiest way is to purchase pure culture from some commercial laboratory that supplies alfalfa culture and inoculate the seed before you sow it. Directions come on the package telling you how to treat the seed with this.

One good way is to dissolve a little glue in warm water, sprinkle this warm water over the alfalfa seed and thoroughly stir until every seed contains a film of moisture, then put on some soil for an inoculated field and stir it thoroughly. The glue will stick the culture to the seed.

You can inoculate the soil by getting soil from some old alfalfa field. Screen it so as to get out the stones and hard lumps, then drill it in just as you would fertilizer, say 100 pounds or 200 pounds per acre, and you will get good inoculation in this way.

C. C. L.

PREPARING GROUND FOR OATS.

I would like to ask your opinion as to the best method of preparing the soil for oat seeding. This farm is rolling, with clay gravel loam and sandy loam. The usual practice here seems to be to turn the soil with the plow, but would not the disc harrow do as well? This is my first year in Michigan, and many things are different from my past experience.

Van Buren Co.

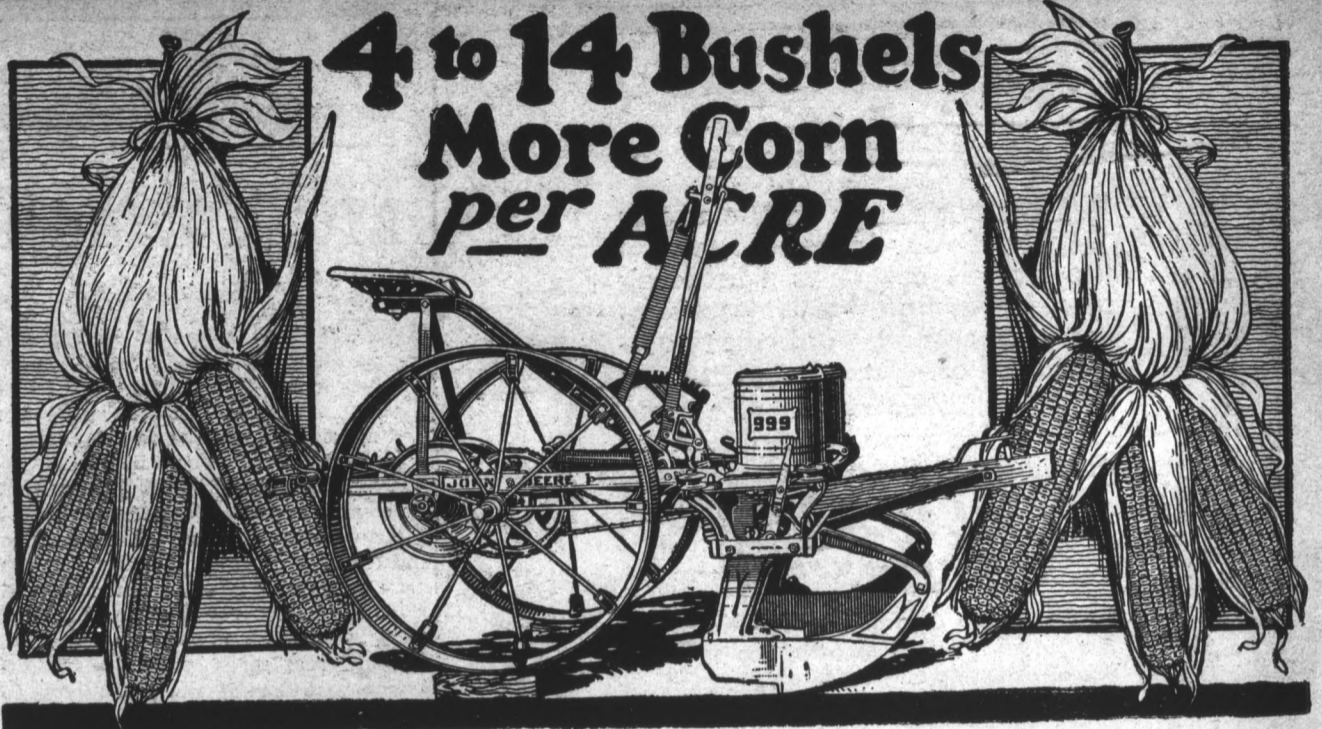
W. A. H.

It is quite a common practice all over the oat belt to prepare the last year's corn field, or corn stubble, as it is called, for oats, by discing it thoroughly with a disc harrow. If the corn ground the previous year was well cultivated and there isn't too much trash on the ground, this is a splendid way.

I think you can prepare even a better seed bed by discing than you can by replowing. When you re-plow you get the soil too loose for the best seed-bed unless great care is taken to pack it all down by rolling and pulverizing. But if this ground is infested with June grass, if it hasn't been properly tilled previous to discing, the discing will not subdue the June grass and you will have June grass in the oats which will prevent you from getting a good crop. If you have patches of June grass all over the field, the only practical way is to turn the soil bottom side up, as that destroys the June grass for the time being.

C. C. L.

If a dog is used in driving the cattle, insist that it walk at their heels instead of their heads; and that it walk, not trot. A poor dog will do untold mischief, and that very quickly; one properly trained will save many steps.



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Muck Land Demonstration

By Ezra Levin, Muck Crop Specialist

I HAVE been asked to discuss the results of the Deckerville demonstration acre. It requires very little discussion. An expert could probably find a great many flaws in this demonstration, but it accomplished the results of showing what can be learned by comparisons in a practical way.

It was a starter; all we did was to scratch the surface. Now that we have confidence in our method we will plan our work more systematically; apply fertilizers in various amounts, sow different rates of seed, plant different varieties of the same crop to study their adaptability to the local conditions. Thus, we can bring the Agricultural College to the farmer in a tangible dollar-and-cent way. We are anxious to start this type of demonstration work on muck in all parts of the state where conditions warrant it.

It should be noted in passing that the potash in the manure was probably the most valuable single element for the crops planted.

Here is what Mr. Merriman, of Deckerville, on whose farm the demonstration work was made has to say:

I wish to submit a report of a muck crop demonstration carried out on our farm last year under the direction of Mr. Ezra Levin, Extension Specialist of M. A. C.

In spite of the labor shortage, the frosts and drought, I consider the results very gratifying.

The first I heard of the muck demonstration was through the local paper, the Deckerville Recorder.

Mr. Levin met with a few interested farmers and after hearing discussed the benefits to be derived from the different fertilizers it was decided to secure a piece of muck land and make the experiment for the benefit of the muck land owners in this vicinity.

The Michigan Sugar Company, of Croswell, the E. B. Muller Chicory Co., of Port Huron, and the Flanders Company, of Deckerville, each donated \$25, which nearly paid for the seed and the fertilizer, and I was chosen as the lucky one to furnish the land, do the work and take the crop, which paid me for the time and effort spent.

We selected a plot eight by twenty rods, with muck about two feet deep and a clay bottom. This had been cropped for fifteen years without fertilizer in any form and oftentimes with poor results. It was well drained with deep tile ditches.

There were 500 pounds of sixteen per cent phosphate, 500 pounds of dried blood and 500 pounds of bone meal per acre used, also six loads of well rotted manure.

Starting at the east end we sowed two rods with phosphate, then two with manure and phosphate, after which we left a space of two rods with no fertilizer, then two rods of phosphate and blood meal, followed by like amounts of dried bone meal, bone meal and manure, and manure alone. This was all applied after plowing, the fertilizer by drill and the manure disced in. After this we rolled very firm and started the hand-drill on the north side, going the full length of the field, crossing the fertilizer strips with all crops which started with onions, followed by carrots, lettuce, celery, peas, cabbage, beets, chicory, white beans, soy beans and corn.

Starting at the north side, which is also, the road side, the onions were fine, except the plot where no fertilizer was used. This would be noticed by

the most casual observer and many asked why they were so poor in that one strip; in fact, they were not worth harvesting while those on other plots were good, especially on the phosphate and manure. Other plots looked about as good until harvest when this plot ripened earlier and of a better quality. This was generally the result over the whole experiment.

The beets and chicory were weighed from each plot as harvested and again we found the phosphate and manure in the lead about eleven tons per acre over the unfertilized plot which yielded at the rate of ten tons per acre.

Next came bone meal and manure which was very nearly as good, then the manure alone. I should add here that there was more labor required to keep the manure plots free from the weeds.

We have not the weights of all crops but there seemed about the difference cited above between the fertilized and unfertilized plots. I should say the cab-

	MANURE	BONE MEAL	DRIED BLOOD	NO FERTILIZER	PHOSPHATE	100% PHOSPHATE
CORN						
SOYBEANS						
WHITE BEANS						
CHICORY						
BEETS						
CABBAGE						
PEAS						
CARROTS						

Diagram of Plot.

bage showed the greatest difference while the carrots, peas, chicory and white beans showed the least.

We had a heavy frost in July which damaged all the plots and, of course, killed the white beans and corn. The soy beans stood the frost much better, and here was a great lesson to me. The plots that were well fertilized resisted the frost much better than the plots where no fertilizer was sown.

We have sown a strip of wheat where the peas were and will sow spring wheat, oats and barley in the spring to see what results we might expect the following year without adding more fertilizer. Will also sow different quantities of the same seed to ascertain correct amount of seed to sow and to learn if the same amount should be sown regardless of the state of fertility.

We never did anything in the farming line which seemed to repay us so well as the effort spent on the muck demonstration acre. I wish that anyone who expects to use fertilizers on muck would look the following chart over and if they do not find what they are particularly interested in I will be glad to give information from the observations I made which after all give the clearest lessons. For instance, the corn made as good a showing as any crop, yet as the frost killed it I can make no definite report as to results, also the onions on plot where no fertilizers were sown they were not worth harvesting. The remainder were fair crop. The carrots, chicory, peas and soy beans showed the best without fertilizers yet there was a great difference in the plots.

Altogether, it was a very profitable acre, and I have only mentioned a few of the valuable lessons we have learned from it and Mr. Levin.



Fallacies in Feeding Beef Cattle

By L. C. Shepard

CATTLE feeding is a business that must be viewed from many different angles if one makes a success of it. What is termed success in cattle feeding is the same as in any other business pursuit, viz., a financial gain or making money out of the business. Different types of feeders must of necessity be handled differently to get the best results. There are mature feeders of the best beef type. The calf or baby beef of the same type. The low grade or scrub adult or baby beef type. Each of these different types and grades must be handled differently.

Most people ignore the scrub in the feed lot. But as long as they are raised they must be fed out or go to the shambles unfitted. Nearly all dairy bred cattle are scrubs in the feed lot, no matter how well bred they are in the dairy line. They are poor feeders and never make fancy beefs. In this article I wish to speak of the best grade of feeders of the more mature kind. Say, two-year-olds or better, and with these as with all other sizes or grades, have them of as uniform size, shape and color as possible, for several reasons. First, they will feed better because there are no small ones or underlings for the large ones to fight and abuse, each one being better able



to take their own part. Then, if of the same size and color, they look better to everyone, including the commission man and the buyer, and everyone interested will work harder to get the best price, and if the cattle are worthy, to make them top the market. He knows it is to their interest to do so. And a buyer will pay a little more for a nice even bunch.

Now, after you have your feeders, and if not of a uniform size I would advise dividing the feed lot and sorting them up as best you can as to size, if they are to be dry-lot fed. But if they are to be summer-fed in pasture then let them all run together. I like summer feeding on pasture best, as it saves a lot of work. There is no manure to haul out and it is distributed over the pasture better than it can be done by hand or a spreader, and much easier and cheaper. The most essential things about summer feeding are plenty of good leguminous pasture, water, grain, salt, shade and a rack full of good hay.

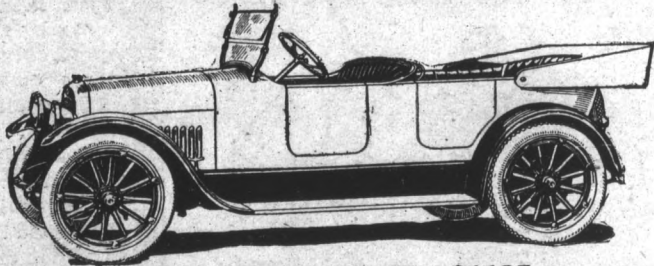
Now, in starting to feed one should be very careful. Don't try to get them on full feed too quickly. Better be a full month or longer than to get some of them off feed and perhaps scouring. For if so, they will lose more in one day than can be put on in the next week. Cattle rightly started while on good pasture, will gain faster on the same amount of feed than dry-lot-fed cattle. And here again you save the labor and expense of putting up the hay they eat. I like the self-feeders after the cattle are on full feed. It is a labor-saver and they never get overhungry if the self-feeders are kept supplied. Don't neglect the water. See that they have access at all times to good fresh water. Likewise salt. And have a rack of good hay for them to

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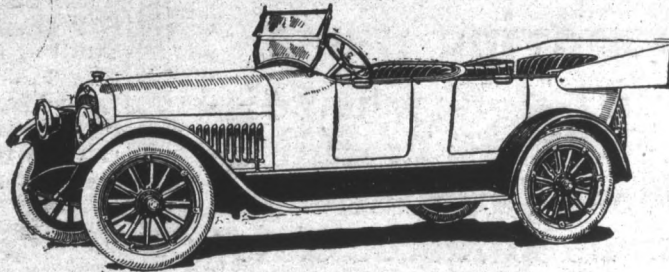
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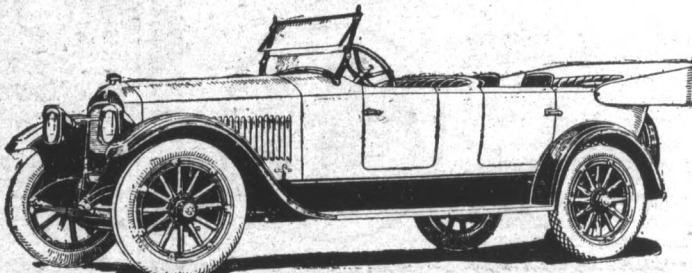
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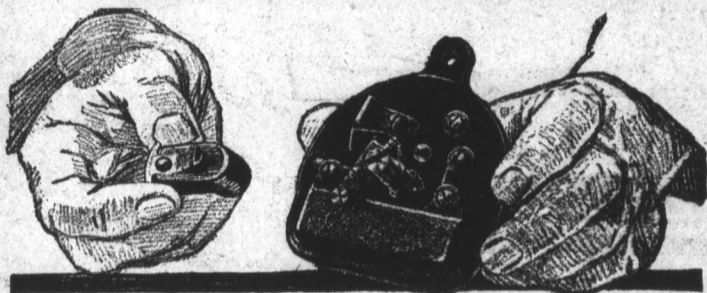
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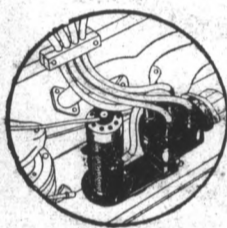
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run to. They will eat more hay than one might think while on grass, and where they have access to good hay they are not as apt to scour or bloat.

As winter or dry-lot feeding is somewhat different from summer feeding I would say, sort your cattle as I have described before, if need be. And if horned cattle have them dehorned. They feed better and require only about half the shed room and they usually sell better. Don't have your yards too large. Warm the drinking water in cold weather with tank heater. It is cheaper than to warm it with feed. Give them a good dry bed and a good open shed free from draft. What I mean by an open shed is one side open preferably the south, and all other sides closed tight. And of sufficient size so all can get in and not be too crowded. It should be kept well bedded and dry.

Remember, in your cattle you have a money-making, or a money-losing machine, and their ability to make money depends on the care and feed you give them. If they have a good dry bed where they can lay down in comfort they will put on flesh much faster and with less feed. And then another essential thing is kindness. Pet your cattle and handle them much, always being kind to them. They appreciate it and will reward you by putting on a few more pounds of flesh.

In regard to feed, I would say by all means feed a balanced ration. While

corn is one of the most essential feeds it is by no means the only feed, and should never be fed alone. There are several feeds that should be used in connection with corn. And the more variety of feeds used the better results as a rule.

Cottonseed meal should be used and especially if cattle are fed on pasture, as it is somewhat binding and cattle are not as apt to scour. Oil meal is good, but it is somewhat of a laxative. Both are good. Bran and oats are also good and should be used in connection with corn. And if roots are available they, too, can be used to good advantage. As for roughage, good alfalfa hay and corn silage leads them all. Clover hay, cowpea hay or soy bean hay make good second choice. Corn has a tendency to harden the flesh and no animal will put on flesh as rapidly with corn alone as their flesh becomes too hard. Their flesh and hide should be mellow and loose, what the breeder calls a good handler. And they are easily kept in this condition if properly fed and cared for.

Cattle of different size and ages require different amounts. Don't overfeed until they are on full feed, and then if the different feeds are constantly before them, they will balance their own ration and will not eat too much. Before they are on full feed be very particular to feed regular. Have a few hogs to run with the cattle. Enough to clean up the waste.

Quality of Potatoes

We Cannot Compete Successfully in the Potato Markets of the Country Until We Produce Potatoes of Quality.—By R. C. Morris.

THE potato growers of Michigan must come to a realization of the fact that our potatoes are being discriminated against in many markets in favor of California and Idaho potatoes, as well as the potatoes from other states nearer home.

It is always an easy matter to repeat superficial truths, and call attention to the existing conditions, but to find the proper remedy is still another story. Let us try and review our work and devise a remedy for the present discrimination against our Michigan potatoes.

The Michigan potatoes I discovered on an extensive trip through Michigan, Indiana and Ohio, were clean, nice, smooth, uniform potatoes; all passing over screens as U. S. Grade No. 1 stock, seemingly a better potato than the Pacific Coast states were putting on our markets, until they were cut. Then the Michigan potatoes were of inferior quality, unripe and the starch would almost immediately, upon cutting, begin to turn a reddish brown and in less than five minutes from the time the potato was cut would be entirely covered with a reddish color, indicating an unripe condition.

The California potatoes shipped to the same station in Ohio in bulk in carload lots—when cut would show a smooth, white appearance and would continue to be white for a much longer period.

The prices in a retail way were \$1.50 per bushel for Michigan potatoes and \$3.75 per bushel for California-grown potatoes.

This inspection of potatoes on a quality basis is what we are coming to and we must meet it squarely in this, as in all other lines of business. It is clearly a case of a "survival of the fittest." The government says that a U. S. Grade No. 1 potato shall be run over a screen of a certain dimension and be ripe, but, let me ask you, how many potatoes shipped out of Michigan are ripe and of good quality?

The knowledge of the fact that the later we can plant a potato and get a

good growth the larger yield we secure has caused many of us to look for the number of bushels of U. S. Grade No. 1 potatoes that can be produced rather than to encourage a greater demand for Michigan potatoes through improving the quality.

I am no better than the rank and file of Michigan potato growers as we lost twelve hundred bushels by pressing weather last fall. But, unquestionably the man who is going to get the most money out of his potato crop will put them up in bushel containers with a brand guarantee as to quality.

Quality is the keynote of success in this line as well as in the fruit business. The Ben Davis apples sell for about half as much as the Jonathan. The same with the Keiffer pear in comparison to pears of quality.

I think I can see the time coming when potatoes will sell to a public educated as to what constitutes quality in potatoes. I would like to have the potato growers of the state come out with this idea of the best quality of Michigan potatoes.

I will ship a carload in the spring in bushel baskets under label, as I can see how I can make it a paying investment to buy the baskets. Think this over: Is it not true that three-fourths of our Michigan potatoes are really unripe and unfit for human consumption? Is it not time that we made an effort to remedy this condition?

TESTING SEED CORN.

FARMERS should not lose the lesson of last spring with reference to the importance of testing seed corn. Corn that to all outward appearances was sound proved to be worthless for seed. The farmer should never take a chance with seed corn, but should thoroughly test every ear intended for seed. The sand and sawdust tray and the rag-doll testers give good results.

The best type of swine have been evolved from the experience of breeders and packers.



Favors "Michigan Standard" Grade

SHALL the potato growers of Michigan accept the grading rules of the Bureau of Markets as the final word on potato grading? I think they will not, for while there is not the expressed dissatisfaction with the amended rules now in force that there was a year ago, there is a strong feeling on the part of leading growers that the action of the Michigan Potato Growers' Association demanding a grade calling for the use of an inch and three-quarters round mesh screen and naming such a grade of potatoes Michigan Standard Grade, is just the way Michigan's great commercial crop should be marketed.

After studying the potato question from every angle the writer is firmly of the opinion that such a grade is what we should all work for as the grade to be adopted all over the United States for marketing the bulk of the potato crop.

The experiment of two grades has been tried by the Bureau of Markets and the result has been that No. 2 grade has not figured much in markets, and that the bulk of the potato crop has been marketed as No. 1's and that there is really no demand for No. 2 potatoes.

Michigan growers have been unanimously in favor of one grade of potatoes for the great commercial crop and all shippers I have talked with are of the same opinion.

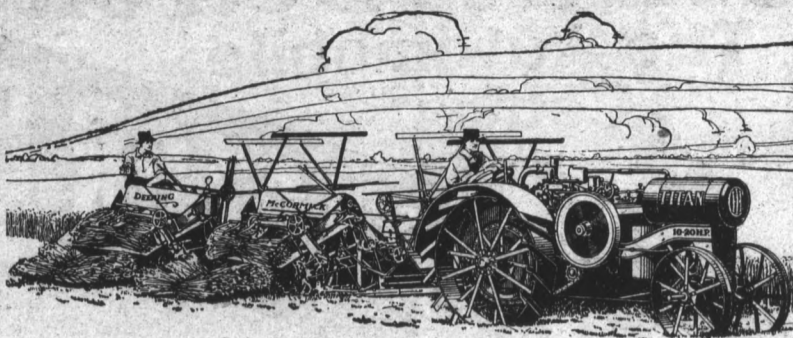
When only one grade of potatoes is marketed it is obvious that that grade should include all good edible stock. Therefore such a grade should include smaller potatoes than the present U. S. grades No. 1, while at the same time excluding stock too small to be acceptable to the consuming public. One-eighth-inch change in the size of a screen seems very little but it is surprising what a difference such change made this last season. Now one more change to what the growers want would fix the potato situation as far as grading is concerned, to the satisfaction of both growers and general consumers. Provision might be made for a special grade to supply special trade but that is a secondary matter. The specialists can take care of that to suit themselves.

The last meeting of the State Association instructed our secretary to correspond with other state associations on this subject and the writer believes that that is the correct method of procedure to secure a change in the U. S. Bureau of Markets rules. It would seem that if several states adopt one grade, inch and three-quarters, that the Bureau of Markets would make their rules to conform to the wishes of the growers, for government by the people is according to American ideals.

Other provisions of the Bureau of Markets grading rules dealing with such matters as sunburn, cuts, scab, rot, etc., have been recently amended to make more liberal provisions and are now fairly acceptable to growers. In fact, no honorable grower wants to sell worthless potatoes, but all growers do object to rules shutting out of the markets or putting in an inferior class sound edible stock which is just a trifle too small to go over an inch and seven-eighths screen, but which would go over an inch and three-fourths screen. One grade of spuds is what we ordinary growers want. Let us keep at it, until we get what we want.

A. M. SMITH.

We are at the beginning of a period of enlightenment concerning the possibilities of hog-farming.



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WHILE you cannot altogether control the size and quality of your grain crop you can control the harvesting no matter what conditions prevail. It is always good business to waste no grain—this year it is especially good business. Grain will command exceedingly good prices in 1919. You can ill afford to lose any of your crop through inefficient harvesting methods. It is extremely important that your binder be equal to its task.

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There is no better time than now to see your local dealer about your binder, and to place your order for Deering, International, Milwaukee or McCormick binder twine.

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We have a great many graduates from this school in our employ and every one has given entire satisfaction. Trusting this information will be of benefit to you, we remain,
Very truly yours,
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The Michigan State Auto School occupies an entire building on Woodward Avenue, in the heart of the automobile district, equipped with the most up-to-date mechanical appliances.
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The leading automobile factories in Detroit and other cities endorse our school, our equipment and our methods of teaching. Read some of their endorsements on this page. These were written in reply to letters from different parts of the country asking about us. We enjoy their keenest co-operation; and you, as a student (here in Detroit, the auto center), get the benefit of it. This school is highly endorsed, and has a world-wide reputation for excellence.

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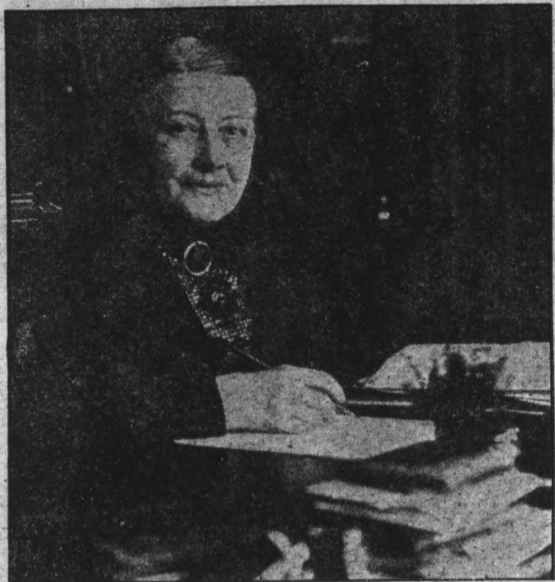
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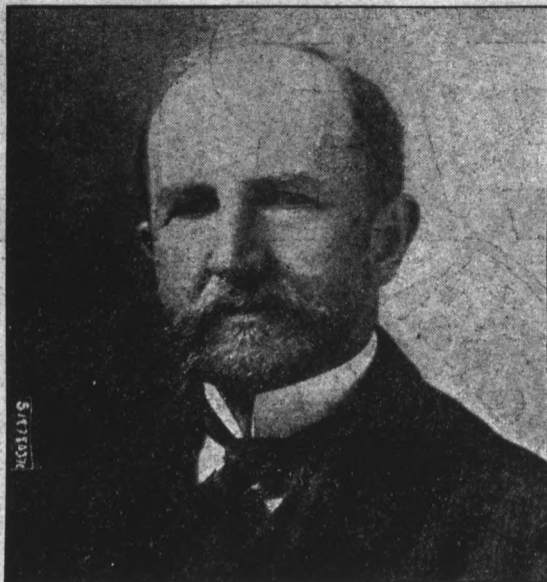
DETROIT THE HEART OF THE AUTO INDUSTRY



WORLD EVENTS IN PICTURES



One of the Women Delegates Elected to the German Assembly at Weimar.



Frederick H. Gillett, to Succeed Champ Clark as Speaker of the House of Representatives.



Col. Fred'k Wise, Heroic Commander of the Marines, who made History at Chateau Thierry.



Group of Allied Women in Paris to Discuss International Suffrage, and Report upon Conditions Concerning Welfare of Women and Children.



President Wilson and Mrs. Wilson Coming Ashore from the Boat which met the S. S. George Washington in the Boston Harbor.



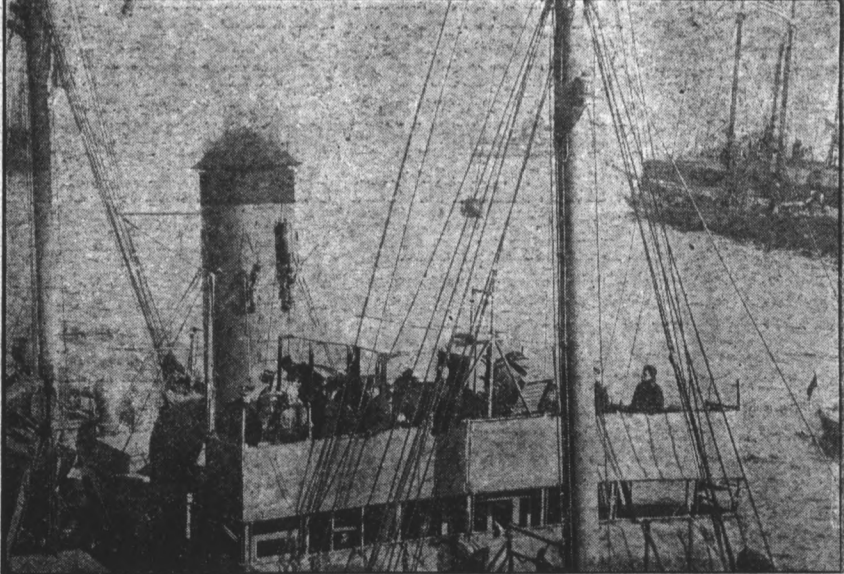
An Unusual Photograph of the Commission on the League of Nations Assembled at the Hotel Orillon, Paris.



The Funeral Procession of Sir Wilfred Laurier, Former Premier of Canada, Passing the Parliament Buildings at Ottawa.



General Pershing Decorating Lieut. Woodfil, of New York, who Killed Fifteen Germans, with a Pickaxe as his only Weapon.



President Wilson Arriving on the Transport George Washington, Doffs his Hat to the Cheering Crowds who come out to meet him.

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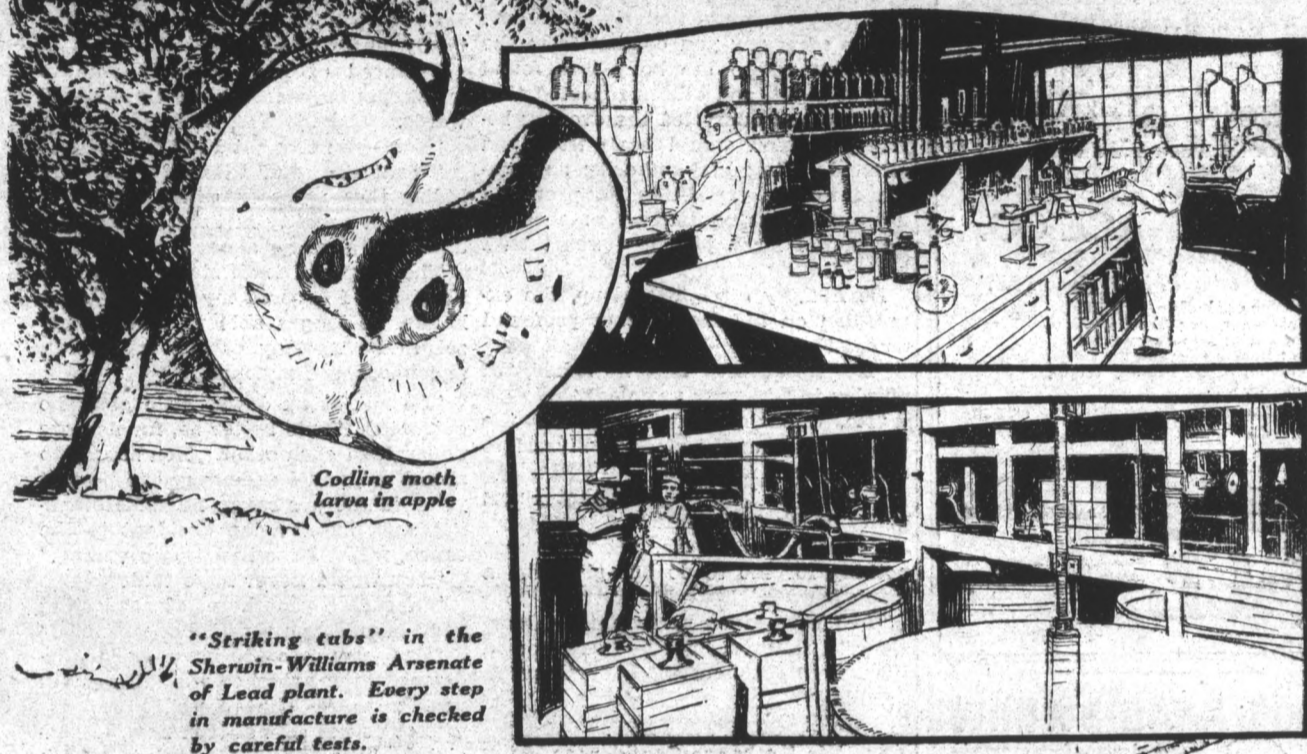
This responsibility is as broad as the Sherwin-Williams line. Whether the product is paint for your buildings and implements, disinfectants for your cow barns and chicken houses, dips for your cattle or spraying material to protect your fruit and vegetables from the ravages of insects, this mark on the package is your safe-guard in buying all

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THIS is the estimated loss through neglect of spraying or the use of improper spraying material. A part of this vast sum is your personal loss as well as a loss to the country.

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You cannot tell good Insecticides from bad by looking at them. You have no ready means of testing them in advance so be sure of the maker. Use products of known value, identified by a trademark, known all over the world and vouched for by a house of unquestioned value.

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DRY LIME SULFUR. The only Lime Sulfur in dry powdered form on the market. Has all the advantages of Lime Sulfur Solution but eliminates its disadvantages.

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The operation of the Mueller and its superior features are interestingly explained in the booklet "The Modern Method of Heating Your Home," which we'll gladly send you free upon request. Write today for this book and the name of your nearest Mueller dealer.



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Seed \$3.00 per Bu. lower when we bought our supply. Our prices ridiculously low. The big saving to you is due to our early purchase. Every lot tested, pure Illinois grown, High grade Buckhorn free. Guaranteed satisfactory or money refunded. Crop short. Don't wait for higher prices. Our big bargains in seed will astonish you. Have Alfalfa \$2.90 per Bu; Timothy \$4.75; Sweet Clover \$3.25 and all Grass Seed at greatly reduced prices. We can save you money and give you quick Service. Write today for free samples, low prices and big money saving Seed Guide. All Free. Don't delay. American Mutual Seed Co., Dept. 431 Chicago

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Buy now while we can save you money. Wonderful values in Best Seed. Guaranteed Pure Iowa Grown—re-cleaned and tested—Buckhorn free. Also Timothy, Sweet Clover, Alfalfa, all farm seeds at wholesale prices saving big money. Write today. Don't buy until you get our 20 used prices, samples and 116-page catalog. A. A. BERRY SEED CO., Box 131 CLARINDA, IOWA

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Seed Corn 5,000 Bushels

Extra selected, sure to yield. Highest yielders. Best show corn. Also seed oats, barley, alfalfa, spring wheat, 1200 acres. Sample on request. Write today for catalog. W. N. SCARFF & SONS, New Carlisle, Ohio

Complete assortment of hardy Northern Berry Plants, Garden Seeds and Roots. Strictly first-class. True to name. Prices reasonable. Catalogue sent FREE. A. R. WESTON & CO., Bridgman, Mich.

Rider Agents Wanted

Boys and young men everywhere are making good money taking orders for "Ranger" bicycles and bicycle tires and sundries. You are privileged to select the particular style of Ranger bicycle you prefer: Motorbike model, "Arch", "Frame", "Superb", "Scout", "Special", "Racer", etc. While you ride and enjoy it in your spare time hours—afternoons, after school, evenings and holidays—your admiring friends can be easily induced to place their orders through you. Every Ranger sold takes with it our 5-year guarantee and the famous 30-Day Trial agreement. Factory-to-Rider. Every purchaser of a Ranger Bicycle (on our factory-direct-to-the-rider sales plan) gets a high-grade fully guaranteed model direct from the factory at wholesale prices, and is privileged to ride it for 30 days before final acceptance. If not satisfied it may be returned at our expense and no charge is made for the use of machine during trial. Delivered to You Free. We prepare the delivery charges on every Ranger from our factory in Chicago to your town. If you want to be a Rider Agent or if you want a good bicycle at a low price, write us today for the big free Ranger Catalog, wholesale prices, terms and full particulars.

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An entirely new and practical work on Silos, their construction and the process of filling. Complete and reliable information regarding Silage and its composition. Special chapters on Feeding of Silage and profitable rationing. 264 Pages, 74 Illustrations. An authoritative Feeder's and Dairymen's guide. Used in many State Agricultural Colleges as a Standard Text Book. Price 25c, coin or stamps. Write for copy. Also ask for 4-color folder on Silver's Ohio Silo Fillers. Mailed Free. The Silver Mfg. Co., 390 Broadway, Salem, Ohio

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"Beyond the Frontier"

"You have guarded me?"
"As best I could, without arousing the wrath of Monsieur Cassion. You are not angry? It was but the duty of a friend."

"No, I am not angry, Monsieur, yet it was not needed. I do not fear Cassion, so long as I can protect myself, for if he attempts evil it will find some form of treachery. But, Monsieur, later I gave him the pledge he asked."

"The pledge! What pledge?"
"That I would neither meet, nor communicate with you until our arrival at Fort St. Louis."

My eyes fell before his earnest gaze, and I felt my limbs tremble.

"Mon Dieu! Why? There was some special cause?"

"Yes, Monsieur—listen. Do not believe this is my thought, yet I must tell you the truth. Hugo Chevet was found dead, murdered, at St. Ignace. 'Twas the morning of our departure, and your boat had already gone. Cassion accused you of the crime, as some of the men saw you coming from the direction where the body was found late at night, and others reported that you two had quarreled the evening before. Cassion would have tried you offhand, using his authority as commander of the expedition, but promised not to file charges until we reached St. Louis, if I made pledge—'twas then I gave him my word."

De Artigny straightened up, the expression on his face one of profound astonishment.

"He—he accused me," he asked, "of murder to win your promise?"

"No, Monsieur; he believed the charge true, and I pledged myself to assure you a fair trial."

"Then you believed also that I was guilty of the foul crime?"

I caught my breath, yet there was nothing for me to do but give him a frank answer.

"I—I have given no testimony, Monsieur," I faltered, "but I—I saw you in the moonlight bending over Chevet's dead body."

CHAPTER XIX.

We Exchange Confidences.

MY eyes fell before his; I could not look into his face, yet I had a sense that he was actually glad to hear my words. There was no anger, rather happiness and relief in the gray eyes.

"And you actually believed I struck the blow? You thought me capable of driving a knife into the man's back to gain revenge?"

"Monsieur, what could I think?" I urged eagerly. "It did not seem possible, yet I saw you with my own eyes. You knew of the murder, but you made no report, raised no alarm, and in the morning your boat was gone before the body was found by others."

"True, yet there was a reason which I can confess to you. You also discovered the body that night, yet aroused no alarm. I saw you. Why did you remain silent? Was it to protect me from suspicion?"

I bent my head, but failed to find words with which to answer. De Artigny scarcely permitted me time.

"That is the truth; your silence tells me it was for my sake you remained still. Is it not possible, Adele, that my purpose was the same? Listen to me, my girl, and have faith in my words—I am not guilty of Hugo Chevet's death. I did not like the man, it is true, and we exchanged words in anger while loading the boats, but I never gave the matter second thought. That was not the first night of this journey that I sought to assure myself of your safety."

"I know Monsieur Cassion, and of what he is capable, and felt that some time there would occur between you a struggle—so at every camping place, where it was possible, I have watched. It was for that purpose I approached the Mission House. I gained glimpse

within, and saw Cassion asleep on a bench, and knew you had retired to the chamber above. I was satisfied, and started to return to the camp. On my way back I found Chevet's body at the edge of the wood. I discovered how he had been killed—a knife thrust in the back."

"But you made no report; raised no alarm."

"I was confused, unable to decide what was best for me to do. I had no business being there. My first impulse was to arouse the Mission House; my second to return to camp, and tell the men there. With this last purpose in view I entered the wood to descend the hill, but had hardly done so when I caught sight of you in the moonlight, and remained there hidden, watching your movements with horror. I saw you go straight to the body, assure yourself the man was dead; then return to the Mission House, and enter your room by way of the kitchen roof. Do you realize what your actions naturally meant to me?"

I stared at him, scarcely able to speak, yet in some way my lips formed words.

"You—you thought I did it?"

"What else could I think?—You were hiding there; you examined the body; you crept secretly in through the window, and gave no alarm."

The horror of it all struck me like a blow, and I covered my eyes with my hands, no longer able to restrain my sobs. De Artigny caught my hands, and uncovered my face.

"Do not break down, little girl," he entreated. "It is better so, for now we understand each other. You sought to shield me, and I endeavored to protect you. 'Twas a strange misunderstanding, and, but for the accident to the canoe, might have had tragic ending."

"You would never have told?"

"Of seeing you there, of suspecting you? Could you think that possible?"

"But you would have been condemned; the evidence was all against you."

"Let us not talk of that now," he insisted. "We have come back to a faith in each other. You believe my word?"

"Yes."

"And I yours."

His hand clasp tightened, and there was that in his eyes which frightened me.

"No, no, Monsieur," I exclaimed, and drew back quickly. "Do not say more, for I am here with you alone, and there will be trouble enough when Cassion returns."

"Do I not know that," he said, yet releasing my hands. "Still it can surely do no harm for us to understand each other. You care nothing for Cassion; you dislike, despise the man, and there is naught sacred in your marriage. We are in the wilderness, not Quebec, and La Barre has little authority here. You have protected me with your silence—was it not because you cared for me?"

"Yes, Monsieur; you have been my friend."

"Your friend—Is that all?"

"Is that not enough, Monsieur? I like you well; I would save you from injustice. You could not respect me if I said more, for I am Monsieur Cassion's wife by rite of Holy Church. I do not fear him—he is a coward; but I fear dishonor, Monsieur, for I am Adele la Chesnayne. I would respect myself, and you."

The light of conquest vanished from the gray eyes. For a moment he stood silent and motionless; then he drew a step backward, and bowed.

"Your rebuke is just, Madame," he said soberly. "We of the frontier grow careless in a land where might is right, and I have had small training save in camp and field. I crave your pardon for my offense."

So contrite was his expression I had

to smile, realizing for the first time the depth of his interest in my good will, yet the feeling which swayed me was not altogether that of pleasure. He was not one to yield so quietly, or to long restrain the words burning his tongue, yet I surrendered to my first impulse, and extended my hand.

"There is nothing to pardon, Sieur de Artigny," I said frankly. "There is no one to whom I owe more of courtesy than you. I trust you fully, and believe your word, and in return I ask the same faith. Under the conditions confronting us we must aid each other. We have both made mistakes in thus endeavoring to shield one another from suspicion, and, as a result, are both equally in peril. Our being alone together here will enrage Monsieur Cassion, and he will use all his power for revenge. My testimony will only make your case more desperate should I confess what I know, and you might cast suspicion on me."

"You do not believe I would?"

"No, I do not, and yet, perchance, it might be better for us both if I made full confession. I hesitate merely because Cassion would doubt my word; would conclude that I merely sought to protect you. Before others—fair-minded judges at St. Louis—I should have no hesitancy in telling the whole story, for there is nothing I did of which I am ashamed, but here, where Cassion has full authority, such a confession would mean your death."

"He would not dare; I am an officer of the Sieur de la Salle."

"The more reason why he would. I know Monsieur Cassion even better than you do. He has conversed with me pretty freely in the boat, and made clear his hatred of La Salle, and his desire to do him evil. No fear of your chief will ever deter him, for he believes La Barre has sufficient power now in this country to compel obedience. I overheard the Governor's orders to keep you under close surveillance, and Cassion will jump at the chance of finding you guilty of crime. Now my broken pledge gives him ample excuse."

"But it was not broken except through necessity," he urged. "He surely cannot blame you because I saved your life."

"I doubt if that has the slightest weight. All he will care about is our being here alone together. That fact will obscure all else in his mind."

"He believes then that you feel interest in me?"

"I have never denied it; the fact which rankles, however, is his knowledge that I feel no interest whatever in him. But we waste time, Monsieur, in fruitless discussion. Our only course is a discovery of Hugo Chevet's real murderer. Know you anything to warrant suspicion?"

De Artigny did not answer at once, his eyes looking out on the white crested waters of the lake.

"No, Madame," he said at length gravely. "The last time Chevet was seen alive, so far as I now know, was when he left the boats in company with Monsieur Cassion to return to the Mission House."

"At dusk?"

"It was already quite dark."

"They did not arrive together, and Cassion reported that Chevet had remained at the beach in charge of the canoes."

"You saw Cassion when he arrived?"

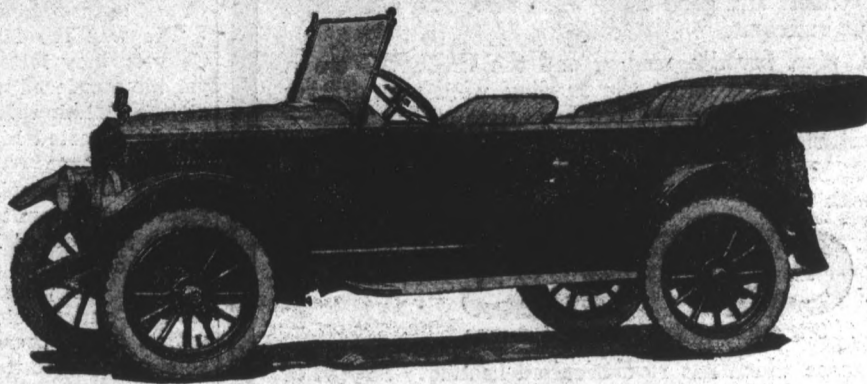
"Yes, and before; I was at the window, and watched him approach across the open space. He was alone, and appeared at ease."

"What did he do, and say, after he entered the house?"

"Absolutely nothing to attract notice; he seemed very weary, and, as soon as he had eaten, lay down on the bench, and fell asleep."

"Are you sure he slept?"

"I felt no doubt; there was nothing strange about his actions, but as soon



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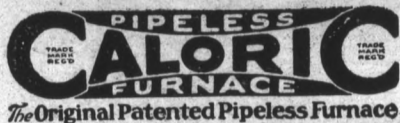
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"Beyond the Frontier"

as possible I left the room. You surely do not suspect him?"

"He was the last to be seen with Chevet; they left the beach together, yet the murdered man failed to appear at the Mission House, and Cassion falsely reported him left in charge at the beach."

"But no one could act so indifferent, after just committing such a crime. When you looked in through the window what did you see?"

"Only the priests about the table talking, and Cassion seemingly sound asleep. Could there be any reason why he should desire the death of Chevet?"

"I know of none. My uncle felt bitter over the concealment of my fortune, and no doubt the two had exchanged words, but there was no open quarrel. Chevet was rough and headstrong, yet he was not killed in fight, for the knife thrust was from behind."

"Ay, a coward's blow. Chevet possessed no papers of value."

I shook my head.

"If so, no mention was ever made to me. But, Monsieur, you are still wet, and must be cold in this wind. Why do you not build the fire, and dry your clothing?"

"The wind does have an icy feel," he admitted, "but this is a poor spot. Up yonder in the wood shadow there is more warmth, and besides it affords a better outlook for the canoes. Have you strength now to climb the bluff?"

"The path did not appear difficult, and it is dreary enough here. I will try it."

I did not even require his aid and was at the top nearly as soon as he. It was a pleasant spot, a heavy forest growing almost to the edge, but with green carpet of grass on which one could rest, and gaze off across the wide waste of waters. Yet there was little to attract the eyes except the ceaseless roll of the waves, and the curve of the coast line, against which the breakers still thundered, casting high in the air their white spray. It was a wild, desolate scene, a wilderness wherever the eyes turned.

I stood silent, gazing to the southward, but there were no canoes visible although the storm had ceased, and the waves were no longer high enough to prevent their return. They must have been driven below the distant point, and possibly so injured as to make repairs necessary. When I finally turned away I found that De Artigny had already lighted a fire with flint and steel in a little hollow within the forest. He called to me to join him.

"There is nothing to see," he said, "and the warmth is welcome. You had no glimpse of the boats?"

"No," I admitted. "Do you really believe they survived?"

"There was no reason why they should not, if properly handled. I have controlled canoes in far worse storms. They are doubtless safely ashore beyond the point yonder."

"And will return seeking us?"

"Seeking you, at least. Cassion will learn what occurred, and certainly will never depart without seeking to discover if you are alive. The thought that you may be with me will only serve to spur him to quicker action. My fear is he may be delayed by some accident, and we might suffer from a lack of food."

"I had not thought how helpless we were."

"Oh, we are not desperate," and he laughed, getting up from his knees. "You forget I am bred to this life, and have been alone in the wilderness without arms before. The woods are full of game, and it is not difficult to construct traps, and the waters are filled with fish which I will devise some means of catching. You are not afraid to be left alone?"

"No," in surprise. "Where are you going?"

"To learn more of our surroundings, and arrange some traps for wild game."

I will not be away long, but someone should remain here to signal any canoe returning in search.

I watched him disappear among the trees, without regret, or slightest sense of fear at thus being left alone. The fire burned brightly, and I rested where the grateful warmth put new life into my body. The silence was profound, depressing, and a sense of intense loneliness stole over me. I felt a desire to get away from the gloom of the woods and climbed the bank to where I could look out once more across the waters.

CHAPTER XX.

I Choose My Duty.

THE view outspread before me revealed nothing new; the same dread waste of water extended to the horizon, while down the shore no movement was visible. As I rested there, oppressed by the loneliness, I felt little hope that the others of our party had escaped without disaster.

De Artigny's words of cheer had been spoken merely to encourage me, to make me less despondent. Deep down in his heart the man doubted the possibility of those frail canoes withstanding the violence of the storm. It was this thought which had made him so anxious to secure food, for, if the others survived and would return seeking us, as he asserted, surely they would appear before nightfall, and there would be no necessity for our snaring wild game in order to preserve life.

De Artigny did not believe his own words; I even suspected that he had gone now alone to explore the shoreline; seeking to discover the truth, and the real fate of our companions. At first this conception of our situation startled me, and yet, strange as it may seem, my realization brought no deep regret. I was conscious of a feeling of freedom, of liberty, such as had not been mine since we departed from Quebec. I was no longer watched, spied upon, my every movement ordered, my speech criticized. More, I was delivered from the hated presence of Cassion, ever reminding me that I was his wife, and continually threatening to exercise his authority. Ay, and I was with De Artigny, alone with him, and the joy of this was so deep that I came to a sudden realization of the truth—I loved him.

In a way I must have known this before, yet, not until that moment, did the fact dawn upon me in full acknowledgement. I sank my head on my hands, my breath quickened by surprise, by shame, and felt my cheeks burn. I loved him, and believed he loved me. I knew then that all the happiness of life centered in this one fact; while between us arose the shadow of Cassion, my husband. True I loved him not; true I was to him wife only in name; true our marriage was a thing of shame, yet no less a fact, no less a barrier. I was a La Chesnayne to whom honor was a religion; a Catholic bowing humbly to the vow of Holy Church; a Frenchwoman taught that marriage was a sacred rite.

The knowledge of my love for De Artigny brought me more fear than pleasure. I dare not dream, nor hope; must escape his presence while I retained moral strength to resist temptation. I got to my feet, not knowing what I could do, yet with a wild conception of returning to the beach, and seeking to find a passage to the southward. I would go now along the shore, before De Artigny came back, and meet those returning canoes. In such action lay my only safety—he would find me gone, would trace me along the sand, yet before I could be caught, I would have met the others, and thus escape the peril of being alone with him again.

Even as I reached this decision,

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Something arose in my throat and choked me, for my eyes saw just outside the curve of the shore-line, a canoe emerge from the shadows of the bluff. I cannot picture the reaction, the sudden shrinking fear which, in that instant, mastered me. They were coming seeking me; coming to drag me back into slavery; coming to denounce De Artigny of crime, and demand his life.

I know not which thought dominated me—my own case, or his; but I realized instantly what course Cassion would pursue. His hatred of De Artigny would be fanned into flame by discovery that we were alone together. He possessed the power, the authority to put this man forever out of his way. To save him there remained but one possible plan—he must reach Fort St. Louis, and friends before Cassion could bring him to trial. It was in my power to permit his escape from discovery, mine alone. If I did otherwise I should be his murderer.

I sank down out of sight, yet my decision was made in an instant. It did not seem to me then as though any other course could be taken. That De Artigny was innocent I had no doubt. I loved him, this I no longer denied to myself; and I could not possibly betray the man to the mad vengeance of Cassion. I peered forth, across the ridge of earth concealing me from observation, at the distant canoe. It was too far away for me to be certain of its occupants, yet I assured myself that Indians were at the paddles, while three others, whose dress designated them as whites, occupied places in the boat. The craft kept close to the shore, evidently searching for any sign of the lost canoe, and the man in the stern stood up, pointing, and evidently giving orders. There was that about the fellow's movements to convince me he must be Cassion, and the very sight of him strengthened my resolve.

(Continued next week).

"By the Way"

ABOUT TIME.

"It says here that a Lansing man boasts that he has had an umbrella that has been in his possession for twenty years," said Smith.

"Well," replied Jones, "that's long enough. He ought to return it."

SLEEPS WELL.

"I see you have a new hired man, Ezry. How is he doing?"

"Resting considerable easier than the other one did, thank you," replied Farmer Hornbeak grimly.

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"Not exactly, but she put him in Class 5, only to be used as a last resort."

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"Hello!" answered the girl, flushed with pride at being able to give the proper answer.

"Who is this?" continued the voice.

"I don't know!" exclaimed the maid.

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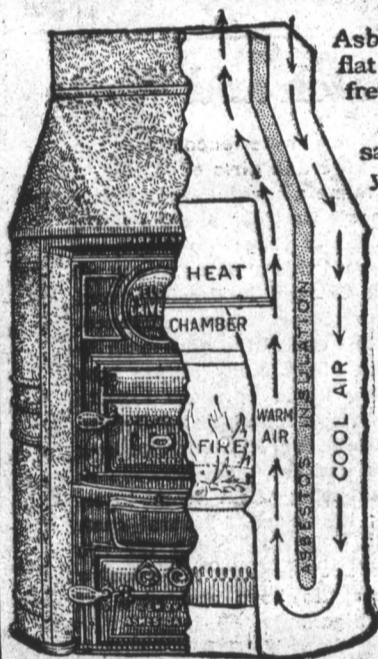
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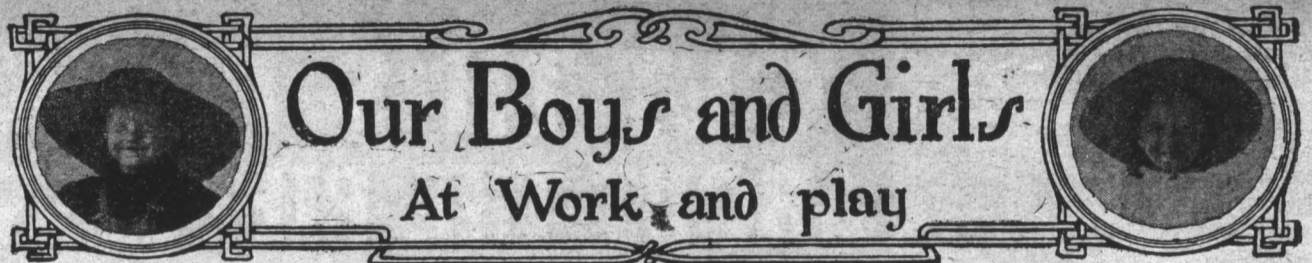
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Fighting Enemies of Farm Crops

Boys and Girls Can Render Valuable Assistance in Helping to Control Insects that Prey Upon Garden and Field Plants.—Don Whelan

THE farm garden is the feeding-ground of a large variety of insects, each devouring its favorite food. Some insects feed upon a single plant and will partake of no other while other varieties of these six-legged pests will feed on several different plants. And there are others that will eat almost everything in sight from the radishes or cabbages to the fence posts along the road. For the convenience of the reader some of the common garden plants are given below, with descriptions of the insects liable to devour them, together with means of controlling them.

Asparagus.

Common Asparagus Beetle.—Small orange and black beetle feeding on the young tips; later on stems. Young grubs are dark grey and also feed on stems. Control: Prompt cutting of the young shoots in spring. Hand-picking can be resorted to in small beds.

Spotted Asparagus Beetle.—Orange with black spots. Habits much the same as the above, and control measures suitable for both.

Beans.

Bean Weevil.—Small grey robust beetle, one-eighth of an inch long, that eats into seed beans. Control: Plant clean seed. After harvesting in fall place beans in a shallow open dish and heat for a few hours at about 120 degrees F. This will not injure the seed and will kill both the insects and their eggs. Larger quantities of beans can be treated with carbon bisulphide.

Bean Maggot.—This is the immature form of a small fly. Not bad in small gardens. Control: Use plenty of fertilizer and don't plant beans too deep.

Cutworms.—There are many varieties of these caterpillars or "worms" that prowl around at night and cut off the plant at the surface of the ground. Control: Cans or jars set over the young plants at night help in a small garden but are not practical in a larger one. The use of poison bran-mash applied near the infested area will attract and kill many of them. They are usually found hiding, by day, near the plant they have cut off the night before.

Beets.

Blister Beetles.—Long slender, black beetles that eat leaves. Can be controlled by hand-picking in cans of kerosene. Poison will hurt the tops for use as greens.

Leaf-beetles.—Small beetles and their grubs are often found feeding upon the leaves. Control: Where numerous the tops will have to be sprayed with arsenate of lead, or arsenate of calcium.

Leaf-caterpillar.—Many of these eat the leaves in much the same manner as the leaf-beetles and they are controlled by the same methods.

Tarnished Plant-bug.—This is an active little creature that sucks its food and works on many of the garden plants. It is so active that spraying is of little benefit but the cleaning up of rubbish seems to be the best manner of control.

Cabbage.

From the time it is set out in the spring until it is harvested in the fall the cabbage plant is attacked by many different insects among which are the following:

Cutworm.—See discussion and control under beans.

Root-maggot.—This is one of the first insects to attack the cabbage plant. The adult fly lays its eggs on stem near the surface of the ground and the hatching maggot tunnels into the stem, causing the plant to turn a sickly color which soon wilts and dies. Egg-laying is usually during the latter part of April or early in May. Control: When plants are set out disks of tar felt paper should be put around them. They should be so placed that the plant will be in the middle of the disk while the latter is flush with the ground.

Cabbage Worms.—A velvety green caterpillar with a white line running the length of its back. The immature stage of the white butterfly seen early

Watch and Write

IN order to encourage the boys and girls of Michigan to make a careful study of the insects that damage the farm, fruit and vegetable crops, we present this article. We want you to read it carefully and save it for future reference. At the end of the season write us a short story telling how many kinds of these insects you have found, at what date you discovered them, and how you had the most success in preventing them from injuring the crops. Liberal cash prizes will be given for the ten best reports we receive from the boys and girls of Michigan.

THE EDITORS.

in the spring. These worms eat the leaves and holes into the forming heads. They are present about all summer unless kept under control. Control: Spray with arsenate of lead when the plants are young but be sure to add quite a little soap to the spray, otherwise it will not stick to the smooth cabbage leaves. If one is afraid of using such a poison on cabbages they can use an ounce of pyrethrum in two gallons of water. This will make a spray that will kill the insects and it is not injurious to man. Care should be taken to use strictly fresh pyrethrum.

Cabbage-looper.—This is a mottled cabbage worm that crawls by looping the center of its body, a measuring-worm. Control measures are the same as for the cabbage worm.

Cabbage Aphis.—These are greyish-green insects that procure their food by sucking the juices from the inside of the leaves. They reproduce very rapidly and should be controlled early before they get too numerous and before the leaves become too badly curled. Control: A spray of nicotine sulphate with a little soap added will kill every insect that is hit. Cleaning up and destroying the old cabbage stumps after the harvest is gathered in the fall will remove a favorite hibernating place for this pest.

Carrot.

Carrot (or Celery) Caterpillar.—This is a bright yellow caterpillar with many black bands across it. It feeds upon the foliage. Control: It is so easily seen that hand-picking is the best way of despatching them.

Cauliflower.

The same insects that attack cabbage may be found here.

Corn.

Cutworms.—Look under beans for description and control.

Corn Ear-worm.—These large caterpillars are worst on sweet corn where they get into the ears and eat the kernels. The adult moth lays her eggs upon the silk. Control: Dust the young silks with a mixture composed of arsenate of lead and sulphur, equal parts.

Stalk Borer.—These insects work on the inside of the cornstalk and so poisoning them is useless. Control: Crop rotation and clean culture is the best methods of keeping this pest under control.

Corn Root-aphis.—These tiny plant lice congregate on the roots of corn and suck out the juice, causing plant to become greatly stunted. Ants carry them to the corn in the spring and down into the ground in the fall. Control: If the nests of these corn field ants are broken up and the weeds in and near the field are kept down, this pest can be kept from doing as much damage as it has done in past years.

Wireworms.—This is a yellowish colored worm with a hard skin and works beneath the surface of the ground. It is worst in low, poorly drained soil or in ground where grass is abundant. Control: Rotation of crops and proper drainage where necessary will, as a rule, keep them down.

Cucumbers.

Striped Cucumber Beetle.—Small beetle with yellow and black stripes running back from the head. The beetles eat holes in the leaves and the immature form, which is worm-like, works in the stem or underground root, causing the plant to have an unhealthy appearance. Control: Wire or cloth protectors help to keep the beetles off. A dust composed of one part of hydrated lime and four parts of sulphur has proved efficient against these pests. Bordeaux mixture and arsenate of lead has also been recommended.

Melon Aphis.—This is a dark green plant louse usually found on the under sides of the leaves. It also is found attacking melons, squash and pumpkins. Control: The use of nicotine sulphate in water with the addition of soap will kill every insect that it hits.

Squash Vine-borer.—This caterpillar tunnels in the stems of squash and pumpkins as well as that of cucumber. The infested vines wilt. Control: The early destruction of the vines as soon as the crop is harvested will greatly lessen the chances for injury from this insect another year. As the worm passes the winter in the ground near the plant, fall plowing of the ground or a rotation of crops would help to lessen the damage.

Melons.

Melons are attacked by the same insects that injure cucumbers.

Onions.

Onion Maggots.—These maggots are the immature form of small flies. They

hatch from tiny eggs laid on the plant and burrow into the tissue of the bulb causing it to wilt and decay. Control: Controlling these maggots after they are in the onions is a hard matter, the best way is to prevent them from entering the plant. This is accomplished by means of a poisoned syrup. The adult flies are very fond of sweet material so some molasses into which a little arsenite of soda has been added, is placed in pans and these placed on the ground where the onions have been set out. The flies eat the sweet material and are killed. Screens large enough to admit the small flies, and yet large enough to exclude the honey bees should be placed over the pans of poison. Carbolic acid emulsion has proved to be of benefit as a repellent.

Onion Thrips.—This is about the smallest of the garden crop insects and when large numbers get together they can do a lot of damage. They feed by scraping small particles of the plant tissue but as far as their control is concerned they can be classed with sucking insects. They are worst during dry seasons. Control: They are usually not very bad but when numerous a spray of nicotine soap will probably end their labors.

Peas.

Pea Weevil.—This weevil is similar to the bean-weevil only it is somewhat larger than the latter. It develops in the green peas from eggs laid in pods. Control: Control measures given for the bean-weevil will apply here.

Pea Aphis.—This small green plant louse feeds on many weeds as well as the pea. It attacks the stems. Control: If peas are planted in rows wide enough apart, they can be sprayed with nicotine sulphate and soap. And the younger the plants the easier it is to kill the aphis for they must be hit with the spray in order to kill them.

Potatoes.

Potato Beetle.—This small oval buff-colored black striped beetle is probably found in every garden in the state where potatoes are grown. The grubs are fat reddish insects with black markings along their sides. All feed upon the leaves to satisfy their enormous appetites. Control: Spray with some good arsenical. This can be added to the Bordeaux mixture if necessary.

Potato Aphis.—For a few years the pink and green potato aphis has been quite numerous in the state. They suck out the plant juices and give the plant a wilted or blighted appearance. Control: A nicotine spray, one pint in a hundred gallons of water to which about four pounds of soap has been added, will kill them if properly applied. It must hit the insects on the under sides of the leaves.

Flea-beetles.—When the plants are young these insects eat small round holes in the leaves, sometimes riddling them. The tiny beetle is black in color and about one-tenth of an inch long. Control: Potato plants that are regularly sprayed with Bordeaux mixture to which two or three pounds of arsenate of lead paste, or half as much of the powdered form, will not be troubled with this insect.

Stalk Borer.—This striped worm often bores in the stem of the potato or tomato, causing it to wilt. The wilted stems and leaves are the first indication of this insect's presence. Control: If the wilted stems are cut off and the insect inside crushed it can readily be kept under control.

Wireworms.—Look under the head of corn for description and control.

Pumpkins.

The same insects that infest the cucumbers and the squash may be found on the pumpkin vines.

Radishes.

Maggots.—Small dirty white maggots burrowing into the roots of the radish make them unsalable and uneatable. Like the maggot of onion these insects hatch from eggs laid by a small fly. Control: Inasmuch as radishes

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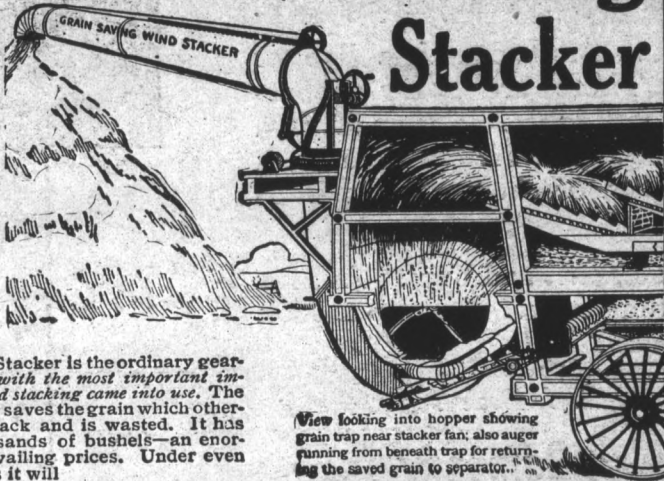
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grow so quickly the best way is to pull any infested radishes and destroy them. Fertilizer planted with the seed will cause them to grow more quickly and will overcome the work of the maggot.

Rhubarb.

Snout Beetle.—This large snout beetle eats irregular holes in the stems of the plant. This beetle can usually be found at work if the leaves are carefully pushed aside so as to expose the stems. They can be picked off by hand and destroyed.

Squash.

Squash Bug.—These large dark colored sucking insects seem to be immune to most sprays. A spray that is strong enough to kill these pests would most certainly kill the vines. On cool nights these bugs hide under some nearby object, so if pieces of board are placed on the ground and examined each morning some of these insects will probably be found there where they can readily be killed. Cleaning up the vines from the garden after the squash are harvested will deprive the overwintering bugs of a favorite hibernation place. It has been claimed that Bordeaux mixture sprayed on the plants serves as a repellent.

Striped Cucumber Beetle.—Discussed under cucumbers.

Melon Aphid.—Discussed under cucumbers.

Squash Vine-borer.—Discussed under cucumbers.

Tomatoes.

Cutworms.—These worms often cut off the newly set plants, eating them off at the surface of the ground. Control: When the plants are set out place a paper collar around them. This collar should be of some stiff material and when in place should extend an inch or so below the surface of the ground and three inches above.

Tomato Worm.—This large naked green caterpillar sometimes grows to be three inches in length. It eats the leaves and because it is similar to them in color, it is hard to detect. Control: Hand-picking is the easiest way of disposing of them, although an arsenical spray will help to destroy them.

Stalk Borer.—This insect is the same one that works in the stems of potatoes and is discussed there.

Flea Beetle.—This is the same one that eats holes in the leaves of potatoes and is controlled in the same manner.

Sheep vs. Dogs

By John E. Bell

I HAVE kept a flock of from thirty-five to forty-five good ewes, continuously for thirty years. I persisted in keeping these sheep, first, because we had quite a range of newly cut-over land, or hilly, stony land, that was not suited to other uses, and sheep would come as near being profitable on this land as anything. And, second, because I loved sheep, and I was a good shepherd to my sheep, and had minimum losses, and after the first five years of learning to care for them, for twenty-five years following, I raised each year an average of sixty lambs for each forty ewes. But I had my full share of losses from dogs. I have gone out and found my sheep in such condition that it made a real tragedy in my life. I have been a sheep owner for twenty years, and I have watched, and hunted, and killed a good many dogs, and most of these dogs were town dogs.

I know dogs is the reason most frequently given by farmers for not keeping sheep, but it is a handy, and not a studied reason. For the destructive ravages of dogs has not been the worst tragedy against the sheep industry. No, it was the mean, destructive low prices paid to the farmers for their endeavor to keep their sheep, that put the sheep out. For the thirty years preceding the

war the average price paid for the best Shropshire grade wool was a little under seventeen cents per pound. We have sold the finest clean fleeces direct to the woolen mills at Columbiaville at nine cents. For mutton the average price was about three cents for the best lambs. I sold as clean and handsome a flock of forty-six eighty-five-pound fat lambs as ever went over the scales, for \$1.60 per head. I have seen tender little lambs stand bleating beside their mother that had been killed by dogs, and I have seen mother ewes lay where they had cast themselves down and thrust their head under a root or fallen tree to protect their throats from the teeth of the dogs, but when I drove that flock of forty-six lambs away to be sold at one dollar and sixty cents per head, I felt a chagrin, a helplessness, an injustice, a guilt and shame that was a far worse tragedy than all the dogs had done. Now, let us look this square in the face and see what the facts are. I say that up to the beginning of the war, if a farmer had a dog that would chase a rabbit, kill the woodchucks and rats, bring the cows, and be a watch dog, he came nearer to being worth keeping than a flock of sheep. In the past it has required more sentiment to keep the sheep than the dog. A man had to get a great comfort out of his love, his sentiment for the sheep, to induce him to keep them, the price he received was not sufficient inducement, and we cannot live and pay expenses on sentiment. No dog law will be enforced, or be effective in vitalizing and building up the sheep industry until the prices paid for sheep make it profitable to keep them. When sheep become permanently profitable, farmers will soon find a way to destroy the dogs.

In a recent article in this journal the writer assumed that all the dogs are owned by the farmers, yet he charges the feed to keep them at retail prices, and estimates the yearly cost per dog at \$40. It might cost \$40 at the prices the city people charge themselves for food, but \$4.00 would be much nearer the price on the farm. And again he says, "Require the dog owners to be responsible for the whereabouts of his dog. Back this requirement up with public sentiment and officials with backbone, not gristle, and sheep will come to their own." What does he mean by "sheep will come to their own?" Don't worry, when sheep become more in demand, and are more valuable than dogs, the sentiment will change in favor of the sheep and be all right, when sheep come to their own.

May I suggest to the writer and the concern by whom he is employed, that they use their influence to establish a stable, reasonable price for sheep, in comparison to the prices in the organized industries, and get rid of the town dogs, and the idea that the farmers can afford to keep sheep purely for the love of the sheep. With the stimulant of just and reasonable prices conditions in the country would soon right themselves in favor of the sheep.

We can only judge the future by the past and we have one precedent that we may be sure will hold the same, by which we may judge the future. That precedent is human selfishness. And if the power to depress prices to the pre-war level is retained it will be exercised, and the farmer having no power to resist it, I see no encouragement to go into the sheep business merely on account of present prices.

Better watch carefully that the pup keeps its place and becomes master of the situation, even though you are compelled to defend its rights. After the proper relations are accepted on both sides, there will be little further trouble.



SHALL LAND OWNERS PAY ALL TAXES?

(Continued from page 412).
call their own; not in order to sell it but to forever hold.

The land speculator is the "dog in the manger." Always. Some of Detroit's expensive buildings are made by those who do not own the land on which they are built. The sites are leased for a term of years, and if every cent represented by such leases was taxed into the public treasury (they are land values) the improvements would still be made.

Enterprise and industry are not in harmony with speculation; certainly not with land speculation. The "profits" of business are not speculative, but payment for services rendered. Business is production, speculation never creates anything.

Reaching the commonwealth's agricultural community, as the Michigan Farmer does, it is not inappropriate in closing, to quote the opinion of a farmer on the single tax, in opposition to the conclusions of Mr. Rood, as an efficient and a just method of raising revenue for governmental purposes. Says C. B. Kellogg, master of the Washington State Grange: "After ten years of close study of the subject of taxation, as the responsible head of the Washington State Grange, I am positively convinced that the single tax plan of taxation is not only the best for the farmers, but the only one that will take the burden of taxation off the producers, and place it where it belongs, namely on the beneficiaries of special privileges."

Perhaps Mr. Rood's next article on the single tax will not be open to so many weaknesses in the matter of stating what the single tax is, how it will work, and whom it will favorably or disastrously affect.

HUNDRED SHEEP KILLED BY DOGS.

HEAVY losses to sheep from raids by dogs are continuing to occur in various sections of the state, the Michigan Agricultural College has become informed by reports from several counties. One of the most severe losses of those told of recently was the slaughtering of one hundred head of sheep in Nawaygo county by dogs that got in among a flock owned by the Fremont Canning Company.

Another report from Schoolcraft township in Kalamazoo county, declares that losses caused to farmers whose sheep were attacked by dogs, totaled more than \$2,500 last year.

These latest developments are said to be immensely strengthening the appeal of farmers for a law that will afford flocks greater protection. A bill materially increasing the dog tax, and extending the power of officers has already been introduced into the legislature and is receiving the united support of the fifty farmer members of the house and senate. Farmers are being asked to write to Charles Evans, chairman of the house committee on agriculture, at Lansing, urging that the bill be enacted into law.

WILL AID FARMERS TO MARKET PRODUCE.

AN additional field agent in marketing, whose business it will be to assist in the work of forming more cooperative associations among the farmers of the state, has been appointed by the Michigan Agricultural College. He is George C. Raviller.

The work will be a development of what has been in progress for some time. Last year, through the markets office of the college, cooperating with county agricultural agents, fifty-five marketing associations, eight live stock shipping associations and five milk producers' associations were organized in the various agricultural communities of the state.

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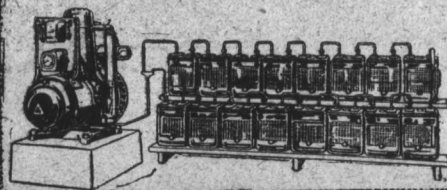


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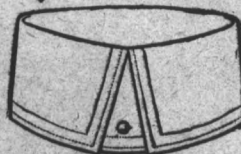
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Sunday as a Day of Rest

Is it true that "there is no rest for farm women on Sunday," as Elizabeth Sears declares in her article "Who Feeds the Nation" in Harper's Monthly? Or has Miss Sears in mind conditions as they existed up to the last two or three years?

It is quite certain that the men rest on Sunday—and eat—and the women who cook the big Sunday dinners do not get much rest until they learn how to take the "short cuts" that save unnecessary work in hot kitchens. One of the most important of these "short cuts" is the new method of dessert-making. In place of the heavy puddings and pies which have always accompanied the heavy Sunday dinners, fruity

JELL-O

desserts are served—desserts that are sparkling and beautiful and delicious beyond comparison.

These Jell-O desserts, which just fit the Sunday appetite are made by dissolving Jell-O in boiling water. It is done in a minute, and adds a good many minutes to woman's share of Sunday rest.

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WOMEN'S SECTION

Harmony vs. Discord in Furnishings

OF all the exhibits arranged by the home economics department for Farmers' Week at the Michigan Agricultural College, perhaps none attracted more attention than the two living-rooms designed to show good and bad in furnishings. Side by side, these two booths showed more plainly than words what good taste can accomplish. The same amount of money was spent in fitting up each room, but one was a quiet, restful, artistic, homey spot, while the other was a veritable chamber of horrors.

The accompanying illustrations give you some idea of bad taste versus good taste, but lack the element of color which goes so far in achieving desirable results. Dull finish and plain neutral tones as against shiny varnished surfaces, gaudy paper and glaring colors is strongly emphasized.

In room number one the woodwork is a dull waxed finish which will not show scratches readily and can be easily kept in condition by rubbing with oil. The walls are tinted a plain neutral watercolor, and the rug is a plain brown Wilton. In the other room, which truth to tell, is all too common, the woodwork is varnished, the walls papered with cheap, gaudy, flowered paper, and the rug is a green and red floral design. It, too, is a Wilton, and cost the same as the Wilton in the other room, \$50.

Lighting is next in importance to wall and floor tones if good results are to be obtained. In the first room indirect lighting is chosen, and the soft diffused light gives a restful effect. A plain reading lamp with simple lines and a shade the color of which blends with the color scheme of the room, furnishes a light for sewing and reading. In the second room a hideous electrolier with high-colored shades throws a glaring light over everything. The effect is hard, both on eyes and nerves.

In selecting furniture extremely bad taste is displayed in room number two.

ed for less than half the price of this one. Instead of holding books and a reading lamp the table is crowded with cheap bric-a-brac, which needs daily dusting, and a photograph which would be better put away out of the dust or in a bed-room. The cushions on the couch are too fine for daily use and show soil easily.

The first room has a comfortable,

room there are two high, narrow windows which give a poor light. Plain, white marquisette curtains with sun-fast drapes cover one set of windows, while the others have cheap lace curtains in an ugly design with heavy madras drapes, which will not wash and fade in the sun.

The rooms are well worth studying. Simplicity of design, quiet colors, and



No. 1.—Simplicity and Quiet Colors Make for Charm.

tapestry upholstered couch with washable covers on the cushions. The couch cost only \$10 more than the other one. Easy chairs, a couple of comfortable wicker rockers, a dull mahogany table of good design, a sewing table and a desk complete the furniture. Perhaps the most marked difference in the two rooms is the entire absence of reading matter from the second room. There is not a book, magazine, bookcase nor desk. The first room has built-in cases at either end of the fireplace, filled with books. The pictures in this room are few and well chosen, and dust catching bric-a-brac, with which the

comfortable furniture, with good lighting are the things to be aimed at when you furnish your home.

Michigan Women and the Ballot

By Jennie Bueh

IT was a man who asked the question, "What will Michigan women do with the ballot?"

But no mere man ventures a specific reply. The past contains abundant evidence of what some men feared women would do with their votes; else why the persistent opposition to woman suffrage on the part of the wets and exploiting interests? Michigan women might have voted seven years ago but for the after-election defeat by such fearsome forces. And the New Hampshire state senate has only recently executed perhaps the most barefaced backdown on the suffrage question ever exhibited, due it seems, to unscrupulous intervention of men outside that state who are determined, by foul means if not by fair, to delay as long as possible, submission of the Susan B. Anthony federal amendment.

But in Michigan we are happily past that stage of suffrage evolution. Our men have splendidly endorsed it for us; and, moreover, they have urged the obdurate United States Senate to submit the question to all the states.

What will we do with the Voting Power?

Without the gift of prophecy, let me hazard a few predictions. First, we may expect that we will do with the ballot very much as other women have done when they were enfranchised. Although there are a thousand differences between women, yet we are tremendously alike—whether we live in Colorado, California, Idaho, New York



No. 2.—Crude Colors and Clumsy Furniture Make this Room a Nightmare.

The pieces are all too large for the room and are clumsy and awkward in design. The couch and one or two chairs are covered with imitation leather which is hard, slippery, uncomfortable and will not wear well. The table is an ugly, golden oak and in an ugly design, easily marred and an eyesore to everyone. The scarf, which cost \$9.00, is embroidered in flashy jarring colors. A much more artistic one in neutral tones could have been purchas-

other room is crowded, is absent. There are one or two vases and bits of pottery, suitable for holding flowers and a growing plant. Note the absence of family portraits, which give the other room the air of a rogues' gallery.

The arrangement and treatment of the windows is a vital factor in the two rooms. Room number one shows the lighting all coming from several small windows in a row, while in the second



We may expect a very large number of Michigan women to prove themselves intelligent voters. Besides our schools, colleges and university, where girls have gone in ever-increasing proportion with boys, Michigan is rich in its number and grade of women's clubs and Michigan outranks all other states in the number of her local farm organizations, in all of which women take active part. A man of weight in state affairs, soon after election, remarked in my presence, "Where can you offset these women who attend women's study clubs once or twice every month with any similar groups of men? I tell you, it can't be done, and these women are going to be intelligent voters from the start."

We may certainly expect our women to go to the business of politics in a woman's way, taking special interest in details that make for health, recreation and practical efficiency in state and community affairs. On this point the observations of a busy young mother, who voted for the first time in New York state last fall, will apply. Immediately after election, she wrote:

"You will be interested to know that for one day I filled the place of a man and drew pay equal to the man I worked beside. Yes, from 5:30 in the morning until 11:00 at night I sat on the election board. Between you and me, when women enough get a hand in such things I feel sure the thing will be systematized so that it won't take until the wee small hours to get things straightened up. I was thoroughly exhausted for the next two days. Every corner was a temptation to drop down and go to sleep; but it was worth it from the point of experience."

Does the above not indicate that a woman will go about her new duties in her own way?

It is to be presumed that, in the main women will give particular heed to economy of public funds, since spending economically is a fine art with the average home-keeping woman. Personally, I cannot conceive of Michigan women—"mothers of men"—tolerating luxurious furnishing of state offices and the erection of ornate public buildings while appropriations for the state's orphans, poor, insane and unfortunate are pared to the barest necessities. Neither can I believe but that women will demand a more business-like use and accounting of state funds and time; and a less lavish use of traveling funds and other needless expenditures on the part of public officials. This is only one woman's guess and is founded partly on the fact that women are great financiers—in the sense that a woman, who provides for a family of five on a husband's salary of \$15, may be classed as a "financier." Another basis for my guess that women are going to lend a hand in jarring the foundations of state affairs, is the fact that Michigan women have come to their first vote at a time when people the world over are grasping the idea that government belongs to them; and that politics exist for service, not for profit.

The People's Hour Has Struck.

Michigan women are "in at the hearing" on practical democracy. Not so much because we are women, as because the times are ripe, we are, I hope going to join in asking why money can be obtained so easily for junkets and sporting projects, while pleas and prayers of producers and consumers go unheeded for better markets and cheaper food; why funds come so quickly for constabulary and military defense against protesting laboring men while scarcely a voice is raised for a real consideration of their grievances; why

the common people are taxed for waste paper baskets at the state capitol, at \$19 per, while the same "common" people are allowed to be exploited in northern Michigan at illegally high interest rates. These are a few of the questions that women from every rank of life are bound to concern themselves with in Michigan in the very near future.

Farm Women and the Ballot.

Farm women have some big political jobs ahead of them. But in the past two years Michigan farm women have demonstrated that they can handle big jobs. Women who pitched hay, drove binders, pulled beans, picked fruit and peddled milk as a patriotic "bit" in war times, aren't going to hesitate in any delicate fashion over their "bit" in peace times. If they act as patriotically in rebuilding as they did in "saving the world," we need not be concerned over the result. If, while they knitted and canned and sewed and served and saved, they refrained from rebuking their exploitation by the profiteers, they now no longer feel under bonds to keep silent. They have taken his measure and are preparing for his elimination.

It is easy to predict that at the coming spring election farm women will almost to the last woman, vote against the saloon amendment—known as the "light wine and beer amendment." They will very generally vote for L. Whitney Watkins and Mrs. Dora H. Stockman for members of the board of agriculture. And they will vote to build state warehouses and storage facilities for the use of producers and producers' organizations. All these are in direct line with their farm interests.

Not Party Partisans.

This much seems safe, also, to predict—our women are not going to care overmuch about parties. Partisan politics, thus far, do not seem to attract our women. They are meeting in groups and clubs to study methods of getting at measures and efficiency—cutting straight to the things that seem to them most vital to the well-being of the state and their own communities. Very many of us seem to be of the mind of one of us who said, "Why, we don't want a democrat or a republican for governor! We want a man for governor!"

Measures, and men and women elected or appointed because of fitness for their jobs—these make the target at which the ballots of Michigan women will be aimed. To serve all the people, rather than provide soft snaps, easy berths or political plums for a few people—these are what Michigan women are setting forth to help Michigan men to win.

MENDING TEARS WITH MENDING TISSUE.

Mending tissue which can be purchased for five cents a package at the novelty counter in nearly all dry-goods stores, should be an accessory to all work baskets as it is a great saver of time when repairing rents in either wool or silk garments.

Place the torn part of the garment on the flat surface of an ironing board with the wrong side up. Carefully fit together the two edges of the tear and over this place a strip of the mending tissue, letting it extend half an inch on each side of the tear. Over all lay a piece of material like the garment and press with a hot iron, lifting and replacing the iron instead of shoving it. Sheer material cannot be mended in this way.

The mending tissue is also convenient to use when turning up the bottom of coats or men's trousers.

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



No. 2338—Girls' Dress. Cut in four sizes, 2, 4, 6 and 8 years. Size six requires three yards of 36-inch material. Price 10 cents.



No. 2573—Girls' Dress. Cut in four sizes, 4, 6, 8 and 10 years. Size eight requires 3 3/4 yards of 36-inch material. Price 10 cents.



No. 2731-2527—Ladies' Costume. The waist 2731, is cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 2527, is cut in seven sizes, 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Eight yards of 44-inch material will be required for the entire dress. Width of skirt at lower edge is



No. 2728—A Smart Negligee. Cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires four yards of 36-inch material. Price 10 cents.



No. 2735—A set of three attractive dress accessories. Cut in four sizes, small 32-34; medium 36-38; large 40-42; extra large 44-46 inches bust measure. It will require for No. 1, 1 1/2 yards, for No. 2, 1 yard, and for No. 3, 1 1/4 yards of 36-inch material. Price 10 cents.



No. 2718—Girls' Dress. Cut in four sizes, 6, 8, 10 and 12 years. Size 10 will require four yards of 27-inch material. Price 10 cents.



No. 2708—Cut in three sizes, 12, 14 and 16 years. Size 14 will require 3 3/4 yards of 44-inch material. Price 10 cents.

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Spraying Formulas In Small Quantities

(Continued from page 407).

cubic inch; soft water, one cupful. For Scale, Insects, Plant Lice, Animal Lice, Etc.

From a cake of laundry soap cut out a cubic inch, that is, one inch each way. Shave it into a cupful of soft water and boil for a few minutes in a thick vessel which will hold the heat for a time. When it is dissolved remove from the fire and pour into it, while still hot, two cupfuls of kerosene oil. Agitate violently with an egg-beater until the oil is perfectly emulsified, when it will have a creamy appearance and will not readily separate from the water if allowed to stand. Or in place of an egg-beater one can pour the mixture into a two-quart fruit-jar and vigorously shake it, with an up and down motion, until the mixture is completely emulsified which should require at least ten minutes. This is known as stock emulsion and must be diluted before using. For use as a dormant or winter spray against scale-insects it should be diluted at the rate of one part of the stock emulsion to three or four parts of water, or in other words, mix one cupful of the stock emulsion in a quart of water. For plant-lice or lice on domesticated animals it should be diluted at the rate of one part of the stock emulsion to ten to fifteen parts of water, or mix one cupful of the stock emulsion in three quarts of water. This more dilute spray should be used if there are any leaves on the plant to be treated, and in all cases the spray mixture should be kept stirred or shaken while applying. If this is not done a good mixture is not maintained

powder, dusted on the plant, either alone or mixed with lime or sulphur. Another equally good way is to use it as a spray. Into a quart of water add two teaspoonfuls of pyrethrum and stir well, it will not dissolve but will remain in suspension. It kills insects through their breathing pores but is harmless to man. Care should be taken to use fresh pyrethrum or else good results cannot be expected. It should be purchased in air-tight packages and kept in a tightly closed fruit-jar if it is not all immediately used.

Arsenate of Lead.

Standard Formula.—Arsenate of lead (powdered), one and a half pounds; (or arsenate of lead paste), three pounds; water, fifty gallons.

Household Formula.—Arsenate of lead (powdered), three tablespoonfuls; (or arsenate of lead paste), one tablespoonful; water, one gallon.

For the Codling-moth, Caterpillars on Plants, Flea-beetles, and Other Chewing Insects.

Measure into a cup three tablespoonfuls of powdered arsenate of lead and fill the cup about two-thirds full of water. With a spoon mix these so that a good paste is formed and then add enough water to make four quarts of poison. This will be strong enough for most of the chewing insects, but for the more resistant ones such as the potato beetle, it will be more effective to use twice as much arsenate of lead or six tablespoonfuls to a gallon of water. Bordeaux mixture can be used in place of the water if it is desired. If arsenate of lead paste is used it will require twice as much, by weight, as the powdered form. The powdered arsenate of lead is much lighter than the paste of the same bulk so that apparently more of the powder is being used.

Arsenate of lead has many advantages over Paris green, inasmuch as it will stick to the foliage much better and will not easily wash off. Also it will not be as likely to injure the foliage and can safely be used in combination with lime-sulphur sprays.

Arsenate of lead is also applied in the form of a dust when it is mixed with either air-slaked lime or sulphur and applied with a specially constructed dust-gun or else dusted on by hand.

Calcium Arsenate.

Standard Formula.—Calcium arsenate (powder), three-fourths pound; (or calcium arsenate paste), one and a half pounds; water, fifty gallons.

Household Formula.—Calcium arsenate (powder), three teaspoonfuls; (or calcium arsenate paste), one teaspoonful; water, one gallon.

Used in Place of Arsenate of Lead Sometimes.

This material is mixed in the same manner as the arsenate of lead and is used against the same garden insects. Like the arsenate of lead it must be used stronger when applied to the potato as the potato-beetle is quite resistant to the weaker poisons. Bordeaux or lime-sulphur may be substituted for the water.

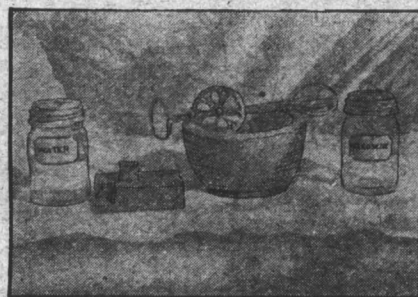
Poison Bran Mash.

Standard Formula.—Bran, twenty pounds; Paris green, one pound; molasses, two quarts; oranges, three (chopped fine); water, to make a good mash.

Household Formula.—Bran, one qt; Paris green or white arsenic, one teaspoonful; molasses, one tablespoonful; orange, one-quarter (chopped fine); water, to make a good mash.

For Grasshoppers, Army-worms, Cut-worms, Garden Slugs, Sow-bugs, Etc.

Add a teaspoonful of Paris green or white arsenic to a quart of bran and mix well together. Put three tablespoonfuls into a cup of water, stirring



Materials for Kerosene Emulsion.

which may result in burning the leaves. If hard water is used in making the emulsion, much better results will be had if a little washing soda is added. It is best to apply this spray on bright sunny days when the moisture in the spray will evaporate quickly. It is a contact spray and kills by hitting the insect, so that a thorough job is necessary. If any of the stock emulsion is left it can be kept for some time in an air-tight fruit-jar, which should be labeled and put away for future use.

Kerosene emulsion is one of the oldest of the contact insecticides and has been supplanted to a large extent by the nicotine spray.

Crude Carbolic Acid Emulsion.

Standard Formula.—Crude carbolic acid, one pint; soap, one pound; water, one gallon.

Household Formula.—Crude carbolic acid, one teaspoonful; soap, one cubic inch; water, half a cupful.

For Use Against Root Maggots.

Shave a cubic inch of laundry soap in a half cupful of hot, soft water and then add the teaspoonful of crude carbolic acid. This can be emulsified as described above for the kerosene emulsion. When ready this will be sufficient for one gallon of water. Care should be taken, as in the kerosene solution, to keep the material agitated while applying.

Pyrethrum.

Standard Formula.—Pyrethrum, one ounce; water, two gallons.

Household Formula.—Pyrethrum, two teaspoonfuls; water, one quart.

For Cabbage Worms.

Pyrethrum is usually applied as a

Mention The Michigan Farmer When Writing to Advertisers

it well together and add to the bran, working it in. Put a quarter of an orange or half a lemon through the food grinder and add to the bran mixture. Then add enough water to make a good stiff mash. A teaspoonful of this mixture scattered near the base of the plants to be protected will give the required results. It may also be sown broadcast. To get the best results from this mixture, it should be put out in the evening so that it will remain fresh all night. Care should be taken not to allow the poultry to run where this is being used.

Poisoned Bait for Root Maggots.

Almost every gardener is troubled with root maggots to a more or less extent. They are bad in beans, onions, radishes, cabbages and a few other garden vegetables. The adults of these maggots are small flies about two-thirds the size of house flies. And like the house flies they are lovers of sweets. They are killed by feeding them on poisoned syrup. It is made by dissolving five grams of sodium arsenite in a gallon of hot water and adding half a pint of molasses. This is poured into several shallow pans or dishes which are placed on the ground near the plants to be protected. After the pans of poisoned syrup are in place they should be covered with a wire screen having a mesh too small to allow bees to enter, and large enough to accommodate the flies.

BUY NURSERY FRUIT TREES OR PLANTS.

IF fruit trees or small fruits are to be set this spring they should be ordered at the earliest possible moment, because the stocks of many nurseries are running low and already some lines of stock are practically exhausted. Make out a list of the varieties wanted and write to several nurserymen for prices. Deal with the nearest nurseryman who can supply your needs, so the stock will not be long on the road. In the cold sections of the north do not have shipment made until early spring unless you have a cold pit or cold cellar in which to store the trees, shrubs, and plants. If the trees do not come too early, open the package, stand the trees in a slanting position, and cover the roots and part of the trunks with slightly moistened earth. Work the earth around the roots and do not let it dry out or the roots will be injured. This is called "heeling in." Plants of grapes and bush fruits should also be "heeled in," but strawberries should be set straight up and only the roots covered, as earth or sand spilled in the crowns will render the plants useless if it does not kill them. In the south and the milder winter sections nursery stock may be planted now or be heeled in out of doors. In the latter case dig a small trench to stand the trees in, and slant the tops toward the south. Be sure to keep the roots covered with earth.

NEWS OF THE WEEK.

(Continued from page 402).

ese militarism and restore China to the Chinese.—Riots in Berlin are put down by heavy fighting and it is believed that the general strike in central Germany has failed as a result.—Herbert Hoover, at present director-general of Allied relief, has taken over the control of all railways in the old Austrian empire for the distribution of food stuffs.

Monday, March 10.

FULLY one thousand persons were killed or wounded in fighting in Berlin last week and two hundred Bolsheviks have been executed.—Volunteer German troops are being organized to move against a large force of Reds who are now nearing the German border.—France yields to the Allied plan to provide Germany with 250,000 tons of food monthly until August.—The Canadian government has acquired all lines of railway within its borders save one.—Representatives of thirteen nations are asking the Peace Conference to keep intoxicating liquors from all native races.

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THE MOST EFFECTIVE NON-SKID TIRE ON ANY ROAD

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You'll find them "The Tyre to Tie To"

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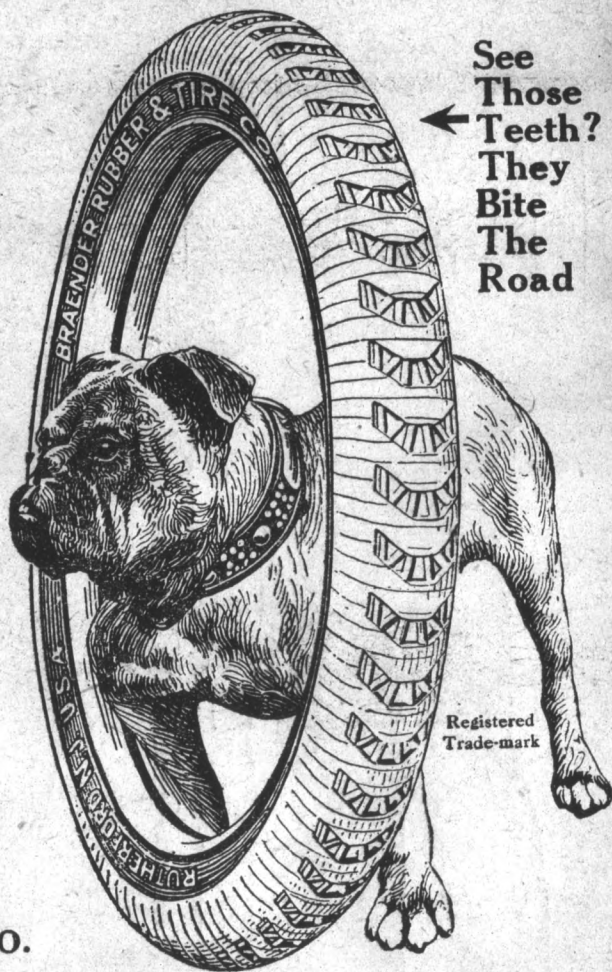
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We will supply you with from three to a car load of these hardy, profitable animals. Nearly every farm can profitably handle Angora Goats. Write for full particulars, photographs of our herds, prices, etc.

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SEED OATS
Pedigreed M. A. C. test College Success Oats. Test field weight 38 lb. per bu. Weeds none. 93% germination. Worthy Oats, 35 lb. per bu. Weeds none. 95.5% germination. Prices 1-5 bu. \$1.60; 5-24 bu. \$1.40; 25-200 bu. \$1.30; over \$1.20. Sacks furnished free.
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Michigan Farmer, 1 yr., wk. \$1.00
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Regular price \$2.00
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Green's Fruit Grower, mo.50
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Every Week 1.00

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AS comfortable as an old shoe. Sturdily made for hard usage. So much more economical and better in every way than old fashioned work clothing that you'll be sorry they weren't available sooner. Ask your dealer or write for descriptive pamphlet. Address Department 2233

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One Piece Like Your Union Suit



Farm Loans Help Farmers

STORY writers of the future apparently are threatened with the problem of inventing some other type of villain to take the place of the avaricious shark who goes through the story threatening to foreclose the mortgage on the old home farm. It seems the Federal Farm Loan Act, which was put into effect about a year ago, will do away with the old-fashioned mortgage which, when it falls due, may be foreclosed. The new law, now that it has been tested in practice, is said to be a success.

The farmer who wishes to improve his farm, equip it with better implements, stock it with better stock, drain it, fertilize it, or pay off old debts contracted before June 28, 1916, may borrow money under this act at five and a half per cent interest for a period of forty years, with the privilege of paying off the entire loan after five years if he is able and wishes to do so. The same privilege is accorded the prospective land owner who wishes to buy land to cultivate it himself.

All money borrowed in this way must be obtained through a farm loan association. If there is no farm loan association in the immediate vicinity of the farmer wishing to obtain the loan, any ten or more farmers who wish to borrow an aggregate of \$20,000 or more and who are good moral risks may form a farm loan association.

Application for a loan must be made to the nearest Federal Land Bank, which will notify the applicant whether he is within the district of any farm loan association. If he is not, blanks will be sent him with instructions regarding the formation of such an association if he and his neighbors wish to form one.

After this, those wishing to organize must hold an organization meeting and elect a president, vice-president, and also a secretary-treasurer, who is a bonded officer and may or may not be a member of the association. The next step is to have the association incorporated under the laws of the state, the same as any other firm doing business in the state.

Each farmer borrowing money of the bank must subscribe for stock in the bank equal to five per cent of the amount he borrows. He holds this stock until his loan is fully paid, when the money invested in stock is returned to him. This stock is to guarantee the loans. If the local association is unable to meet its obligations each borrower is liable only for the amount of stock he holds, or five per cent of his loan. The liabilities of each association are guaranteed by the resources of every other association in the United States.

Any profits the association may make are divided among the borrowers in proportion to the stock they hold. No commission is charged for making the loan. If interest rates go down the borrower will be given the benefit of the lower rate.

When the farmer pays his interest he may make small payments on the principal in multiples of \$25 if he wishes. On the other hand, he may have the amount as long as he lives, if his security is good and he pays the interest promptly.

Money to the amount of fifty per cent of the value of the land, plus twenty per cent of the permanent improvements, may be borrowed on any given piece of land. As the price of the land increases more money may be borrowed on it. The maximum amount that may be borrowed by any one farmer is \$10,000, and the minimum \$100.

The farmer borrowing the maximum amount in this way saves about \$60 a year, and has forty years, or a lifetime, to pay it in, instead of five years. In addition to the saving of \$60, Farm Land Bank mortgages are free from taxation.

If ten or more farmers wish to borrow money in excess of \$10,000 each they may form a joint stock land bank, with a capital of at least a quarter of a million dollars. Half the stock must be paid up at the time of beginning business and the other half is subject to call. These joint stock land banks operate under much the same plan as the farm loan associations, but they have no connection with the farm loan associations.

Speculators cannot obtain advantage of the farm loan associations, as the borrower must be a farmer cultivating his land or a prospective land buyer who intends to cultivate his land. The act is intended to help the farmer improve his land and increase food production and help the tenant farmer to become a land owner.

Tree Surgery in the Orchard

AS many important details have been left unsaid about orchard surgery that though many a farmer or orchardist, while he has grasped the principle, his workmanship has been so crude, that in many cases he has injured the trees more than he helped them.

Nearly all orchard trees should be kept cut back in the tops. This should be done that they may be sprayed and picked with as little expense as possible. Then the fruit of low trees whip off less in the wind.

However, great care should always be taken in the cutting. No stubs should ever be left, they rot in and make a weak place, also a breeding place for diseases and pests.

Never cut into a canker or blighted twig without sterilizing the tools. It is a good plan to do so every little while on general principles. Never cut a lot of small bearing branches in order to leave one big one. It is the little ones that have the leaves and fruit. Cut all limbs on a slant, slanting down from the branch you are going to leave. They heal over much quicker cut in this way. Trees with cavities may be helped by boring into them from below, letting all water run out, which also helps them to keep from splitting when they freeze. (The bit should also be kept sterilized).

Repairing by bridge grafting and all of those stunts are so fully covered by United States and state bulletins that I will not take the space to dwell on them here.

The writer did a very novel piece of tree surgery last spring that promised to be a great success. It is a large Northern Spy tree in the orchard of D. W. Neu, Ingham county. About one-fourth of the north side of the tree was dead. A large root had died, then a streak clear up had died. The writer cut back the top, hewed out the dead wood and then planted two small trees on that side, and grafted the tops all along both edges of the wounds.

Mr. Neu kept them watered and also kept the leaves picked off. Nearly all of the unions are taking good and the tree made a good growth last year. Mr. Neu also told me that he picked about thirty bushels of fruit from the tree.

H. W. M.

\$10.95 Buys 140-Egg Champion Belle City Incubator

Hot-Water, Copper Tank, Double Walls, Fibre Board, Self-Regulating, With \$6.35 Hot-Water 140-Chick Brooder—both only \$15.95.

Freight Prepaid East of Rockies & allowed on express. Guaranteed. My Special Offers provide ways to earn extra money. Order Now, or write for book, "Hatching Facts."—It's Free and tells all. Jim Rohan, Pres.

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Save the Baby Chicks

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

Druggists and seed dealers sell GERMOZONE, the best poultry remedy and preventive. For old and young,—bowel trouble, colds, roup, rusty or spoiled food, limber neck, chicken pox, sour crop, skin disease, etc. Sick chicks can't wait. Do it now.

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Baby Chicks Hatching eggs, seven leading varieties, best quality. Lowest prices. Catalogue free. Goshen Poultry Farms, R. 19, Goshen, Ind.

100,000 BABY CHICKS

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

BABY CHICKS—11 Varieties, \$10 per 100 up, 2 weeks old 25c up, 4 weeks 45c up. Hatching eggs \$1.50 per 15 and \$3 per 100. Brd. White and Buff Rks. Buff and white Orp., S. & R. O. R. I. Reds, White Wyand., S. C. W. Leg., S. & R. O. R. Leg., Airedale Pups, Chr. free. Sunny Side Poultry Farms & Hatchery, Blanchester, O.

Baby Chicks: S. C. White and Brown Leghorns. Large healthy vigorous stock farm raised to lay. Guaranteed to reach you in first class condition by parcel. Catalogue with price list free. **WOLVERINE HATCHERY, R. 2, Zeeland, Mich.**

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

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

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Both Machines \$14

Freight Paid Only

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

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150 EGG INCUBATOR CHICK BROODER

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Blue CUSTOM HATCHING Hens

Fifteen dozen eggs incubated and chicks boxed and shipped \$8.50. Less than full compartment 50c per dozen. Order April chicks now. Many varieties send for circulars. Crescent Egg Company, Allegan, Mich.

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

RAISING GIANT RABBITS.

(Continued from page 415).

likely to be bred as extensively as any member of the giant family.

All the giants are valued especially as meat animals, although they mature less rapidly than the smaller breeds, their growth continuing until they are fourteen or fifteen months old. They can be bred safely at eight months, however. Weights of eighteen and twenty pounds, such as are sometimes mentioned, are not common, by any means. Flemish giants weighing from twelve to fourteen pounds are much more often seen. Utility breeders believe that the giants offer greater possibilities for developing strictly meat animals than any of the other breeds, although owners of Belgian hares and of New Zealand reds may dispute their claims.

New Zealand reds, while smaller than the giants, are larger than the Belgian hares, and are becoming fairly popular in the east, although they do not seem to have become wholly acclimated yet. For several years they have been bred in constantly increasing numbers on the Pacific coast, and much is said about their meat qualities. It is claimed that the cost of producing a pound of meat is less with these rabbits than with any other kind.

Massachusetts. E. I. FARRINGTON.

SHIPPING HATCHING EGGS.

WOODEN handled market baskets are suitable carriers for hatching eggs. Place a layer of excelsior or straw in the bottom of the basket and then wrap each egg separately in paper. Lay the eggs carefully side by side so there will be no room for jostling. Place a layer of excelsior over the eggs and cover the basket with gunny sacking. Tie the handles together over the top of the basket and this will prevent other packages being placed on the eggs during transit.

Wooden candy pails can be used for shipping hatching eggs by packing them much the same as in baskets. When the wooden pails are placed on the floor the eggs receive more of a jar than when they are placed in baskets. It seems as if the eggs are more apt to suffer from the vibration of the train when they are packed in a wooden pail than is the case when packed in baskets, as they act more like a spring or cushion.

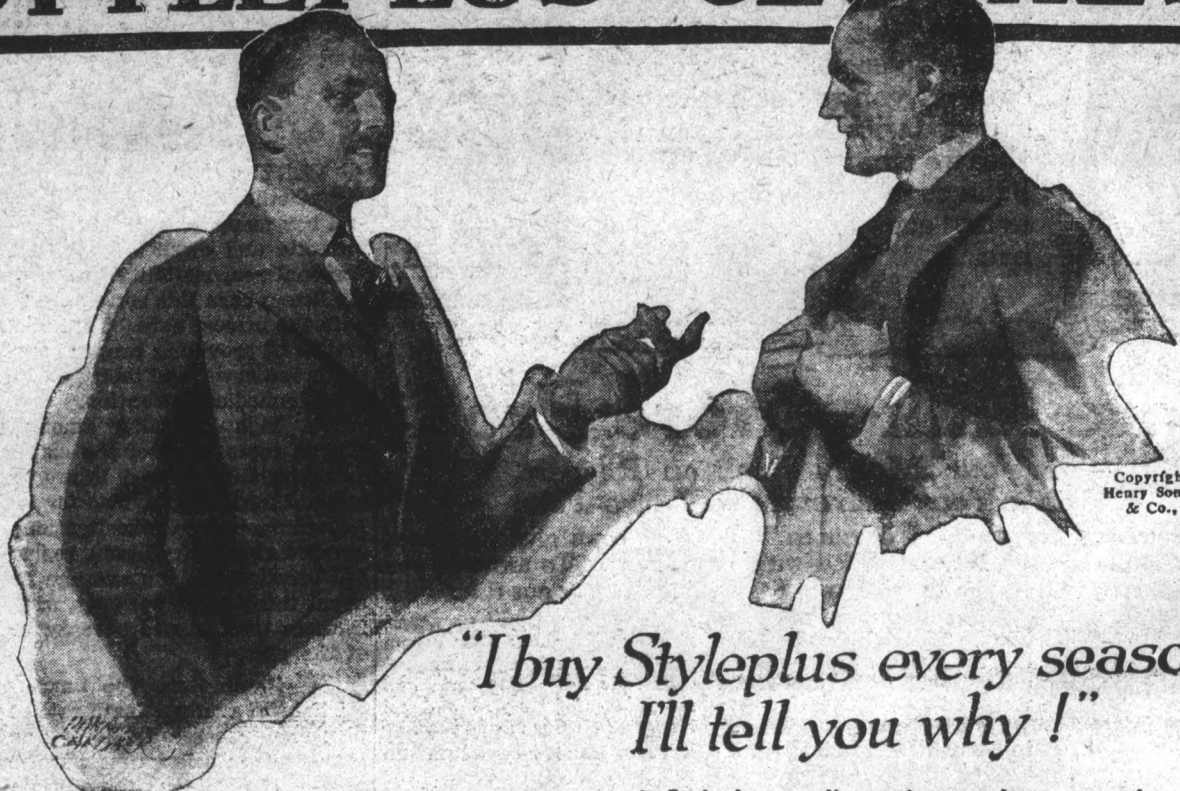
There are several commercial parcel post packages for mailing hatching eggs which are satisfactory. In the one with which we are familiar, each egg fits into a corrugated paper cylinder and the cylinders completely fill the box so there is no room for the eggs to jostle around. These boxes can be returned to the shipper for a few cents postage and used many times. We have had eggs come by parcel post in such a box without breakage and the percentage of eggs hatching has been satisfactory.

Many poultrymen are satisfied with the parcel post method of shipping the hatching eggs. The per cent of breakage has been small and it is very convenient for the farm buyers to receive the eggs from the rural carrier instead of making a trip to the express office.

Some breeders mate cock birds and pullets and cockerels and hens in their different breeding pens and it usually seems that the eggs from the hens give the best results. It does not pay to hatch the eggs from pullets unless it is very necessary as all practical poultrymen know that the mature hen is the bird that can transmit the most vigor to the chicks.

It pays to study the Standard when mating up breeding pens and strive to produce birds that are as near perfect as possible. Opinions vary concerning some of the descriptions in the Standard but until they are improved it is the beginner's best source of information.—R. G. K.

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"I buy all my clothes at one store—the Styleplus Store in town. The advantage is that each suit has the Styleplus label in the collar, the price label is put right on the sleeve by the makers, and they guarantee the clothes.

"See the point? I know the manufacturer is back of these clothes and they must be good. I know that the price is right. Styleplus style

and Styleplus quality suit me down to the ground. The prices are always reasonable.

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"Be a Styleplus 'regular' and your clothes troubles are over. And you'll always get your money's worth!"

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The sleeve ticket tells the price

Sold by one leading clothing merchant in most cities and towns. Write us (Dept. H) for Styleplus booklet and name of local dealer.

HENRY SONNEBORN & CO., INC.
Founded 1849 Baltimore, Md.



America's only known-priced clothes

Ring Necked Pheasants

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

\$ 6.00 for 15 eggs
\$5.00 for 100 eggs

Genuine Wild Mallard Ducks

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

\$ 5.00 for 15 eggs
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Giant Bronze Turkeys

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

\$1.50 per egg

Bloomfield S. C. Rhode Island Red Chickens

Fine laying strain of prize birds

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

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

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

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

Pure Bred Practical Poultry

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

Day Old Chicks

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

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

Eggs for Hatching

Eggs from any of the foregoing breeds for settings or in quantities for incubators. Special price for 500 to 1000 eggs during season; and for eggs for early broilers.

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

Pullets—A few Pullets now laying are offered: 5 White Wyandottes; 16 Barred Rocks; 15 White Rocks; 20 White Leghorns.

Special in Cockerels—We have about 30 Barred Rocks of special breeding that, if taken at once, we will sell at \$2.50 to \$3.50 each; about 20 S. C. and 1 R. C. White and Buff Rocks; White Wyandottes and Anconas.

Hares—Belgians and Flemish Giants.
If you really want poultry stock this season, especially Day Old Chicks, you should order now; stock can be shipped later.

BLOOMINGDALE FARMS ASSOCIATIONS,

Bloomington, Michigan

Bred-To-Lay White Leghorns, Leading M. A. C. Demonstration Farm in 1918. Average production for 150 hens last year 185 eggs each.

Eggs for hatching, \$2.00 per 15, or \$10.00 per 100.

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Additional Poultry Ads. on Page 447



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The Michigan Farmer, Detroit

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Care of Young Pigs

EVERY owner of a brood sow, whether he lives on a large farm and has many, or whether he is a suburbanite and owns one, should feel a personal responsibility to see that the pig litters born this spring are received with the utmost care. That means the matter of providing proper housing for the brood sows, and their young should have immediate attention.

The high mortality among young pigs in some parts of the country can be materially reduced if proper housing and feed are provided for the sows. According to one investigation, which covered about fifty herds, representing 930 brood sows, the average loss was about thirty-three per cent, while some farmers lost fifty to seventy per cent of the pigs.

Death Rate Too Large.

That the average death rate of young pigs is unnecessarily large, and that losses are in a large measure preventable, is the belief of the officials of the Department of Agriculture. To remedy this situation in time to prevent heavy losses in the next pig crop, the department urges immediate preparation along two lines—providing satisfactory houses for the brood animals at farrowing time and better management and feeding of the sows, both before and after the pigs are born.

It has been found that the larger losses usually occur on farms where the housing facilities are poor. In one investigation it was learned that where good or fairly good hog houses were used, the average number of pigs raised in a litter was five and one-quarter, while on farms where the housing was poor the average number reared from each litter was only three and one-tenth. The average saving, therefore, where good houses were used, amounted to more than two pigs to the litter.

Hog Houses Are Needed.

There are many kinds of satisfactory hog houses which can be built at comparatively low cost. Any one of these will soon pay for itself in the increased number of pigs saved. Both the individual house and the colony hog house have a place on the hog farm. Both give very satisfactory results if they are properly constructed. If only one can be had the colony house usually is to be preferred, especially where a large number of sows are to be kept. The farrowing period usually extends over several weeks if there are many sows. In such cases each pen in the house may be used for two or more sows during the period. Assuming that two sows use a pen and that by reason of the satisfactory quarters provided two additional pigs are saved in each litter, it would not be long until the hog house paid for itself. Good quarters are one of the best investments the swine grower can make.

The satisfactory hog house provides warmth, dryness, abundance of light, ventilation, sanitation and comfort. To meet these requirements the house need not be expensive. As a matter of fact, many expensive hog houses are not satisfactory because they do not possess all these requirements, while many less expensive ones properly planned and built give excellent satisfaction.

The care given the brood sow, especially in her feeding, is equally important. Help on this point can be obtained from bulletins which state agricultural colleges or the United States Department of Agriculture will furnish.

There is no animal on the farm which requires better protection from the cold than the hog; none for which a good bed is more necessary; and

none so much in need of sunshine as the little pig. The horse and the cow have good coats of hair—even a calf or colt left in the cold is provided with a good fur coat; the hens' feathers are the best protection against low temperature, but the hog has almost nothing between his skin and the weather. One of the first requisites for success with hogs is a shelter where young pigs can be kept warm and well supplied with sunshine and fresh air. A little pig takes cold very easily and recovers slowly, if at all. To prevent taking cold he must be kept dry, warm, away from draughts and provided with good fresh air.

PURE-BRED CATTLE PAY BEST.

A FARMER bought a registered Shorthorn heifer in 1906 and produced ninety-four head in twelve years. There are many cases where the increase is as rapid as this but as a rule the descendants become scattered and the record of increase is not kept. Two brothers in Wisconsin started in 1904 with one registered Shorthorn cow and kept a careful record of the increase and produced in fourteen years one hundred and nineteen head.

Any farmer who will start with one or two pure-bred females and keep the female increase will in the course of four or five years have a very valuable herd that has cost practically nothing but their keep. The bulls which come along from year to year will sell for more money than grades will sell for and the heifers will take the place of the grades which ordinarily the farmer has been raising. The sales should be made from the grades and in a short time only the pure-breds will remain on the farm.

This is an easy way to get started with pure-bred cattle and the profits are certain to be much larger than in raising grades. It doesn't require any better care to grow pure-bred Shorthorns than ought to be applied to the raising of grades, but the better the care the better the results with both. It is the man who cares for his stock that realizes the best results and the largest profits. Raising live stock isn't an endurance contest. It is an effort to get the largest development and profit for the amount of investment in feed and maintenance. That is why the pure-bred makes the best showing.

A great many farmers seem to have the impression that pure-bred cattle are not adapted to their farm operations—that the raising of pure-bred cattle is a business entirely apart from theirs. This is a very common impression among them but it is a misconception. The fact is that every farmer who is growing cattle would find it more profitable to raise pure-bred cattle than grades. It doesn't cost any more to produce them. They do not necessarily require any more room. They increase just as rapidly as do the grades and they invariably sell for more. The interesting fact is that once a farmer becomes interested in growing pure-breds he begins to pay more attention to their care. He takes more pride in their development and he is encouraged to do so because of the better returns that are in prospect.

Raising pure-bred cattle is the farmer's business and it is a business in which he will take an increased pride and have both increased profits and happiness. The use of a good bull means cash returns to the owner and the use of good females also contributes to the bank account.

Managing the Herd Bull

IT always seems to be the gentle bull that attacks its caretaker and causes serious injury or death. A bull that is known to be ugly is watched, and as the attendant is on guard when around the animal, there is less danger of injury.

It never pays to allow a bull to find out its strength, and for this reason the farmer should keep control of the animal at all times and not let it know that the strength of the boss is inferior to its own physical powers.

There is much risk in allowing bulls to go down in the pasture with the cows, especially if the fences are not in the best of condition. Frequently a bull has broken out and gone down the road, where it has caused much trouble and possibly a serious loss to some farmer owning a pure-bred herd of another breed. There is also the danger that the bull will injure people on the road, and after once obtaining its freedom, it is more difficult to control the animal and keep it contented while in confinement.

The best method of managing the bull is to keep him in a strongly built box stall, with a small yard outside, where he can exercise and see the other members of the herd. The fence around the yard must be well built and braced. Strong cement posts with iron pipe set in the cement connecting the

posts makes an unbreakable pen. If a stout board fence is used, do not make the boards so high that the bull cannot see what is going on outside.

A sire that is not at least one year old is too young for breeding, and the first year that the animal is used for breeding, the amount of service should be limited. Because a bull seems strong and vigorous is no reason why its breeding powers should not be protected as carefully as is the case with other kinds of farm animals.

All bulls should be dehorned. This is a protection for the caretaker, and in addition the bull without horns is less apt to develop a pugnacious disposition. The bull should always be ringed and led with a staff, and if it is exercised by driving or using on a tread mill, the greatest care must be taken to avoid injury to men working around the animal.

When we consider what a poor sire can do to a good dairy herd and what a good sire can do for a poor herd, it is evident that more consideration should be given to the dairy bull. When every farmer realizes how much cash is thrown away by accepting service from scrub bulls, the dairy business will become more profitable, breeding fees will be paid with less grumbling, and all dairy organizations will develop more rapidly.

K. G. R.

Substitute Feeds for Calves

(Continued from page 408).

The feeding value of linseed meal is too generally understood to require any further discussion.

In order to prevent scours and other digestive derangements two pounds of soluble blood flour was mixed with each one hundred pounds of feed. This blood flour is sold under the trade name of Soluble Blood Flour. The manufacturers claim that it prevents scours. Many breeders of pure-bred dairy cattle use it as a preventive of digestive ailments and scours. It contains forty-seven per cent of protein, so that its value as a food is very high. The blood meal retails at about \$4.00 a hundred pounds. The cost of the entire mixture was a little over three cents per pound at the time calves were fed.

At the beginning the entire mixture was made into a thin gruel and fed along with skim-milk. The quantity of the mixture fed was gradually increased as the quantity of milk was decreased until at the end of two weeks the entire lot were fed only the prepared feed, choice clover hay, dry grain and pure water. We mixed the gruel with cold water several hours before feeding time so as to get the lumps all worked out, and sometime before feeding added sufficient boiling water to bring the mixture to the temperature of fresh milk. A pound of the mixture was fed with a gallon of water. About six quarts of the gruel was fed to each calf at the beginning and the quantity was slowly increased as conditions seemed to warrant. At four months of age some of the calves were eating three gallons of the gruel a day.

The calves were taught to drink the prepared gruel and were fed twice a day. Some of the younger calves did not appear to relish the gruel so well as the skim-milk and grain mixture, yet no serious trouble was experienced in inducing them to eat sufficient to maintain normal growth. The cost of the mixture for the eight calves for a period of four months amounted to about \$100. In addition they were fed all of the clover hay, grass and dry grain (oats and wheat bran) they would readily consume. At five months of age they were a good bunch of heifers and all developed into vigorous and healthy cows.

Since 1914 we have fed considerable

of the same mixture to young calves, but usually as a supplement to the supply of skim-milk. It is our aim to get the calves started at a time when we have a surplus of milk to send to the creamery. The use of skim-milk, even in a limited quantity, simplifies the feeding problem and adds a certain degree of palatability to the ration that cannot be successfully replaced by commercial calf feeds or prepared mixtures.

In making economical use of these milk substitutes much depends upon the conditions under which one is feeding, the chances of obtaining an adequate supply of skim-milk at reasonable prices, and the quality of the calves he is rearing. It surely will not pay one to invest in these prepared feeds to rear inferior calves, either for the dairy or for beef, but they serve an admirable purpose on farms where whole milk is sold and where the owner wishes to rear a few of his best heifer calves each year. These feeds are sure to be used more extensively in the future of our dairy farming than they have been in the past, and now is the proper time to gain an accurate knowledge of their use.

PLAN SILAGE CROPS NOW.

IT is important at this time that consideration be given to the kind of feed crops that should be grown for the family cow as well as for the dairy herd. In order to maintain the milk production, crops must be planned to meet the requirements of the herd. Since some succulent feed is essential for economical milk production in winter, a silage crop is desirable. For small herds ranging from two to six cows, succulence may be provided in the form of roots; in larger herds it may be supplied by silage.

Dairy farmers in the south must realize by experience gained during the past two winters that a silo filled with silage is a necessity. Some dairy herds have been dispersed during this period and in most cases this can be traced to the cost of purchased feeds. A silo would have saved them. Many silos have not been filled, and still others have not been built because the farmers failed to plant the necessary crops.



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Readers' Questions Answered

FERTILIZER FOR OATS.

We are thinking of sowing fertilizer in our oats for the purpose of increasing our oat yield and assuring a clover catch. Any suggestions as to kind of fertilizer and amount per acre will be appreciated.

Calhoun Co.

W. W. S.

If any crop needs fertilizer containing nitrogen it is a crop like oats that are sown very early in the spring. At this time of the year nitrification is taking place slowly in the soil and a little available nitrogen gives the oats a wonderful start. It is possible, of course, that you have a sufficient amount of available nitrogen in the soil without adding any, though it is altogether probable that a little nitrogen in the fertilizer would be quite beneficial in giving the oats a start at the beginning when they need it most. The main part of the fertilizer, however, in my judgment should be available phosphorus in the form of phosphoric acid. The function of phosphorus is to hasten maturity and develop the seed of plants. Agricultural chemists have determined by careful investigation that our Michigan soils are deficient in available phosphorus; not only that, but the practical test of actual farming in growing crops indicates the same thing. Our experiment station has done some very careful work along this line and in every instance so far as I know acid phosphate or available phosphoric acid has given splendid results.

Now, my suggestion would be that if your land usually grows heavy straw or grass, if you have been using stable manure and clover in the rotation, that probably all you need is acid phosphate. If, on the other hand, you do not get a luxuriant growth of grass or straw, it indicates a lack of nitrogen. In that case I would recommend a fertilizer containing say two per cent of ammonia and twelve per cent of phosphoric acid, and in the latter case simply acid phosphate at the rate of about 200 or 250 pounds per acre.

EARLY POTATOES.

I am a boy seventeen years old, and have to support a family of six. Have an invalid father and our income fails to make both ends meet. I know your advice will help me. As you know, early potatoes always bring a good price for a while in summer. I want to plant half an acre. I have ordered the seed. The ground I am going to plant them on has been used for garden and peas and oats. I plowed it and manured it well last fall. Any advice you can give me about planting and taking care of potatoes will be greatly appreciated. As I have not had much experience with potatoes, would like to get them on the market by July 10.

Saginaw Co.

M. J. L.

Early potatoes will undoubtedly furnish a source of revenue as early in the season as any crop that can be planted. As you are near a good market you could raise some early vegetables, including garden peas, which usually sell for a good price, but potatoes are a staple crop, however, and, as you say, if you could get them into the market early you are quite apt to get a good price.

You have made all preparation for a good crop. You have good, rich ground plowed and manured the fall before. You have your seed already purchased, and everything is ready for spring. One important thing, as you suggest, is to get this crop started early so that you will get it into the market before the price drops, and one trouble with fall plowing for early potatoes is that it doesn't warm the soil as fast as spring plowing. If you could plow this ground

real early during a warm spell, it warms the soil very materially and your potatoes would start quicker and develop faster if all conditions are proper, than they will on fall-plowed ground. I think you can readily understand that. It wouldn't take so very much time to re-plow this half-acre and I am sure that it would warm up the soil so that the potatoes would get a quicker start. Then again, if you plow in the spring you could plant the potatoes deeper, which will enable them to resist dry weather later on. If potatoes are planted, say four inches deep, in fall-plowed ground real early, they are liable to be quite a while in starting—the ground is so cold. Of course, it won't do to plow this ground and work it until it is dry enough so that its mechanical condition will not be injured by tilling, but just as early as you can if you will plow it down and harrow it, not roll it, you don't want a compact soil for potatoes, then plant the potatoes four inches deep, I believe that you will get a quicker start than you will to plant them on fall-plowed ground.

After the potatoes are planted a few days the ground should be harrowed and you can continue this harrowing frequently until after the potatoes are well above the ground. In doing this you conserve moisture, destroy all the weeds when they are just germinating. If the weather condition is so that you can harrow sufficiently it will practical-

ly do away with all hand-hoeing because you have destroyed all weeds. After the potatoes are large enough they should be thoroughly cultivated. The first cultivation should be deep to stir up the soil well, then gradually give them shallower cultivation so as not to destroy the roots.

Don't allow any bugs on the potatoes. You can put on Paris green when you see the first of the old bugs on the potatoes. This will destroy many of them. Watch them closely and be ready so that the bugs will not eat the vines and destroy their vitality. You can spray this half acre with a Bordeaux mixture. Give them good, clean cultivation and with a favorable season you can expect splendid results.

APPLYING LIME AND FERTILIZER.

Is lime beneficial for oats? I ordered a car, some for alfalfa, the balance to be put on ground intended for oats. How should it be handled and spread? Would it be safe to put it on frozen ground? How much should I put on per acre?

Osceola Co.

H. H.

Lime is beneficial to any soil that has an acid reaction. Some plants will thrive better with an acid soil than others. Oats is one of these plants, but it will do better in a neutral soil than on an acid soil. I think the best place to put lime in a rotation of crops is on the crop where you are to seed to clover. Clover will not do well at all in an acid soil. If you put the lime

on the field that is going to be seeded to clover you will get a much better growth of clover and this growth of clover is very beneficial to all succeeding crops.

You can apply lime on frozen ground in the winter time successfully. It may be that when the spring break-up arrives some of it may be washed away but not very much. I wouldn't recommend putting the fertilizer on frozen ground, however. You had better wait and put the fertilizer on when you plant the crop. Fertilizer ought to be mixed with the soil and so had lime for that matter, but, of course, when you cultivate the land in the spring the lime is mixed and so the fertilizer would be, but you use such a small amount of fertilizer that you can't afford to have any of it wasted and it is readily available and so it is better to apply it at the time of sowing crop.

The best way to unload a car of bulk lime is to spread it right from the car. Have your lime spreader going, then haul the lime and unload right into the spreader or have an extra wagon so that you can leave that in the field and supply the spreader from that while you go after another load. This takes more help just at that time, but it saves handling the lime, otherwise you have got to draw the lime, unload it and then load it again.

C. C. L.

PREVENTING COLDS.

Can you tell me what is wrong with my hens? One eye swells very large and remains closed. The hens act stupid and sit on the roosts.

Huron Co.

B. W.

This condition is probably due to colds. A bird may be exposed on a cold windy day or roost in a draughty or damp house. At first the eye waters and then swells shut. A peculiarity of the trouble is the fact that one eye may swell shut and remain in that condition without the other eye showing any effect of the infection. The dust in the poultry house will often cause this eye trouble and for that reason garden loam should not be used on poultry house floors as it is soon changed to dust when the birds are scratching in the litter. Such a condition may develop into roup which will be indicated by the peculiar offensive odor and the great swelling of the eyes. Simple colds can be treated by placing permanganate of potash in the drinking water until it is a deep red. Infected birds should be isolated. The heads can be rubbed with mentholated vaseline. If the disease develops into roup the birds should be killed and the carcass burned. Roup spreads very fast in flocks that are devitalized by poor housing conditions and bad feeding methods. Even flocks that are in the best of condition should not be subjected to exposure to roup. The best treatment of colds is preventive. Flocks that are properly housed and fed on a balanced ration, seem to develop resistance and immunity to colds and such birds cause their owners very little trouble. Another means of preventing colds consists in bringing the young stock to the laying houses in the fall before the cold winds and rains occur frequently. This saves them from exposure and helps to keep them vigorous.

R. G. K.

I am convinced that southern Michigan muck farmers can afford to buy manure from Chicago, even when growing general farm products, just for the potash contained in it. This does not take into consideration the bacterial and nitrogen value of the manure.

P. E.

Dollars in Old Iron



ON almost every farm there is a scrap heap of old iron, or worn-out tools and machinery which would be worth dollars when collected and sold to the junk buyers in town. Nearly every town has someone who buys iron scraps and since the war has increased the demand for iron, prices paid have gone up. In my town the price has ranged from \$10 to \$12 per ton. Enough of such scrap has been collected and sold by the farmers of this community during the past few months to make up six carloads. It has returned a good many dollars to the farmers' pockets that otherwise would have been wasted. Then, too, such old material can be melted down and converted into new machinery or other necessities to help supply the nation's needs so one is really performing a patriotic duty.

On nearly every farm worn or out-of-date machinery has been pulled aside and replaced with new machinery, while the old is left in some out-of-the-way spot with the idea that some part, if not the whole machine, will some day become useful. However, the old machine is seldom used because the parts to it do not fit the

new machines. Even the bolts and nuts in the old machine are not as useful as one might think. Most of us have had the experience of losing a burr off a part of a machine then when we try to fit another of the same size, the thread is different. If we try a new bolt, it may answer the purpose but probably won't fit. Each manufacturer seems to have taken special pains to make every part of his machine, and even the bolts and nuts a little different from all others. Purely a trick to increase his sales. This is a condition remediable only by appropriate legislation. Farmers would save themselves a great deal of trouble and annoyance by demanding that their representatives pass a law requiring manufacturers to use standard rods where possible, and uniform bolts with threads cut with standard dies.

So the junk heap is of little material value on the farm. Add to this the unsightliness of old worn-out machinery cluttering up the premises and we have ample reason for making a clean-up day. The old machines have done their work so now let us cash in on the salvage.

Sheepmen Meet

(Continued from page 416).

He cited instances where losses sustained from sheep-killing dogs forced men out of the sheep raising business, and others where shepherds had been discouraged by dogs. The present legislature has before it several bills proposing new laws, all of which are receiving more serious attention than ever before. It is up to the present legislature to make a law that will eliminate most of our worthless curs and mongrel dogs, give protection to valuable dogs, and provide for reimbursement for losses from dogs in such a manner that the sheep owner will feel secure against this great menace to the business.

He pointed out the need for a perfected organization, so that we can handle our wool to get all that it is worth. His estimates showed that Michigan sheep men lost \$6,000,000 last year by not being organized so as to protect themselves against price fixing. He also showed that we lost about \$1,500,000 through our local selling methods, which did not return to the grower within about 10c per cwt. on the average of what he should have received from the price set by the government.

Mr. H. H. Halladay, President of the State Livestock Commission, spoke on "Progress Made in Sheep Industry in the State During the Past Year." He told us that 30,000,000 sheep were brought into the Upper Peninsula for pasture this summer, with at least as many more coming direct from the west into the Lower Peninsula.

E. N. Ball, Secretary of the American Merino Registry Association, was called on in place of Mr. Walker, to tell us something of the Ohio Sheep and Wool Growers' Association. He had attended their meeting and told us of the success in co-operative marketing of Ohio's wool. They averaged 9c per cwt. better than their country dealers paid, and on some grades as much as 15c difference. Each grower's wool was graded separately, and each received a price that he deserved for the grade of wool he had produced. He suggested that Ohio growers were going to set a fair price for next year's crop and stick to it. He stated that the Ohio Association had information to the effect that there is not as much of a supply of wool in the whole world as is being reported by wool dealers that there is in this country.

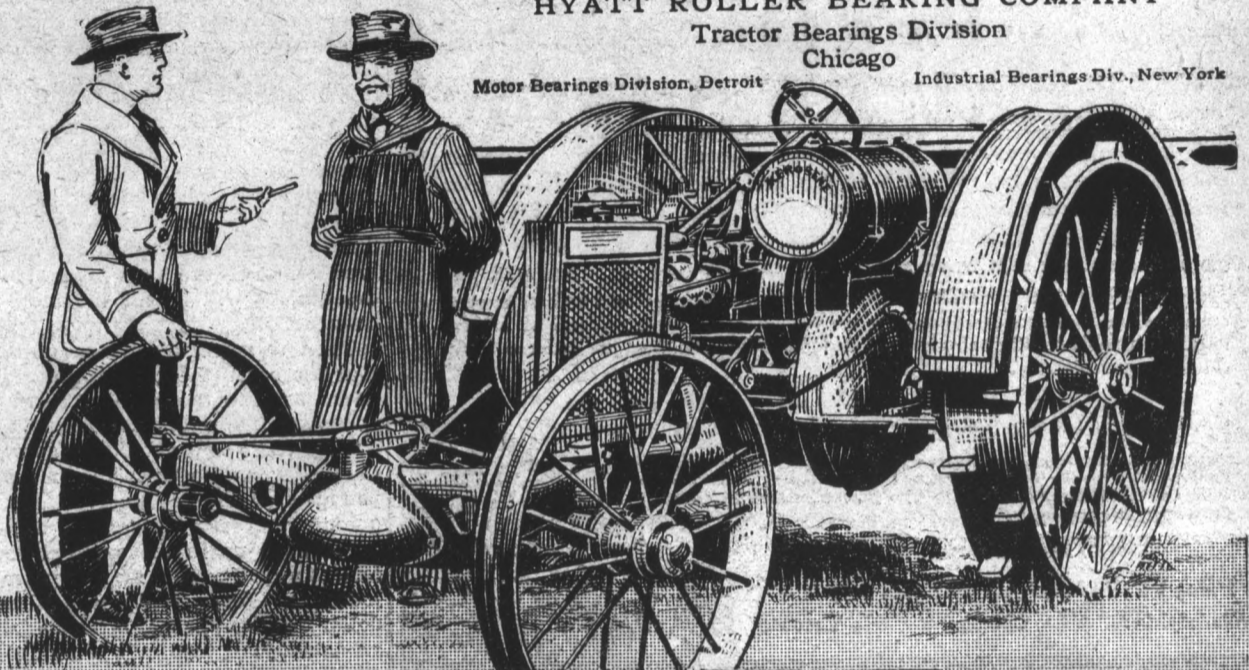
Mr. I. R. Waterbury brought up the subject of the government's plan to withdraw its wool from the market July 1st to November 1st, so as to leave a more open market for this year's wool crop. After considerable lively discussion, a committee was appointed to draft resolutions to send to the government wool administration in regard to ways it can assist the grower to a fair market.

V. A. Freeman, Extension Specialist in Sheep Husbandry, from the M. A. C., told of his work in helping new sheep owners of the state to get started right, and how the better methods of handling sheep were carried to the growers through meetings and demonstrations of selection and culling, shearing, detection of parasites, dipping, castrating, and docking. The aims of sheep extension work are more and better sheep in Michigan, and he believes that the correct and permanent results will be accomplished better through success of present and new sheep raisers than through propaganda and boosting. He showed the need of a stronger organization, not only to insure greater returns for wool, but to reach and encourage more shepherds with improved methods, improved sheep, and more profit through economic production.

The following officers were elected for the ensuing year:

President, E. G. Read, Richland.
Vice-President, Amos Welch, Ionia.
Secy-Treas., V. A. Freeman, East Lansing.

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

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We have about 50 ewes in lamb for sale, of best breeding. Registered. **HARRY E. SAUER, Seedman, 109-111 E. Ottawa St., Lansing, Mich.**

80 Breeding Ewes 2 years old in good condition will lamb in April must be sold this month. **ALMOND B. CHAPMAN, So. Rockwood, Mich.**

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

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

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Also have four extra fine Angus

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

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For Sale Registered Guernsey Bull

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

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Bulls, and Bull Calves, good enough for any breeding at prices you can pay.

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GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculin tested.

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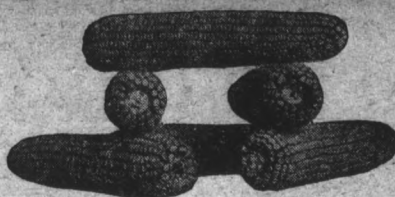
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Bull calf; he is a right good individual and well bred.

Will sell for \$100, have him recorded in buyer's name.

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WEIGHT PLUS QUALITY.

WHEN the feeder goes to market he finds that the premium prices are offered for the quality which his consignment may or may not carry. He observes a very considerable range between the values offered for the steers, or whatever the shipments represent, that have the something that is called quality, and those that lack this desirable possession. If he follows this up he will find that it is the presence of good breeding that has created this quality. He will find that the larger the percentage of good breeding the more evident the quality. The pure-bred sire has played his part, and if there are several generations of pure-bred sires of the pure-bred standard the quality will be all the more pronounced.

Then there is the matter of weight that increases the cash return. This harks back to the pure-bred sire also, and when this weight is combined with quality there is a double advantage to the seller as he receives more per pound and more pounds. It is frequently the case that all of the profit is wrapped up in these added pounds and the quality. Many a shipper has journeyed homeward minus a single dollar of profit, in fact often sustaining an actual loss, just for the lack of that quality and the extra pounds. It is an old story—and a true one.

There are times when a feeder can put in a load or more of inferior bred cattle and make a profit, but that is because he bought them low—too low for the producer's welfare. It is the producer who is chiefly concerned about the presence of quality and adequate weight. He is the one who profits when these are present and loses when they are lacking, and he is the one who can provide both. It is up to the producer to see that his standard corresponds with the requirements of the market. It costs money now to grow an animal to maturity. It costs money to finish an animal for the market whether as baby beef or at any older age. There must be a response on the part of the animal that will offset these increased costs. This responsiveness is only assured by an approach to the standard of the pure-bred which comes through the continued use of pure-bred sires. There is nothing theoretical about this. The lesson is taught every day on every important market. There is only one way to safeguard the producer and that is in the adoption of higher standards, and the nearer that standard approaches the pure-bred type the more certain the profit of the grower.

Count the cost of things, Mr. Cattleman, that have a part in the maintenance of your herd and the finishing of your beeves. Whether it is feed, labor, land, or any other item—it is higher.

Not long ago a load of well-bred Shorthorn steers sold on the open market at Chicago for \$20.50 per hundred weight because they were well bred and adhered to the well-bred type. Because of this they finished well. If these were marketed by their producer there is no denying that he had a considerable profit. Previous to that a load or two of Montana range-bred steers went onto the Chicago market at \$18, a record range price. They were by pure-bred Shorthorn bulls and had both the weight and the quality desired. They both count. They are the sources of profit. It takes them both to make adequate returns. It calls for the pure-bred bull that will supply both.

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REGISTERED
Holstein-Friesian Cattle

Sire in Service

FLINT MAPLECREST BOY

His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 1232 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bell, 30.57 lbs. of butter in 7 days and 121 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have bull calves from 2 weeks to 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell as a fair farmers price breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

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

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Three Rivers, Mich. Chas. Peters, Herdsman
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At Maple Avenue Stock Farm are under Government supervision. The entire herd have just been tuberculin tested and not one reactor. A good place to buy that bull you are looking for, and I have two very fine, richly bred, and splendid individuals ready for any amount of service. I want to answer any question you may ask about them.

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It doesn't cost much to make a start, but every year it will cost more. Some of the most successful and prominent Holstein men started with only a few pure bred animals in connection with a number of good grades, gradually weeding out the grades and replacing them with purebreds.

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100--REGISTERED HOLSTEINS--100 When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

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Holstein male calves at farmers prices. 3 pure bred Holstein calves from dams giving 2 above 50 lbs. of milk per day and one above 60 lbs. Raising females only. Price of one \$40.00 and two at \$50.00 each. E. E. Sweet, 2 1/2 miles north of Birmingham, Mich.

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Registered and high grade Holsteins two bull calves well marked age five months and under. Will sell one of the two. **W. D. BRINKMAN**, R. 2, Fairgrove, Mich.

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Registered Holstein bull 15 mo. old perfect individual, 1/4 white, 30 lb. Pontiac breeding. Price only \$125 delivered. **B. B. BEAVER**, Akron, Mich.

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The Wildwood Jersey Farm. Bulls for sale by Majesty's Oxford Fox 13424 and Emment Lady's Majesty 134034, and out of R. of M. Majesty dams. **ALVIN BALDEN**, Capac, Mich.

LILLIE Farmstead Jerseys. Young bulls ready for L service from R. of M. cows. A few bred heifers and cows. **COLON C. LILLIE**, Coopersville, Mich.

Registered Jersey cattle for sale 7 milch cows, 2 fresh 1 due to calf, 2 two year olds. Two yearlings, 2 1918 spring calves, one 1919 calf. **H. B. DARNELL**, Lake Odessa, Mich.

For Sale Registered Jersey bulls ready for service and bull calves. **SMITH & PARKER**, R. 4, Howell, Mich.

Lakewood Herefords Strong in the blood of that breeds true to type and predominates the leading show and sale rings of the country. A few high class young bulls for sale. Come see, and compare. Farm adjoins town. **Citz**, Phone 29. **E. J. TAYLOR**, Fremont, Mich.

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REPEATERS AND PERFECTIONS. Young stock for sale at all times. 80 head in herd, all ages. Farm 5 miles south of Ionia. Visitors welcome. **JAY HARWOOD**, Ionia, Mich. **CITIZENS TELEPHONE 122-4** Buy a Hereford Sire Improve your Stock

Herefords Polled and Horned blood lines embrace Fairfax, Polled Perfection and Prime Lad 9th breeding. Prices reasonable. **COLE & GARDNER**, Hudson, Mich.

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Both sexes and all ages for sale also horned and polled bulls in service. Governor by Prince Donald by Prime Lad 9th, Militant Farmer by Imported Farmer, Fairfax Farmer by Militant Farmer, Dam by Perfection Fairfax.

ALLEN BROS., Paw Paw, Mich.

Herefords Bob Fairfax 494027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. **EARL O. McCARTY**, Sec'y. H. B. Ass'n. Bad Axe, Mich.

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

BIDWELL STOCK FARM, Box B, Tecumseh, Mich.

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Home of the Mich. Champions. We have just purchased the entire herd of Scotch cattle belonging to the Estate of the late A. D. Flintom, Kansas City, Mo. About Feb. 1st we will offer a choice lot of young bulls for sale.

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

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

Shorthorns Scotch and Scotch Topped cows and heifers, priced right. Come and see them or write **W. B. McQUILLAN**, R. 7, Howell, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Maxwellton and White Hall Sulton by the Oscola Co. Shorthorn Breeders Ass. **JOHN SCHMIDT**, Sec. Reed City, Mich.

Shorthorn Bulls ready for service of the choicest breeding. Write me your wants. **A. A. PATULLO**, R. 4, Deckerville, Mich.

Scotch Shorthorn. A fine lot of young bulls for sale. Phone Pontiac 1213 or Orion Exchange. **John Lessiter & Sons**, R. 1, Clarkston, Mich.

For Sale 2 yr. old Scotch herd bull sired by Valiant 38720, a Lespedeza Farm product. **LAURENCE P. OTTO**, Charlotte, Mich.

Five Shorthorn Bulls ready for service. One herd bull 4 years old. **W. F. BARR**, Aloha, Mich.

Stockers & Feeders For Sale 180 Shorthorn Steers ave. 1055 lbs. 170 Hereford Steers ave. 930 lbs. 2 cars of yearling Herefords ave. 750 lbs. 2 cars of Shorthorn yearlings reds and roans. These steers are dehorned and in good flesh. Wapello Co. Ia. is noted for its good cattle. Write **JOHN CARROW**, R. 3, Ottumwa, Ia.

Milking Shorthorns Clay bred young bulls 3 to 10 months old. **DAVIDSON & HALL**, Tecumseh, Mich.

Rosemary Farms, Williamston, Mich. young bulls ready for service. Shorthorns bred for milk & beef. Herd estab. by Prof. C. H. Burgess, Mich. Agri. College.

Shorthorns Central Mich. Shorthorn Breeders Assn. offer 31 bulls all ages. 17 females for sale. Write **Oscar Skinner**, Sec., Gowen, Mich.

Shorthorn Breeder No stock for sale at present. **CHAS. WARNER, Jr.**, Imlay City, Mich.

Shorthorns 100 head to select from. Write me your wants, price reasonable. **Wm. J. BELL**, Rose City, Mich.

The Kent Co. Shorthorn Breeders have both males and females for sale. Ask about them. **L. H. LEONARD**, Sec., Caledonia, Mich.

Milking Shorthorns Bulls only Clay bred. **O. M. YORK**, Millington, Mich.

Cattle For Sale Stockers & feeders, from 500 to 1,000 lb. Write your wants. **ISAAC SHANSTROM**, Fairfield, Iowa.

WRITE for description and price of a 7 mo. old Grandson of the \$50,000 bull. Also a granddaughter of Korndyke Butter Boy. Bred to freshen Aug. 21, 19. Breeder of reg. stock only. **H. E. Brown**, Breedsville, Mich.

HOGS

Big Growthy Berkshires 3 yearling boars, registered. **W. H. EVERY**, Manchester, Mich.

DUROC OPPORTUNITY

Michigan Breeders and Farmers prefer to buy Duroc Jerseys at private rather than public sale. For the first time in five years we are able to offer as many as 40 bred sow and gilts privately. Same blood lines and bred to some prize winning boars as our sale stock. Prices are in keeping with the individuality and breeding of the offering, send for sale list. If you need a boar we have them.

BROOKWATER FARM,

Ann Arbor, Michigan **HERBERT W. MUMFORD**, owner, **J. BRUCE HENDERSON**, Manager.

DUROC Jersey's—a few extra good fall boars sired by Orion Cherry King Col. 2nd. Bred sows all sold. **W. C. TAYLOR**, Milan, Mich.

Registered Duroc Gilts

Descendants of the leading strains: Cherry King, Defender, King of Col's, The Professor, all bred to Col. Defender the 26 lb. No. 12375, his sire, Pal's Premier Col. T. No. 31021. Dam, Royal Defendress No. 23150, one of the most promising herd boars in Michigan. Prices reasonable. Write for prices and further information. **THE JENNINGS FARMS**, R. 1, Bailey, Mich.

50 DUROC

bred sows and 50 fall pigs. You need a litter by Orion's Fancy King the biggest pig of his age ever at International fat stock show. (Catalog tells all). **NEWTON BARNHART**, St. Johns, Mich.

OAKWOOD FARM

A few choice sows bred for Mar. and April farrow. Also Buff Plymouth Rock Cockerels at \$2.50 each. **RUSH BROS.**, Romeo, Mich.

DUROC--JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

DUROC JERSEYS

Gilts bred for June farrow of the heavy boned type also fall pigs either sex pairs not akin. **F. J. DRODT**, R. 1, Monroe, Mich.

Duroc Jerseys. A few choice gilts bred to Brookwater King Special 111467. (A full brother to Brookwater Lass D. the grand champion sow at the 1918 International). **Carey U. Edmonds**, Hastings, Mich.

Duroc Jersey Sows, Large type, heavy boned, 100 lb. herd boar. **JOS. SCHUELLER**, Weidman, Mich.

FOR Sale Duroc Jerseys of the big boned type fall pigs of either sex and taking orders for spring pigs. **CHAS. BRAY**, Okemos, Mich.

Hampshires Boars at a bargain bred gilts all sold. **JOHN W. SNYDER**, R. 4, St. Johns, Mich.

Hampshire Hogs The International Grand Champion Hog of 1918, both sexes for sale. Spring deliveries booked now. **ELI SPRUNGER & SON**, Saginaw, W. S., Mich.

O. I. C. Bred Gilts All Sold. **H. W. MANN**, Dansville, Mich.

Mammoth Poland Chinas. Choice lot early fall pigs now ready to ship. Double Immune. Inquire **Clyde Weaver**, Ceresco, Mich.

Large type Poland China's bred gilts all sold. Fall pigs of either sex for sale. Sired by 800 lb. yearling. **A. A. FELDKAMP**, Manchester, Mich.

MICH. Champion herd of Big Type P.C. Nothing for sale but fall pigs, orders booked for spring pigs. **E. E. LEONARD**, St. Louis, Mich.

Raise Chester Whites

Like This the original big producers

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

Chesters, March and April pigs in pairs or trios from prize winning stock prices reasonable satisfaction guaranteed. **T. W. ALEXANDER**, Vassar, Mich.

Breed The Best THE WORLD NEEDS LARGE FAT HOGS

Why lose money feeding and feeding scrub hogs? Two of our O. I. C. Hogs Weighed 2806 Pounds.

We are the most extensive breeders and shippers of pure bred hogs in the world. Write today for the true story of the real O. I. C. Hogs. All foreign shipments **U. S. Government Inspected**

We have bred the O. I. C. Hogs since 1883 and have never lost a hog with cholera or any other contagious disease.

WRITE TODAY—FOR FREE BOOK "The Hog from Birth to Sale"

THE L. B. SILVER CO. 196 Heights Temple Bldg. CLEVELAND, OHIO

THE WORLD'S CHAMPION

big type O.I.C.'S. Stock of all ages for sale. Herd headed by Gallows Edd, the World's Champion O. I. C. boar assisted by C. C. Schoolmaster, Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. O. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Orandell's prize hogs, Case City, Michigan.

Shadowland Farm

O. I. C.'s

Bred Gilts 200 to 300 lbs. from prize winning stock. A few fall yearlings and 2 yr. old sows, big type, growthy boars of all ages, guaranteed as breeders. Everything shipped C. O. D. Express paid and registered in buyers name. **J. CARL JEWETT**, Mason, Mich.

O. I. C. and Chester White Swine

Strictly Big Type with QUALITY. I am sold out of everything but fall pigs. These pigs are as good—and I think better than any I ever bred. I am one of the oldest breeders of Big Type in the U. S. **NEWMAN'S STOCK FARM**, R. 1, Marlette, Mich.

O. I. C.'s big type serviceable boars. Yearling sows and gilts bred for spring farrow. **G. P. ANDREWS**, Dansville, Mich.

O. I. C. Boar, 11 months old. Large fall pigs of either sex. **O. J. THOMPSON**, Rockford, Mich.

O. I. C. Gilts bred for summer farrow and a few fall boar pigs any of them good enough to ship. **C. O. D. F. C. BURGESS**, R. 3, Mason, Mich.

O. I. C. Gilts to farrow in March and April. Also CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C.'s 2 last July and 4 last Sept. boars, good growthy fellows. Farm 1/2 mile west of Depot. **OTTO B. SCHULZE**, Nashville, Mich.

FRANCISCO FARMS

SHORTHORNS--POLAND CHINAS Three choice heifers and a few young cows to offer. Also fine good gilts bred for late spring farrow. Prices are attractive. **P. P. POPE**, Mt. Pleasant, Mich.

For 25 Years We have been breeding Big Type Poland China hogs of the most approved blood lines. Our new herd boar "Michigan Buster" is a right good son of the great "Giant Buster", dam "Mou's Miss Queen 2". Some breeding! We are all sold out except a few fall pigs at \$25.00 each. **J. C. BUTLER**, Portland, Mich.

Big Type Poland Chinas

A 400 lb. Aug. 29 yearling and a few 250 lb. Apr. gilts. Quality stuff, registered, and cholera immune. Bred for Mar. and Apr. farrow. **WESLEY HILE**, R. 6, Ionia, Mich.

P.C. bred gilts sold. For sale herd boar prospect 17 mo. old, wgt. 600 lb. with quality, sire Buster Giant, 269593, dam Nemo L. 548940 an 800 lb. sow in flesh. Sire sold for \$1500, priced reasonable. Free delivery from Parma. **W. E. LIVINGSTON**, Parma, Mich.

Big Poland Chinas with quality. For sale, summer and fall gilts, open or bred. **G. A. BAUMGARDNER**, R. 2, Middleville, Mich.

L. S. P. C. a few gilts bred for April & May farrow at bargain to close them out at once. **H. O. SWARTZ**, Schoolcraft, Mich.

Big type P. C. fall boars the big prolific kind, their breeding traces to the best herd in Ill. Iowa & Neb. **C. E. GARNANT**, Eaton Rapids, Mich.

Large Type P. C. boars all sold. Spring gilts and young tried sows, bred for March and April farrow. Free delivery from Augusta. **W. J. Hagelshaw**, Augusta, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain. **A. A. WOOD & SON**, Saline, Mich.

Big Type P. C. Choice bred sows from Iowa's greatest herds, the big bone prolific kind with size and quality. **E. J. MATHEWSON**, Burr Oak, Mich.

Big Type Poland Chinas. Spring boars all sold. Bred gilts ready for shipment. Inspection invited. **L. L. CHAMBERLAIN**, Marcellus, Mich.

P.C. Bred Sows Large style best we ever owned. Satisfaction or no sale. **R. W. MILLS**, Saline, Mich.

HORSES

Pure Bred Belgian Draft Horses

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

Saginaw Valley STOCK FARM

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

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

For Sale Belgian Stallion, if you want to buy a draft stallion you are invited to see this horse and his colts, and our neighbors. **W. J. QUIGLEY**, R. 2, Grass Lake, Mich.

Horses Will Be Horses Soon

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

PALMER BROS., Belding, Mich. **R. R. Orleans**.

One Reg. Clyde Stallion coming 3 years old, 2400 lbs. and out of imported Mare weighing 300 lbs. the mare won first at Michigan State Fair 1916. This colt will make a 2000 lbs. horse. Priced to sell, write or call at once. **WM. L. CRANDELL**, Cass City, Mich.

Stallion for sale Clydesdale Sylvander's Favorite No. (15348) 1823, weight about 1900 lbs. is in good shape guaranteed in every way. **Dan McIntyre**, R. 1, Box 54, Sault Ste. Marie, Mich.

FOR SALE 3 Mule Colts 2 yrs. old. **Mr. FRANK OTT**, R. 2, Box 46A, Wayne, Mich.

PERCHERON MARE

Aged 4 yrs. bred to College Stallion fold this summer. Good mare. **HARRY E. SAIER**, Seedsman, Lansing. 109-111 E. Ottawa St.

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

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

For Sale Black Percheron stallion, foaled 1910, weight 1900, good individual, colts to show. Priced right. Would accept Liberty Bonds or young stock. **J. L. ROCHE & SON**, Pinckney, Mich.

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, March 13.

WHEAT.

The grain markets opened strong this week, due largely to the report that heavy shipments of food stuffs are to be made to central Europe. As a result wheat buying was a little more active, although prices are unchanged. The federal report states that 58.7 per cent of the 1918 wheat crop has been shipped out of the counties where grown, as compared with 51.1 per cent in 1917 and 56.7 per cent in 1916. The recent snow promises to be of considerable aid to the growing crop. One year ago wheat sold on the local market at \$2.17 per bushel. The visible supply decreased the past week 2,690,000 bushels. Present Detroit prices are as follows:

No. 2 red	\$2.30
No. 2 mixed	2.28
No. 2 white	2.28

CORN.

With the announcement that 1,250,000 tons of 1918 crops will be sent to Germany, corn values advanced and remained firm at the higher figures. The government report was also bullish in showing only 884,000,000 bushels of the 1918 crop remained on farms as compared with 1,253,000,000 bu. of the 1917 crop on hand a year ago. The removal of the guarantee on hog prices did not have the depressing effect on corn that was anticipated. A year ago corn sold on our local market at 1.78 for No. 2. The United States visible supply decreased 472,000 bushels during the week. Present Detroit prices are:

No. 3 corn	\$1.45
No. 3 yellow	1.48
No. 4 yellow	1.45
No. 5 yellow	1.42
No. 6 yellow	1.40
No. 3 white	1.47

The Chicago market was active this week and higher as follows: No. 3 yellow \$1.43@1.45; No. 4 yellow \$1.40@1.43; May corn \$1.40%; July \$1.35%.

OATS.

Although buying has not become general, conditions surrounding the general grain trade have been reflected in higher prices being quoted for oats. While buying is in moderate volume, deliveries from farms are also small and the United States visible supply for the week shows a decrease of 211,000 bushels. A year ago the Detroit Board of Trade quoted standard oats at 99½¢ per bushel. Present Detroit prices are:

Standard65
No. 3 white64½
No. 4 white63½

RYE.

Another advance comes in rye prices due to the active buying of exporters. At Detroit cash No. 2 rye is now selling at \$1.46 per bushel.

BARLEY.

A better demand brings about higher prices for this grain. Large quantities of barley are being substituted for mill feed. Local quotations are: Cash No. 3 \$1.90; No. 4 \$1.85 per cwt.

BEANS.

This market continues dull and weak. Prices at local country elevators did not respond generally to the recent sale of 350 cars to the United States Grain Corporation at \$9.25 per bushel at Michigan country points. It is noted from the Bureau of Markets reports that 415 tons of foreign beans were received in Seattle last Friday. The Detroit Board of Trade quotes immediate and prompt shipment at \$7.00 per cwt. At Grand Rapids mediums and pea beans are quoted at \$6@6.50, mostly at \$6. In New York Michigan pea beans of best grades are quoted at \$7@7.50, and the best red kidneys at \$11.50. In Boston Michigan pea beans, choice, are jobbing at \$7.50@7.75, and the same price obtains at Philadelphia. Chicago trade rules firm with an active demand for prime stock. Medium grades of pea beans are quoted at \$7@7.35; fancy stock sharply higher.

FEEDS.

Prices are steady at last week's reduced quotations as follows: Bran \$43; standard middlings \$44; fine middlings \$47; coarse corn meal 57;

cracked corn \$58; chopped feed \$49 per ton in 100-lb. sacks to jobbers.

SEEDS.

Higher as follows: Prime red clover 26.25; March \$26; alsike \$19.75; timothy \$5.

HAY.

The hay market is steady with supplies limited. No. 1 timothy \$27.50@28; standard timothy \$26.50@27; No. 2 timothy \$25.50@26; No. 1 clover at \$24.50@25.

Pittsburgh.—This market is unchanged with all grades of hay arriving in small quantities. Quotations are: No. 1 timothy \$30@30.50; No. 2 timothy at \$27.50@28.50; No. 1 light mixed \$28@29; No. 1 clover mixed \$28.50@29; No. 1 clover \$28@28.50.

POTATOES.

Although prices are changed very little, some improvement is noted in the demand and movement. At Detroit Michigan stock U. S. grade No. 1 sold Monday at \$2.60 per 150-lb. sack. Growers up state are receiving at warehouses from \$1@1.15 per cwt. for the same grade. At Cleveland this grade of Michigan stock is selling at \$1.85 per cwt; at Buffalo \$1.75@1.85; at Philadelphia \$1.70@1.80; at New York \$2.75@2.85 per 150-lb. sack; at Pittsburgh \$2.65@2.75; at Columbus \$2.75. The Chicago trade is steady at \$1.60@1.75 for the best U. S. No. 1 stock.

BUTTER.

Prices generally are a fraction higher than those obtaining a week ago. Receipts are about normal and demand fairly good. At Detroit fresh creameries are now jobbing at 57@57½¢. At Chicago creamery stock ranges at 48@58¢; at New York 57@61½¢, and at Philadelphia western creamery extra grade 61¢.

EGGS.

Eggs are selling at lower levels with fresh firsts in new cases at 39¢, and extra firsts in new cases 39½¢. Chicago trade is paying 38@38½¢ for fresh firsts and 37½@38¢ for ordinary firsts. In New York the market is unsettled with fresh hextras at 43@43½¢; regular packed 42@42½¢; firsts 40½@41½¢. In Philadelphia market is lower with western extra firsts and firsts at \$12@12.15 per case.

POULTRY.

Trade in poultry continues steady at firm prices and offerings of moderately small volume. Quotations for live are: No. 1 springs 32@33¢; small springs 30@31¢; hens 34@35¢; small hens at 31@32¢; roosters 23@24¢; geese at 24@25¢; ducks 36@37¢; turkeys 35@36¢.

WOOL.

While the average price paid for wools at a recent sale has indicated some weakness it should be noted that for certain grades, including the fleece wools, the mills are anxious for and are competing to get the stock. This was very apparent at the recent government auctions held in Boston and Philadelphia. Another series of sales is on in Boston this week where 2,700,000 pounds of domestic fleece wool is to be offered on Friday. Other government sale dates are: Philadelphia on March 18-21, and Boston on March 25-29. The attitude of buyers at these sales should give a fair idea on how the trade looks at the near future market for wools. Read the report of the Columbus meeting in another column of this issue. At that meeting it was shown that the world stocks of wool are short. Growers should not misinterpret the announcement of the English War Board that "issue wool prices" are being reduced on and after April 1, since these reductions are made possible by lower transportation and insurance rates.

DETROIT CITY MARKET.

Business is small with an active demand for apples, potatoes, eggs, poultry and onions. Apple prices range from \$2@3.50 per bushel; potatoes at 50¢@51¢; cabbage at \$1.25@1.75; navy beans 6@7¢ per pound; poultry 32@34¢; dressed pork 21@22¢; country butter 52¢.

THE NEW YORK PRODUCE MARKET.

Butter.—The conditions in the market have been abnormal during the week. The harbor boatmen went on their second strike of the year on Tuesday, which continued until today, with the result that butter shipments have been held up over on the Jersey side. It has been possible to get some butter

into town over the New York Central Lines on the east side of the river but there are large accumulations across the river. Indications are that the market would have been strong had there been no strike. However, the strike is largely responsible for the gain of four and a half cents per pound in the price of butter which has taken place since Monday. Buying during the week has been conservative on part of the retailers and there has been an active export demand. Estimates place the amount of purchases for export trade during the past two weeks at 20,000 packages, most of which has gone to the Scandinavian countries. The established quotations of Friday are as follows: Extras 59½@60¢; higher scoring than extras, 60½@61¢; firsts 56@58½¢; seconds 51@55½¢.

Cheese.—The cheese market during the past week has been firmer than for some time. There is an active demand on the part of the distributing trade for both held and new cheese and there has been some activity among exporters. It is estimated that about 5,500 boxes have been purchased and will be shipped shortly to various European countries. Receipts are slightly higher although there is no appreciable increase in the make of New York cheese. Held cheese, while in strong demand, is in scanty supply. The best grades are selling at 36@36½¢. Medium grades sell readily at 35@35½¢. High-grade current make cheese, colored, is selling at 32¢ readily and in some instances a fraction of a cent higher is asked.

Eggs.—Egg receipts have fallen off appreciably because of two influencing factors, viz., stormy weather in the west, and the strike on the river. The effect on the market has not been as great as might be under normal conditions. However, there were large accumulations which have been drawn on during the temporary shortage. There has been a gain in price of about three cents during the week, but the market is closing weak and unsettled. Firsts are selling at 44½@46¢; extra firsts 46½@47¢; extras 47½@48¢ per dozen.

GRAIN RESERVES ON FARMS ARE MUCH BELOW AVERAGE.

The official estimate of grain on farms, as of March 1, shows a supply much below the average. Out of the corn crop of 1918, of which 2,129,700,000 bushels were merchantable, and a carry-over of 114,000,000 bushels, only 884,476,000 remain in farmers' hands. This is about thirty per cent less than last year. The drought of last summer, which practically eliminated Kansas from the ranks of corn producers, and the enormous demand for meat, particularly pork and pork products, account for most of this heavy consumption. That consumptive demand has been heavy is apparent from the visible supply of 4,483,000 bushels. Only once since 1881 has the visible supply been smaller than this, and the average for the past five years is over 21,000,000 bushels. The winter run of hogs is not yet over, and there is every assurance that feeding demand will take all the corn there is to spare. Fortunately there is a good supply of oats, both on the farms and in second hands, the visible supply being twice that of last year. To a certain extent this grain will supplement corn.

The official fixed price for wheat has had a stimulating effect on the movement from the farms, there being no incentive to the farmers to hold it, and many reasons in favor of early marketing. The farm reserve is 129,258,000 bushels. But the visible supply is 118,219,000 bushels, compared with less than 10,000,000 last year. There is now approximately 250,000,000 bushels of wheat in first and second hands, to last us until July 1, besides the "invisible" supply, and stocks of flour. Domestic consumption in the four months to the next harvest would be about 150,000,000 bushels and seed 30,000,000 bushels. A month ago the head of the Grain Corporation testified that the Food Administration was committed to shipment of 165,000,000 bushels of wheat and flour as wheat to Europe by the end of June. Total requirements, therefore, if filled in full, will leave little or no reserve of old wheat. This fact, of course, even with the price officially fixed, has its bearings upon the other cereals.

Live Stock Market Service

Reports for Thursday, March 13th

DETROIT

Cattle.

Receipts 2,573. Canners steady; all others 25@35¢ lower than last week's close.

Best heavy steers	\$14.00@15.00
Best handy wt bu strs	12.00@13.50
Mixed steers and heifers	10.50@11.50
Handy light butchers	9.50@10.50
Light butchers	8.00@ 9.00
Butcher cows	8.00@ 9.00
Cutters	7.25@ 7.50
Canners	6.50@ 7.00
Best heavy bulls	10.00@11.00
Bologna bulls	8.50@ 9.00
Stock bulls	7.50@ 8.50
Feeders	9.00@11.00
Stockers	8.00@10.00
Milkers and springers	65@ 125

Veal Calves.

Receipts 1,790. Good grades steady; common dull.

Best	\$ 19.00
Others	\$10.00@16.00

Sheep and Lambs.

Receipts 3,721. Medium and half-fat lambs dull; others steady.

Best lambs	\$ 19.00
Fair lambs	17.50@18.00
Light to common lambs	14.00@15.00
Fair to good sheep	12.00@13.00
Culls	7.00@ 9.00

Hogs.

Receipts 5,747. Market steady.

Pigs	\$ 18.00
Mixed	\$19.35@19.50

CHICAGO.

Cattle.

Receipts 9,000. Beef steers and she stuff is 15@25¢ higher; calves, bulls and feeders steady to strong. Good to prime choice steers \$16.75@20.25; common to medium butchers \$10.65@

16.75; heifers \$7.50@15.75; cows \$7.25@15.50; bologna bulls \$8.50@13.25; canners and cutters \$6@7.25; stockers and feeders, good \$11.25@15.25; do medium \$8.25@11.25.

Hogs.

Receipts 25,000; held over 7,735. The market is mostly 25¢ lower than yesterday's average. Tops 19.80; bulk of sales \$19.20@19.70; heavy \$19.60@19.80; mixed and light \$19.40@19.75; packers' hogs \$18.25@19; medium and heavy \$19@19.35; light bacon hogs at \$18.85@19.50; pigs, good to choice at \$17@18.35; roughs \$17.25@18.

Sheep and Lambs.

Receipts 14,000. Opening steady to strong; best lambs higher. Choice to prime lambs \$19.75@19.90; medium and good lambs \$19.50@19.75; culls \$15.25@17; medium good and choice feeders \$16.75@18; choice yearlings at \$18@18.25; medium and good yearlings \$14.85@18; wethers, medium and good \$15.65@15.25.

BUFFALO.

Cattle.

The selling of cattle has been draggy. Prime steers \$17.50@18.50; shipping steers \$16@17; butchers \$10@16; yearlings \$10@17; heifers \$10@13.75; cows \$5@12; bulls \$7.50@12; stockers and feeders \$5@11; fresh cows and springers \$65@150.

Calves.

Market is easy at \$5@20.

Hogs.

Hog prices are higher and firm. Pigs are now bringing \$18.75@19; other grades \$20@20.25.

Sheep and Lambs.

Sheep and lamb market is strong; lambs \$12@20; yearlings \$11@18; wethers \$15@16; ewes \$5@14; mixed sheep \$14@14.50.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during February suffered from any cause?" 193 correspondents in the state answer "yes" and 146 "no;" in the southern counties 123 answer "yes" and 69 "no;" in the central counties 49 answer "yes" and 29 "no;" in the northern counties 19 answer "yes" and 37 "no" and in the upper peninsula two answer "yes" and 11 "no." Snow protected wheat in the state six days, in the southern counties two, in the central counties four, in the northern counties 15 and in the upper peninsula 24 days, during the month of February.

The average depth of snow on February 15 in the state was 1.00, in the southern counties 0.15, in the central counties 0.27 of an inch, in the northern counties 2.86 and in the upper peninsula 7.69 inches. On February 28 the average depth of snow in the state was 2.02, in the northern counties 5.08, in the upper peninsula 11.43 inches, in the southern counties 0.52 and in the central counties 0.97 of an inch.

The total number of bushels of wheat marketed by farmers in February at 83 flouring mills is 61,751 and at 54 elevators and to grain dealers 41,562 or a total of 103,313 bushels. Of this amount 83,807 bushels were marketed in the southern four tiers of counties, 14,961 in the central counties and 4,545 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the seven months, August-February is 4,400,000. One hundred and five mills, elevators and grain dealers report no wheat purchased from farmers in February.

The average condition of live stock in the state is reported as follows. Horses and swine 95; cattle 94, and sheep 97.

Grain and seed threshed in Michigan for the season of 1918-19 up to and including February 22, 1919, per returns of threshermen is as follows:

	Yield per Acre.		
	Acres.	Bush.	Bush.
Winter wh't.	653,001	9,169,230	14.04
Spring wh't.	43,198	777,710	18.00
Rye	475,400	6,810,834	14.33
Oats	1,580,918	62,245,563	39.37
Speltz	9,412	257,807	27.39
Barley	279,690	8,359,459	29.89
Buckwheat ..	41,663	376,306	9.03
Peas	20,896	301,268	14.42
Seeds:			
Timothy ..	716	1,806	2.52
Clover ...	74,452	73,391	0.99
Beans	353,600	3,288,314	9.30

ENGLAND REDUCES WOOL SEVEN AND ONE-HALF PER CENT.

The wool section of the English War Office announces that owing to the reduction of various charges, such as freight and war risks, wool tops held by the British government will be issued to the trade of this country at prices which show an average reduction of seven and one-half per cent from current rates.

The new scale will operate from April 1. The issue prices are: Superior 54c wool, 65d; 56s, 49d—in both cases a reduction of 4d for clean scoured per pound on the average; 64s tops will be issued at 71d, against 75d; 56s, 54d against 58d; 50c carded, 47d against 51d; 46c carded, 38½d against 42d; 40c prepared, 35½d against 39d.

It is officially announced that the London wool auctions will open April 2 and will last eight days. Sixty thousand bales of combing and 20,000 bales of clothing wools will be offered. Auctions will be held in London every month except August and there will also be a one-day sale in Liverpool monthly.

WEST STATE FRUIT MEN TO FORM MARKET AGENCY.

Western Michigan Fruit Packers' Association convened at Hartford on Tuesday, March 11, to discuss establishment of a central buying and selling agency for all fruit and vegetable producers in western and southwestern Michigan. Potato grower associations in the northern part of the state cooperated. The movement was inaugurated by the grape growers of Van Buren county. Twelve producers' associations in this section already have voted to share in the new organization.

When planting an orchard, we must remember that it is a permanent investment and no pains in the preparation of the land or reasonable expense of the purchase of good trees, should be spared.

L. L. COGGSHALL
Maple Glen Farm
LOCKE, N. Y.
Successor to CORYDON PECK, Deceased

Chapin & Co., Chicago, Ill.
Gentlemen:—
I have tried all kinds of grain rations for my Guernsey herd, including those suggested by Cornell and the best known breeders in the country. Every time I come back to Unicorn better satisfied than ever. I am now through experimenting with feed mixtures of others who think they can beat it either for economy, yield or condition of herd, because I know that they don't know what they are talking about. If they would all stop fussing around with half baked theories and give Unicorn a good honest and unprejudiced feeding test for 90 days, I know that they would agree with my statements and that it would show them how to save money and time, and their herds would do better in yield and condition, with less cost for grain than ever before. I speak from eight years experience with Unicorn. I have also tried all the other rations said to be just as good, and Unicorn for me every time.

Yours truly,
L. L. Coggs

Every feeder of Unicorn says as much as Mr. Coggs shall writes. They all like Unicorn.
Send a 3c stamp for our new Dairyman's Manual which tells you how to make bigger profits.

CHAPIN & CO.
Dept. M, Chicago

FOR SALE
USED MACHINERY

5-40 Avery tractor; 8-16 Avery tractor; 8-16 Bull tractor; 12-24 Waterloo Boy tractor; 25 H. P. I. H. C. tractor; 25-50 Avery tractor; 30-40 Huber tractor; 28 in., 30 in., 32 in. used grain threshers. Ask for our new catalog of GREYHOUND threshers and our complete used machinery list.

THE BANTING MANUFACTURING CO.
114 Superior Street
TOLEDO, OHIO.

CULOTTA & JULL
Eastern Market, Detroit, Mich.

We need your shipments of Poultry, Veal, Dressed Hogs, Live Roasting Pigs, Eggs, Live Rabbits and Game. Highest prices possible obtained on arrival. We can handle your Potatoes, Onions, Apples, Cabbage and root crops, carlots or less. Your shipments will be appreciated and have our best care and attention, and you don't have to wait for your money. Reference Peninsula State Bank.

Mr. POULTRY FARMER:

We make a specialty of White Henney Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henney Whites—We remit same day shipments arrive. Ship Often—Ship by Express

GEO. R. ELDRIDGE CO.
494-18th Street, Detroit, Mich.

Remember! We guarantee you satisfaction with every shipment.

Holmes, Stowe Co., 445 Riopelle St.

Commission Merchants. Dressed Beef, Hogs, calves, Poultry, Live & Dressed, Provisions, etc. Correspondence Solicited. Ref. Wayne County & Home Savings Bank, Bradstreet, Detroit, Mich. Cad. 2878.

HAY Ship To The Old Reliable House
Daniel McCaffrey's Sons,
623-625 Wabash Bldg., Pittsburgh, Pa.

Wanted: Michigan 90 to 125 pound healthy pigs in car lots. We buy them all year. Write Danville Stock Hog Co., Danville, Illinois.

POULTRY

Chicks That Live \$15 per 100 S. O. W. Leghorns
Send for catalogue. MY SPECIALTY
FARM, R. 1, Grand Rapids, Mich.

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

Choice Buff Rocks, Eggs \$2.00 for 15.
DAVID BRANYAN, R. 3, Grant, Mich.

Cockerels, Dark Red Single Comb R. I. Red
INTERLAKES FARM, Box 30, Lawrence, Mich.

English Barron S. C. White Leghorn
chicks at \$11.00 per 100; \$65 per 500 immediate special delivery. 6,000 chicks each week. Guarantee safe delivery. Every full count of lively sturdy quality chicks that will mature into most profitable and persistent layers. Hatching eggs \$6 per 100. Write us your wants and send for valuable catalogue giving rearing & feeding methods.
DEVRIES LEGHORN FARM, Zeeland, Mich.

Eggs For Hatching from prize winning strains of Barred Plymouth Rocks at show at Chelsea I won 1 cock, 1 hen, 1 pullet, 3 chl. Eggs 2-50 per setting. I have a few chls. left \$4 and \$5, good birds.
GEORGE H. CAMPBELL, R. 5, Ypsilanti, Mich.

Eggs for Hatching, From pure bred White Rocks, Fishels Strain and Mammoth White Pekin Ducks. Chas. Kietzlen, Bath, Mich.

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

Fenton Chicken Hatchery, Fenton, Mich. F. M. Milliken, Proprietor. Thoroughbred Day Old Chicks, 25 for \$5.50; 50 for \$10.00; 100 for \$18.00; Single Comb W. Leghorns Tom Barron English Strain, White Buff and Barred Plymouth Rocks, Buff Orpingtons, Anconas, W. Wyandottes, R. I. Reds, B. Leghorns.

Fowler's Buff Rocks Cockerels \$4 up. Utility eggs for hatching \$2.00 for 15.
R. B. FOWLER, Hartford, Mich.

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

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

Laybilt S. C. W. Leghorn

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

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

R. C. Br. Leghorn eggs \$1.50 per 15, \$3 per 100. Pekin duck, \$1.50 for 8. W. Chinese goose eggs 40 cents each.
Mrs. CLAUDIA BETTS, Hillsdale, Mich.

S. C. Brown Leghorns, Heavy laying strain. Farm range, Eggs 15 \$1.25; 30 \$2.25; 45 \$3; 100 \$6. Post paid.
Floyd Robertson, R. 1, Lexington, Ind.

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

Silver, Golden and White Wyandottes, Plenty of good Golden and White cockerels \$4, \$5. Few Silver pullets \$3 each. C. W. Browning, Portland, Mich.

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

White Wyandottes Free range flock 80 Duxton's Cockerels, 15 eggs by Parcel Post \$2.00 by ex. \$3 per 100.
VERN MOORE, Hartford, Mich.

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

White Rock eggs for hatching, \$5.00 per 100 eggs, \$1.50 per 15. A few cockerels left. Write to Mrs. ELSTIE M. ROBINSON, Petersburg, Mich.

White Wyandottes Cockerels for sale \$3.00 to \$4.00 each.
B. L. SANDERSON, R. 2, Applegate, Mich.

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

