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## Developing Improved Crop Varieties

*The Best Varieties Insure More Profitable Crop Production—By Prof. J. F. Cox*

THE business of growing crops must pay a sufficiently profitable return to the farmer and his family to provide those essentials which make for a contented farm home life. It is equally essential to the welfare of a city and country people that the farms in Michigan be adequately farmed by a stable and contented farm population.

The members of the Farm Crops Department of the Michigan Agricultural College have considered that the devel-

such as the development and distribution of high-yielding varieties, the introduction of new strains, safeguarding the seed supply, seed treatments to prevent loss by diseases and insects, growing crops in proper rotation, and the maintenance of fertility.

### Developing High-yielding Varieties.

The plant breeding work of the Michigan Agricultural College has been maintained on an extensive scale during the past fifteen years. This work includes the testing of varieties grown throughout the state and of new varieties, and the development of improved higher-yielding varieties through selection and hybridization. During the past ten years the work of Plant Breeder F. A. Spragg has contributed the following varieties to Michigan agriculture:

Worthy oats, Alexander oats, Rosen rye, Red Rock wheat, American Banner wheat, Michigan Two-row barley, Michigan Black Barless barley, and Robust beans.

The varieties developed by the plant breeder are substantially increased on the experiment station farm for rapid distribution throughout the state. In addition to varieties developed at M. A. C., new crops, such as the new annual white sweet clover, are brought into the state and rapidly increased for the benefit of Michigan farmers.

The work in testing varieties and in selection is not confined entirely to the plats on the experiment station at East Lansing. Work along similar lines is now well under way at the Chatham sub-station on the upper peninsula, with a trained crops specialist in charge. In addition, cooperative experiments are conducted with county agricultural agents, farm bureaus, the



Students at M. A. C. Studying Results of Ear-row Selection Work with Corn.

Pennsylvania and D. S. S. & A. Railroads, agricultural departments, and with individual farmers. The over-state variety test work includes extensive variety tests of local and improved varieties of corn, wheat, oats, barley, soybeans, alfalfa and other crops.

### Corn Variety Tests.

Numerous local corn variety tests, covering a period of the past five years enabled the crops department to pick out the leading corn varieties for various Michigan sections in accordance with distribution. The accompanying diagram calls attention to the highest yield and best adapted varieties of each section. The adoption of these leading varieties will tend toward community standardization, which will alone markedly increase the returns from the Michigan corn crop.

### Sectional Wheat Variety Tests.

Thirty wheat variety tests, well distributed throughout Michigan, conducted

ed during the past two years, have proven the outstanding excellence of the following varieties:

Red Rock and Egyptian of the red wheats, and American Banner of the white wheats.

On the more fertile and better drained soils, the Red Rock and the Egyptian are best adapted. On the lighter soils, and those which are somewhat poorly drained, white wheats, such as the American Banner and Dawson's Golden Chaff give the highest yields.

### Oats Variety Tests.

The forty-eight variety tests with oats show the Wolverine, Worthy, College Success, and College Wonder to be outstanding. Other varieties of excellence are the Johnson in southern Michigan, the Strube in the Saginaw Valley, and the White Bonanza, New Victory, and Swedish Select over an extensive territory. The stiff-strawed Worthy stands up best on heavy soils where ordinary oats lodge. The Wolverine may be adopted as the highest yielding variety over the widest territory.

### Variety Tests with Barley.

Barley variety tests show the Wisconsin Pedigree to be in the lead among the six-row types. Of the two-row barley Michigan Two-row is the highest yielder. The Michigan Black Barless barley, a smooth awn type, outyields others during adverse years and is a high yielder in favorable seasons.

### Rye Improvement Work.

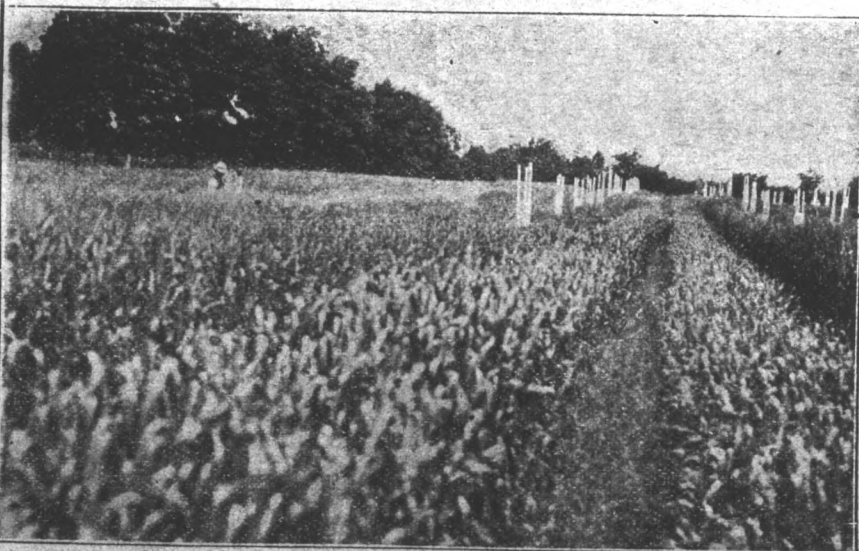
The Rosen rye, released from the Michigan Agricultural College in 1912, has maintained its superiority over other varieties. The field inspection system of the Michigan Crop Improvement Association has kept up its quality. Professor Spragg is engaged in strain selection work with Rosen rye (Continued on page 166).



Prof. Spragg Hybridizing Strains of Wheat.

opment of methods or contribution of varieties through the use of which crop production could be placed on a more profitable and economic basis for the individual farmer, would directly accomplish the great object of the people of the state in maintaining this work at the Michigan Agricultural College. It is not through the encouragement of the production of one crop at the expense of others, or by encouraging the increased production of any crop to the point of lessening returns to the farmer, that the state can best be served. On the other hand, methods which increase yields per acre, without proportionate increase in cost, are of direct advantage to the individual farmer, and by stabilizing production, to the consumer of farm crops products.

It is the object of this series of articles to present some of the methods developed and fostered by the Michigan Agricultural College, which are of proven worth in accomplishing more efficient and economic crop production,



Small Grain Breeding Plats. Rye Cross Pollinates and Plants Must be Carefully Isolated in Order to Establish Pure Strains.



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DETROIT, FEBRUARY 5, 1921

## CURRENT COMMENT

### National Tractor Show

THE Sixth Annual National Tractor Show, which will be held at Columbus, Ohio, February 7-12, inclusive, will hold

much of interest to a large number of Michigan farmers. In addition to the opportunity afforded to study and compare all of the leading makes of tractors, the daily programs from February 8-11 inclusive have been fittingly advertised as "A College Course in Tractor Farming," including as it does lectures on a wide range of subjects relating to the use and care of the tractor by representatives of numerous agricultural colleges, including M. A. C., as well as experience talks and discussions by practical farmers.

That the progressive farmers of Michigan are deeply interested in the possibilities and economics of tractor farming is fully proven by the large number who have purchased tractors and are using them on their farms. When the Michigan Farmer made its first tractor investigation in 1917 less than one per cent of the farmers of the state had made a practical trial of the tractor. An investigation made in 1920 indicated the ownership of 23,350 tractors on Michigan farms, which means that approximately twelve per cent of the farmers of the state now own tractors.

The fact that such a large percentage of the farmers of the state have purchased tractors and in most cases special tractor implements for use with them, during the past three years, is ample proof of the increasing popularity of the tractor on Michigan farms as well as a demonstration of the readiness of Michigan farmers to invest in power equipment of this type as rapidly as they become convinced of its practicability under their special conditions.

And it is in this relation that the tractor show is designed to function. The best known tractor authorities in the country have been engaged to present the best and most authentic information on tractor farming as applied to varying farm conditions, thus giving the farmer who attends exceptional opportunities to determine whether a tractor would prove a profitable investment under his conditions.

Unquestionably the most important factor in tractor economics is the fact that tractor power facilitates the rapid accomplishment of the seasonal preparation for planting the various farm crops, thus extending the possible scope of successful operations on the farm. Every farmer appreciates this fact, but many are in doubt as to the economic practicability of the tractor under their particular conditions. The

tractor show program and exhibits will furnish all who attend much reliable information on this point—information which will far outweigh in value the cost of attending the show to any progressive farmer who is weighing this proposition.

### Training Future Leaders

AMBITION, that resolution of youth to be worthy and to live a useful life has three birth-places—the home, the school and the church. Of these the school is by no means least in importance, and because of the fact that much of the inspiration to undertake and to accomplish has its fountain in our great school system, every citizen, and especially every parent, should watch with much solicitude the proper development of our educational institutions.

The entire school system of the state and nation is now facing a critical period. Thoughtful persons are frequently asking whether or not the schools will be able to meet the demands of the coming decades. In the years immediately ahead the need for capable and aggressive leadership will be increasingly urgent and it will fall very largely to these educational institutions to develop that leadership. In the past the masters of affairs have been chosen very largely from the field of action, but with the extension of specialization this source of leadership is becoming less and less fruitful and society is depending more and more upon those trained in our schools.

From the standpoint of our youth the situation is encouraging. One great educator remarked last week that he had never seen so many serious-minded young men and women coming to the halls of learning to prepare themselves for service. But with this fine response on the part of the youth of the land and the greatly enlarged demand for their talents, it is now apparent that the facilities for training are inadequate. In normal times the handicaps were aplenty but with the disturbance of teaching forces and the cessation of building and repair work during the war, the difficulties have been multiplied manifold. One has only to visit any of the state's educational institutions to have this fact thoroughly impressed upon his mind.

Certainly this is the time for economy, but to what extent shall we mortgage our future civilization to bridge the present situation?

### Farmers Pay the Freight

ONE of the big problems now confronting farmers in many parts of the country is the advance in freight rates which practically prohibits the shipment of farm products to many markets which formerly took care of their surplus commodities. The farmers of many irrigated sections and those who produce bulky crops are feeling the effects of these rates more seriously than those who feed live stock and produce products of higher market value per pound. On the other hand, farmers who depend upon the purchase of certain raw materials that enter into the manufacture of their finished products are feeling the effects of higher freight rates through the increased cost of production of their products.

The farmer more than any other class of business men or manufacturers is feeling the blighting effects of these new freight rates. As a class he ships more freight than any other, and to a large extent the freight rate is the deciding factor in determining the markets to which he can sell his products at a profit. It does not matter particularly to the jobber, the retailer or the manufacturer whether freight rates are high or low so long as his

competitors must pay similar rates. He can simply play safe by passing the increase on to the consumer. That is why there was no organized effort on their part to fight the increased rates. They figured that the higher rates would make more business for the railroads, which in turn would add to the general prosperity of the country, and they were willing to help the roads along. But farmers are beginning to realize that it does matter a great deal to them when foreign food products can be landed in seaport markets for less cost than they can be hauled by rail from western farms to the same markets.

When corn and wheat were selling for two and three dollars a bushel the farmers figured that the percentage required to pay the freight charges was not unreasonable, but now with their products selling from eighty to one hundred per cent lower than they were one year ago, and no reduction in the freight charges, they are beginning to look for some form of relief to stabilize their markets.

Diagnosing a case is one thing; prescribing an effective remedy is another. In this case the diagnosis is simple and irrefutable; the logical remedy is a reduction in the cost of putting farm products on the markets. But how? So long as the railroads are paying their present scale of wages, thereby propagating rather than curtailing the evil, no such rate reduction is possible. The problem is a serious one from the standpoint of the farmer, for by restricting his markets he is in danger of losing them to competitors from abroad, and as a result both the farmer and the railroads are sure to suffer. Obviously, if farming is to be made to pay living profits, a reasonable degree of stability must be ensured. The present freight rate situation is not conducive to such stability.

### Protecting Cut-Over Settlers

ONE of the most satisfactory plans ever thought out for dealing with our cut-over land problem is being worked out at the Tri-State Development Congress, now in session at St. Paul. According to press dispatches from that city the congress has already emerged from a temporary organization and stepped into the lime-light as a full-fledged organization to obtain for Michigan, Wisconsin and Minnesota the same sort of service for their cut-over lands as other states have for their irrigated and swamp lands.

A definite plan of action has been mapped out which consists of a national campaign to make use of more than fifty million acres of land in these three states. The organization is to be headed by an executive committee to be made up of nine men—three from each state. The first two members from each state are to be the state commissioner of agriculture and the dean of the state agricultural college, and the third member is to be chosen by these two. This links up the public functioning powers of the three states in such a manner as to guarantee efficiency and give the public confidence, which would be impossible with a political organization in charge of the project.

Classification of all the lands and topographical surveys of the counties are being urged as being the basis for all the work to be done in the future. This means that every county in the three states taking part in the project will have an analysis made of the soil, which will be permanently recorded on maps in order that farmers or prospective settlers may know just what crops are adapted to certain types of soil, and to determine more accurately the real value of the farms for different types of farming. This will put the sale of land in these counties on a more healthy basis and prevent many

innocent buyers from being fleeced out of their savings by unscrupulous land companies and real estate sharks.

It is hoped by those who have started the project that each state will supervise the colonization activities of real estate promoters and in some way aid in a uniform extension of rural credits to farmers in these districts. Some of the other important recommendations likely to be made by the congress include: Internal drainage on every tract of land sold by a colonization company and at least one crop harvested before the tract is sold to a settler. Approval of the principles underlying the Kenyon bill now before congress, which permits the extension of the powers of the Mississippi River Commission as far north as St. Paul. The cooperative use of all agencies in counties or other territorial units in the clearing of land. Agricultural advice to be furnished by some central state agency to intending purchasers to protect their interests. Some kind of a sound forestry policy providing for the prevention of fires, reforestation of certain areas and aid to farmers in their forestry work and the substitution of a stumpage tax in sections where taxable property is limited by forestry programs. The development of the tourist business through the location of camps and facilities for access to beauty spots. The hearty support of the great lakes tidewater project.

Such an ambitious program will undoubtedly have many critics, and some of the ideas expressed may not be entirely free from certain weak points, but we believe that as a whole the idea of the three states cooperating along definite lines is just what is needed to solve the perplexing cut-over land problem. And that the sooner it is settled the better for the agricultural interests of the three states interested in the project.

## News of the Week

Wednesday, January 26.

MINE operators refuse to grant to miners' representatives the readjustment in wage scales which they have been asking for since October. Senator Calder, of New York, presents a bill in which the taxes on coal are sufficiently high that they will drive the coal direct from the mines to the consumer. The supreme council of the allies decided to call a conference with representatives of Turkey and Greece in London at an early date to settle the Near East question.

Thursday, January 27.

JUDGE IRA B. JAYNE, of the Wayne county circuit bench, states that he will not be a candidate for nomination to the state supreme bench at the coming election. Six men who endeavored to catch Grover Bergdoll, American draft dodger, were arrested in Berlin. It is stated that the men were members of the American army with headquarters at Coblenz.

Friday, January 28.

POISONING attributed to eating spoiled food caused the deaths of Elizabeth and Juliana Meyer, aged eight and two years, of Grand Rapids. The directors of the D. & C. lines have announced that they will discontinue the Detroit & Mackinac service the coming season. Mrs. Gladys Withereil, wife of a prominent citizen of Los Angeles, Calif., is kidnapped and held for ransom.

Saturday, January 29.

THE Fordney tariff bill now before congress does not seem to be making much progress. The United States House of Representatives voted down a proposal to pave the way for the appointment of an ambassador to Russia. Governor Groesbeck announces the appointment of Leland W. Carr to be circuit judge of Ingham county, succeeding Judge Howard Wiest, appointed to the supreme court.

Sunday, January 30.

THE German reparations plan, as drafted by the special committee of the supreme council of the allies, was signed by council members; the plan calls for the payment by Germany of 226,000,000,000 gold marks in forty-two annual installments. Currency to (Continued on page 172).



# The Legal Powers of Farmers

## Are Farmers Immune from Anti-Trust Laws?

By J. N. McBride

THE legal power of agriculture to interpret supply and demand, or if one chooses to say fix prices, is without question, provided always, that this power is used with reason and is not extortionate.

When congress passed the Sherman anti-trust laws and most state legislatures followed along the same lines, the United States Supreme Court found a strange absurdity in its application and was compelled to find a way out. This was the famous rule of reason wisely read into the law by Justice White's majority decision of the court. The equality of all persons before the law was fundamental in English and American jurisprudence. Following the letter of the Sherman anti-trust laws any two humble farmers who each owned one cow and who met and asked their agreed price for milk of a large corporation with millions of capital and thousands of stockholders were guilty of forming a trust and were in restraint of trade. The comparison of these two absurdly disproportionate powers in controversy and making the weaker one the criminal, was so contrary to justice as to be unthinkable. It was so plainly a perversion of equality before the law that the thousand as a single legal entity in a corporation could do the very thing that two natural persons could not, that there was no effort made to apply the law except where the units in controversy were nearly equal.

In the same way the various state laws were not enforced and were largely obsolete for quite similar reasons. There was, however, a haunting fear among farmers' organizations that the national anti-trust law would be applied by officious persons and used as a threat, and it probably was a deterrent.

To clarify this act and remove the fear, the Clayton amendment was passed which was a masterful legal analysis for which the author, a distinguished southern lawyer, has never been given adequate credit. The solution was that agricultural and horticultural societies not having capital stock nor organized for profit, were exempt without going into detail.

A truly cooperative organization is organized to make the products it handles more profitable to the producer. A corporation is intended to produce profit to the stockholder on the basis of stock ownership and exists primarily for profit to the corporation regardless of products which the stockholder may have absolutely no interest in whatever. The distinction between the

sheep of cooperation and the goats of corporation was drawn with marvelous clearness.

Someone had evidently studied the Danish Cooperative Societies and gave them the legal label of cooperation in the correct form. Farmers' societies organized under the form provided as was done in several states, have never been successfully prosecuted or under state laws, even when incorporated as regular stock corporations. Back of this is the decision of the United States Supreme Court in the reconstruction days which declared a citizens' dual relationship to the federal government first, and secondly to the state.

While there are some confusions in regard to police powers of the state this particular corporate right is not in that category. The decision above noted does not conceive of a state declaring under its laws that a citizen of the United States can be convicted of a crime when the United States has declared the particular thing under national laws to be right. In other words, the Clayton amendment declares that citizens of the United States have certain cooperative rights. It then becomes impossible for a state to punish the same citizen for what that state may declare to be a crime. This legal phase of citizenship was again confirmed when the state of Utah was admitted into the Union and was compelled by solemn compact to forever prohibit polygamy, or by state law make a right for its citizens of what the United States declares to be a crime for the same citizenship. In the failure of prosecutions under state laws even where agricultural organizations are strictly corporate bodies, the question has gone back to the rule of reason, viz., was the intent of the corporation against the general public welfare?

The unsatisfactory situation about this "rule of reason" was that there was no tribunal to pass on the question until the act was committed. This congress remedied by creating the Federal Trade Commission. The general plan of this body was not to prosecute but on investigation to point the way if there had been unfairness. The offending body was told "to go and sin no more." Agricultural organizations complying with the terms of the Clayton act have always passed the scrutiny of this body.

In the language of an eminent authority on agricultural economy, "The really cooperative organization stimulates

(Continued on page 144).

# Where Standard Oil Efficiency Is Needed Most

IN the ten Middle Western States served by the Standard Oil Company (Indiana) there is one automobile for each 9 persons. It is estimated that 65% of these vehicles are owned by farmers. That is why the utmost of efficiency in refining, manufacturing, and distributing gasoline and other petroleum products is needed most in this great territory.

To indicate the tremendous increase in the number of cars and trucks, the following statement of 1919 and 1920 registrations by states is given:

STATES	1919	1920
So. Dakota	104,625	122,040
Iowa	363,000	442,200
Minnesota	259,743	323,572
Missouri	229,577	295,817
Kansas	228,601	265,385
No. Dakota	82,885	90,840
Michigan	296,378	412,275
Wisconsin	236,974	303,246
Indiana	277,255	332,207
Illinois	478,438	569,127
	2,557,476	3,156,709

To enable these machines to operate in all weather, under all conditions, and wherever they may be located, an adequate supply of gasoline is needed. To supply this need is the constant endeavor of the Standard Oil Company (Indiana). The refineries operated by this Company are working night and day to increase the yield of gasoline taken from crude oil, without in any way sacrificing the quality of the gasoline.

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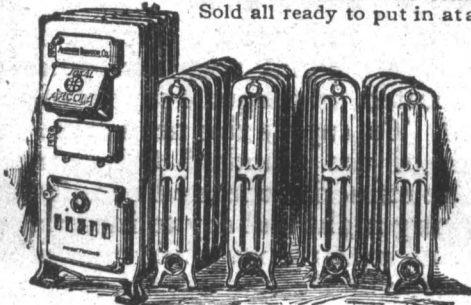


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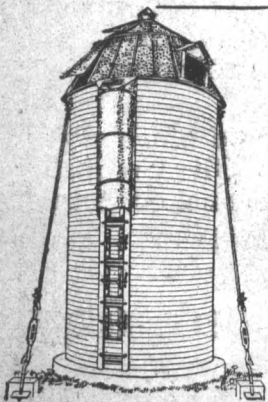


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## Exhibits at Farmers' Week

### Some Fine Educational Displays

PRIZE winning grain samples from the International Hay and Grain Show of December, 1920, featured the tenth annual competitive show of the Michigan Crop Improvement Association, with headquarters in the Live Stock Pavilion of the Agricultural Building. While these successful Michigan entries at the International take a prominent part in the association displays, they by no means complete the samples in the show, for many other state farmers are pinning hopes on their entries in the local competition.

"It is the largest small grain exhibit ever held in Michigan," says A. L. Bibbins, secretary of the Improvement Association, "and the quality of the grain and seed shown is a goal for state farmers to point toward. Raising crops of this quality means lower cost of production and increased returns per acre for Michigan growers."

There were fifty entries of rye alone, including the twenty-nine samples of Rosen rye which won all but one of the thirty places at the International. These are the finest rye samples in the United States and are attracting a lot of attention. Head-selected Manitou Island Rosen stands out in a class by itself among the rye entries.

The South Manitou Island seed development project was one of the interesting features brought out in this exhibit. The Michigan Agricultural College, the Crop Improvement Association, and the State Farm Bureau cooperate in important production of pure Rosen on this island, under isolated conditions. The new annual white sweet clover and pictures of increased plots was also shown at the exhibit.

In the wheat classes, thirty-five samples of Registered Red Rock seemed to be the class of the show. The quality of these samples is such that farmers and elevator men are commenting upon it generally.

Twenty-five entries of oats, with Registered Wolverine most abundant, and about twenty entries of barley was included in the show. Mr. C. L. Pliter, of Clio, Michigan, had a sample of Michigan Black Barless barley which is especially good, weighing fifty-two pounds.

The International first prize sample of Yellow Dent corn, entered by Chas. Laughlin, Three Oaks, was among the leading entries in its class. Farley Brothers' Early Silver King made a good display, while a high type of corn for northern Michigan was shown in the Northwest Dent entered by E. E. Evans, of West Branch.

Entries of pea beans, most of which were the certified Robust, sheaf samples of grains and forage crops, and legume samples added to the well-rounded display of exhibits. Certified soy beans shown indicate that Michigan farmers have a supply of high quality soy bean seed, adapted to state conditions.

Judges for the competitive entries are: Prof. A. L. Stone, of Wisconsin; Prof. W. O. Ostrander, of Purdue; and Prof. J. F. Cox, of M. A. C. Duane Rainey, of the M. A. C. Crops Department, acting as superintendent of exhibits, working in conjunction with A. L. Bibbins, secretary of the Crop Improvement Association.

The farm crops exhibits proper, displayed in addition to the Crop Improvement Association Show, contains a reproduction of a large part of the exhibit shown at the Chicago International. This exhibit was one of the most complete crops exhibits ever gotten together, and attracted wide recognition for Michigan crops at the Chicago show. The Crop Improvement Association

and the Seed Department of the State Farm Bureau cooperate with the college in illustrating the manner in which improved varieties of college origin are grown by farmers, skilled in seed production, under a careful field inspection and registration, guaranteed by the Improvement Association, and sold through the farm bureau.

### SOIL SURVEY METHODS DEMONSTRATED.

THE method and work of a complete soil survey was shown in a topographical map of a typical area of Michigan land, on display in the Agricultural Building. This map shows the soils of a typical section, and brings out the problems of a survey, showing classification, etc. The exhibit was of timely interest in view of the state made on a state-wide soil survey, and the general significance of this work.

Exhibits of fertilizer and lime, and samples of different soils were also included in the soils exhibit, as was a map showing the college field work in soils last year. This work covered ninety-three experimental plots scattered over Michigan.

### INTEREST SHOWN IN TRACTORS AND TRUCKS.

ON display this week in the shops of the college engineering department and in the farm mechanics laboratory in the basement of the Agricultural Building was the interesting material used for instruction in a special truck and tractor short course which opened on Monday, January 31. Twenty-five gas engines, fifteen tractors, numerous trucks and truck parts were available for the inspection of Farmers' Week visitors, and many with an interest in gas power for farm use were going over the equipment daily.

Many Michigan young men who are training themselves for efficient operation of the tractor in the business of farming are enrolled in this course, and are working daily in the shops.

The course is divided into four units, one for each week of the instructional work. During the first week the men are taking up the general principles of the gas engine and of gas engine operation. This work is being given in the farm mechanics laboratory in the Agricultural Building.

The second week will be devoted to a study of the tractor; the third to trucks, including engines, clutches, transmissions, rear axles, and other essential parts; and the fourth and last week to a study of ignition, including advanced work for those who wish to specialize in starting and lighting apparatus.

### HORTICULTURAL EXHIBITS GET MUCH ATTENTION.

TABLES and tables of apples—big ones and little ones, red and yellow, feature the big exhibit of horticultural products in the college armory. There were eighty-two varieties of Michigan apples alone, to say nothing of the entries from twenty-one other states.

The apple show was extensive, and the quality of the entries seemed to set a new standard for Michigan growers. One of the stunts adding color to the display was a large M. A. C. monogram worked out entirely in apples. The students of the horticultural division of the college prepared the exhibits in the horticultural show.

Benton Gebhart, of Hart, stands out as one of the leading exhibitors from the state, his entries of apples included. (Continued on page 140).



## Studying the Beet Problem

*What Representatives From the Sugar Beet States Did at Recent Meeting in Chicago*

**T**HIRTY men representing sugar beet growers of nine states met in Chicago on January 17-18-19, to work out, if possible, a plan for better prices for sugar beets in 1921 as well as a more favorable form of contract between the beet growers and the sugar manufacturers. This was the outgrowth of the conference held in Indianapolis on December 7, when a number of representatives of beet states at the convention of the American Farm Bureau Federation met informally to see if they could not make a start toward developing better conditions for the beet growers.

The conference rejected the suggestion that it ask President J. R. Howard, of the American Farm Bureau Federation, to appoint a permanent sugar beet committee to do the same thing for the sugar beet industry of the United States that the Committee of Seventeen is trying to develop for the grain-producing states and that the Live Stock Committee of Fifteen is expected to work out for the live stock producers. "We want to do something at once," said the delegates. "It will be fatal to delay." So the conference resolved itself into a committee of the whole on the beet industry, shut and locked the doors with the newspaper men on the outside and proceeded to thrash over its problem for the best

tee: C. G. Patterson, of Salt Lake City, Utah, chairman; A. B. Caple, of Toledo, Ohio; Frank Dieckman, of South Holland, Ills.; James N. McBride, of Burton, Mich., and a representative from Colorado. Gustafson also acted as a member ex-officio of this committee and advised with it.

The leading address before the conference, and the one which attracted the most attention, was one given by C. G. Patterson, secretary of the Pioneer Sugar Company, and secretary of the Idaho Beet Growers' Federation. His talk was devoted mostly to telling about the extensive legislative and technical activities of the sugar manufacturers and how and why the sugar beet producers should organize themselves thoroughly so they can go to the bottom of sugar beet matters just as thoroughly as do the manufacturers of sugar.

To keep up with the other fellow you have to let him know that you know what he knows. If two horse-traders are equally skilled neither one comes out badly worsted; so it must be with out two organizations. We must plan an organization that is national in scope. Maintain it and finance it so that we can command keen minds and dignity.

"The bursting of the sugar bubble caused a panic in many parts of the



In a Michigan Sugar Beet Field.

part of three days. At the end of that time it brought in the following recommendations:

1. That the American Farm Bureau Federation proceed to organize the beet growers of the United States into a compact and workable marketing association along the lines of the plan adopted a year ago by the United States Beet Growers' Federation, but which that organization has been unable to put into effect because of lack of finance.

2. That a uniform contract between sugar beet growers and sugar manufacturers be worked out by the various states upon the basis of eight-cent sugar and \$10.32 beets. The schedule suggested was as follows:

Sugar Per Pound.	Beets Per Ton.
Five cents .....	\$ 6.45
Eight cents .....	10.32
Ten cents .....	12.90
Fifteen cents .....	19.35

The sugar price in this schedule is to be the Willett and Gray quotations on wholesale quantities of sugar delivered at the seaboard. The schedule, as will be noticed, is considerably higher than the prices which beet producers have been accustomed to get for beets, the average for the entire country being about \$9 per ton for beets when sugar is eight cents per pound.

C. H. Gustafson, of Nebraska, was elected chairman of the conference, and the following executive committee of five acted as the steering committee:

Cuba is still in difficulties over her head, due to the fluctuating prices. The rest of the world went mad for gold when America offered such high prices, ships crossed the Atlantic only to be sent back unloaded by Europeans who were willing to deny their own sweet hunger for the price America paid. Sugar is still coming from all parts of the world because of the rumor that spread. Now we have 800,000 tons of sugar left over, as much as is annually produced from America's beet fields. Marketing time in America found the field barricaded with a hang-over of 200,000 tons of Cuban sugar, enough to last four months. The manufacturers have \$4.00 invested in the cane fields of Cuba to \$1.00 invested in the beet fields of America so it can be easily seen which interest they will sacrifice first."

Michigan was represented by the following men: T. C. Price, of Saginaw; C. E. Ackerman, of Durand; James N. McBride, of Burton, bearing credentials from both the Michigan Beet Growers' Association and the Michigan Farm Bureau.

The ideal soil for a peach-orchard is a warm, gravelly hillside. Even sandy soils are excellent for peach-growing if the sand is not too fine and the drainage bad. Heavy, cold clay soil is unsuited to the peach. Plum-trees are naturally adapted to stiffer soils than the peach.

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#### HORTICULTURAL EXHIBIT.

(Continued from page 138).

ing more than forty varieties. Another prominent individual exhibit was that of Lloyd Spencer, of Kibbie. The upper peninsula was represented well in the apple show, twenty-two varieties sent in by Mr. Blemhuber, a member of the executive committee of the State Farm Bureau, made up a special upper peninsula show.

Along with the apples, a state potato exhibit stood out as a leading feature of the horticultural show.

Thirty-six samples of certified seed potatoes were displayed in this section. Russet Rural (or Late Petoskey) making up about ninety-five per cent of the entries. Green Mountain was the other variety represented. The entries came from growers scattered all over the lower peninsula, although Alpena, Presque Isle, Emmet, Antrim and Otsego counties claim a lion's share of the exhibit.

The advantages of good cultural practices, such as hill selection, fertilizing, etc., were graphically shown in the potato exhibits. One of the interesting features was a map of Michigan, showing potato sections graphically.

Potato diseases were exhibited in exhibits prepared by the college plant pathologists, to accompany the potato displays.

A touch of beauty was added to the horticultural room by the sections devoted to floriculture. Greenhouse men from over the state have contributed cut flowers, to go with the potted plants from the college, and the result was one of the most beautiful exhibits of the week.

Displays of citrus fruits, including oranges, lemons, etc., injurious fruit insects and apple diseases; a nut exhibit, based on a map of the United States showing distribution of varieties; and cider, honey and other kinds of vinegar, had their booths in the general exhibit.

The college armory was done over as a Roman garden to house the horticultural show, the decorative theme being carried out remarkably well throughout the entire building.

#### HORSE AND ANIMAL HUSBANDRY EXHIBIT.

THE finest collection of horses owned by any agricultural college, is the way W. L. Houser, president of the Wisconsin Breeders' and Feeders' Association, and ex-member of the Wisconsin State Board of Agriculture, characterized the group of twenty-five blooded draft horses owned at M. A. C. when he visited the college in connection with the annual meeting of the Michigan Stock Breeders' Association recently.

These horses have been dressed up for show purposes this week and were on exhibit in the horse barn immediately south of the Agricultural Building, but upon ordinary occasions they don't stand around waiting for company. Each one of the twenty-five is a splendid worker and his services are utilized in operations on the college farm.

Percherons predominate in the group. In addition there were a number of Belgians and two teams of Clydesdales. One pair of black Percherons won first prize as a draft team at six Michigan fairs last fall, while Belle and Queen, full Belgian sisters, took first in the yearling and two-year-old classes at the same number of fairs.

In all, thirteen of the animals have taken first prizes. One Belgian stallion took first honors as a two-year-old and was named reserve champion at the Ohio State Fair last year. Of the Clydesdales, one took the junior first prize and grand championship at the Chicago International Exposition in 1917. Another took first prize and jun-

ior championship as a yearling at the 1918 International.

In this connection it is interesting to note the opinion of horse experts that the day of the horse is far from over. With the present scarcity of breeding animals, they say that in a few years the country will face a horse famine unless counteracting steps are taken immediately.

Superintendent R. S. Hudson, of the M. A. C. farm, in charge of the college horses, cites the case of the district surrounding East Lansing, where of about a dozen animals owned privately for breeding purposes not one is left, and as a result horses owned by the college are continually being called upon. This situation prevails virtually everywhere, he says. Even in central Illinois, for years the leading horse breeding section in the United States, the number has dwindled to but a fraction of the former total.

But any notion that the tractor is going to supplant the horse entirely is wrong, he asserts. Many of Michigan's farms are in general too small and not suited for the use of the tractor on a large scale unless owned cooperatively. For this reason the draft horse will continue to be the farmer's standby in the accomplishment of the operations he needs to perform in the field.

Besides the horse exhibit, the animal husbandry department had this week shown standard breeds of cattle, swine and sheep. The fine specimens are not limited to the horses, and visitors found much of interest in each of the college barns.

#### FOOT COMFORT EMPHASIZED.

FROM a well-fitted infancy to a cornless, comfortable old age," was the keynote of the shoe exhibit, which was a part of the housewives' congress in the Women's Building. Specialists in women's footwear believe that common sense may be attained without sacrificing beauty, and it is to stress this point that the exhibit had been planned.

Among the varieties displayed were shoes for infancy and childhood, for college girls, for elderly people, and for people with weak feet; shoes built on hygienic lines, and a comparison of well-cared for and neglected shoes.

Shoes with French heels and pointed toes, though for a long time dictated by Dame Fashion, are not in reality beautiful, assert the home economics experts, who say they are conducive neither to health, comfort, nor happiness.

High heeled shoes with pointed toes cause a hobbling, itching gait and deform the foot, while those with low or medium straight heels and toes which are not too pointed are a safeguard against sprained ankles and broken arches.

Low heeled shoes cause one to walk with the foot in a straight line, heels do not become run rapidly and shoes of this type are easily cared for. The graceful swing with which one walks when comfortably footed is reason enough for the adoption of the hygienic shoe, it is contended.

#### WIVES MAKING SURE THAT HUSBANDS SEE THIS.

VARIOUS farm and household conveniences were displayed in the exhibits of the farm mechanics division of the college, in the basement of the Agricultural Building this week, and it had been observed that many women were tacitly leading their husbands to view them.

Several types of water systems adapted for farm use, a full size septic tank, lighting plants, pumps, and hydraulic rams, in addition to gas engines and engine equipment, were included in the exhibits.



## Taking the Guess Out of Farming

EVERY farmer will agree that this would be a good thing to do—to take the guess out of farming—to supplant theory and fragmentary information with proven knowledge. Every progressive farmer spends a good deal of money and time and energy in proving to himself that many of the things he thought he knew about his business were not so.

What a fine thing it would be for all of us if guesswork could be eliminated from the proposition. And this is actually being done; very gradually, of course, but substantial progress is continually being made in that direction. Nor is this progress so slow as most of us believe, if measured by generations of farmers rather than by years. The average farmer of today knows a lot of basic things about good farming that his forebears of a generation ago never even imagined, and a good many things that even the scientific investigator of the last generation only guessed might be true. Unfortunately for the present generation, progress in taking the guess out of farming is only just nicely started. A lot of guesswork remains to be eliminated. But every progressive farmer is aware of that fact and is interested in every proposition which will help to eliminate even a small fraction of it.

### Soil Surveys Will Help.

One such proposition is a comprehensive soil survey. In spite of our wonderful progress in knowledge of how to handle the soil for best results, there is far too much guesswork in the application of the knowledge we have. The application of scientific and established experimental knowledge is quite likely to prove disappointing in any particular case, owing to the wide variation in soil conditions under which we operate. And we are prone to fail to recognize this fact and to discredit basic truths which would aid us greatly if we could but harmonize them with our conditions.

Most of us have but a very limited knowledge or appreciation of the wide variation of soil characteristics, sometimes even on our own farms. We roughly classify soils as clay, loam, gravel or sand, with little regard to subsoil conditions and almost none at all for the wide range of variations of physical composition and condition of soils within these rough classifications. It is very easy to comprehend that if we could have a further classification of our soils it would open up a new field for the application of experimental knowledge gained on soils of a similar standardized type. It would take quite a lot of the guess out of farming if we could have this definite, detailed knowledge of the soils on our own farm. And it would take a lot of the guesswork out of the proposition of buying farming land if we could easily get this information about any piece of

land in the state so that we could properly assess its value for farming purposes. And we can do both these desirable things at a very nominal cost when the soil survey being undertaken cooperatively by the Soils Department of the Michigan Agricultural College and the United States Department of Agriculture is completed.

### Method of Soil Survey.

In making soil surveys the field men of the Soils Department of the College and of the United States Department of Agriculture, working jointly, go over the area to be mapped in detail. They examine the soils carefully as to its texture, or the amount of sand, silt or clay they carry, structural relationship, topography, color, vegetable matter content, lime carbonate in subsoils, depth, drainage, etc. On this basis the soils of a county or area are classified, and their boundaries located and shown on a soil map.

Drainage courses are located and shown on the map. The areas of land that are poorly drained or are in need of artificial drainage are also shown on the map. Moreover the topography or lay of the land is considered as well as the areas or fields that have eroded or are eroding badly and where possible prevention methods are suggested. The amount of land utilized is shown and the possibilities for development are considered. The present state of productivity and methods for improvement by means of lime and fertilizer are also given consideration.

Samples of surface and subsoils taken to a depth of forty inches are transported to the laboratory and analyzed for plant-food, lime and water relationships. This constitutes one of the most important phases of the work, inasmuch as it affords a background or a basis for future soil improvement or betterment.

Upon the completion of mapping of the soil and the gathering of information concerning them a report is written. This, when published, includes the soil map of the county or area in question. Records of weather conditions, agricultural relationships, descriptions of the different kinds of soil found, their plant-food content, their deficiencies, if they have any, and the means of overcoming them.

### What Has Been Accomplished.

Earlier surveys by the United States Department of Agriculture, Bureau of Soils, includes, Allegan, Wexford, Cass and Genesee counties, and also the Alma, Saginaw, Owosso, Oxford, Pontiac and Munising areas. Calhoun county was finished in 1917. These are to be modified somewhat on the basis of the classification more recently worked out and will then be made to fit into the Michigan Soil Survey.

During the past year a reconnaissance survey has been made of the Old Lake Bed soils of the Saginaw basin,



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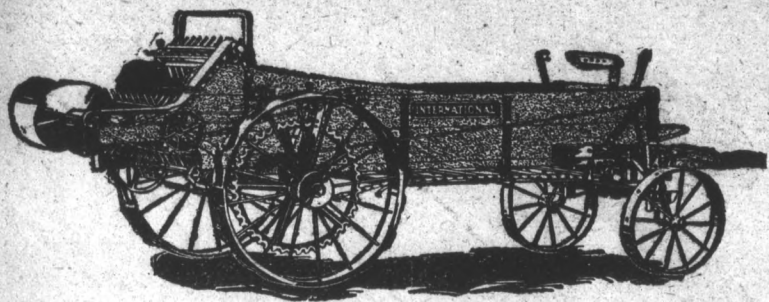
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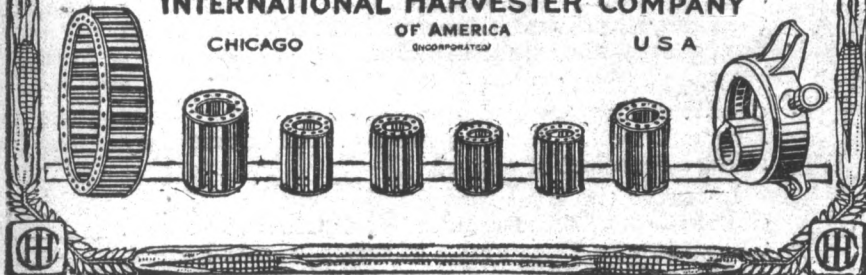
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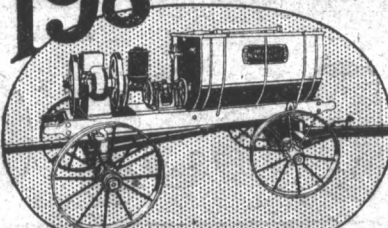
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Thumb and southeastern areas of the state. About one-third of Chippewa county has been covered in a similar manner. Soils maps have also been made in St. Joseph and Branch counties. In addition a very detailed survey of Berrien county has been completed. There were five men in the field for the greater part of the last mapping season, and seven part of the time.

### The Cost of the Work.

The work is also being carried on in the cut-over sections of the state. It seems that it is more important to locate the larger areas of different kinds of land in a short time than it is to spend much time on details. The average cost of a soil map of the undeveloped counties will run under three hundred dollars aside from the cost of the report that is issued.

The cost of the work in developed areas is not great, due to the cooperation with the United States Department of Agriculture. Berrien county has been mapped in detail the past season at a cost of approximately twenty-five hundred dollars. It should be noted that this is a large and difficult county to map owing to the variation in soil and diversification of agriculture. Several counties in the state will not cost more than one-half this sum and it is very doubtful if any one will cost more. This means a permanent piece of valuable work at a less cost than the construction of one-quarter of a mile of good road.

Several things have been revealed by the soil surveys thus far conducted in Michigan. Dr. McCool briefly summarizes them as follows: "An abundance of carbonate of lime underlies the greater portion of the heavy lands of the Saginaw Valley, Thumb area, eastern and southeastern Michigan, or the area known as the Old Lake Bed. The nitrogen content is high, as is the potash, but the phosphoric acid is the plant-food constituent that is lowest, but, in fact, it runs higher than in most of our soils. Attention to drainage and soil tilth is generally necessary. The deeper sandy soils are usually not high either in lime, phosphoric acid or nitrogen. However, the shallower sandy soils are generally very productive when drained. The percentage of the lands in St. Joseph and Berrien counties not in need of lime for best results has been found to be very low. The carbonate of lime is not generally found above thirty-six inches in the heavy soils of these counties and in case of the sands it usually lies below five feet from the surface. Large areas of light surface soils in Berrien county contain a small per cent of clay in the subsoil. The presence of this material doubtless adds to the agricultural value of these soils."

This general information alone makes the job well worth while, to say nothing of the detailed information which will be invaluable to every individual farmer who avails himself of it. It will be a big help in taking the guess out of farming, and at an almost infinitesimal cost per acre.

### COOPERATIVE STOCK SHIPPERS MEET FEBRUARY 10-11.

THE second annual meeting of the Michigan Live Stock Exchange of the cooperative live stock shippers of the state, will be held at the Michigan Agricultural College, East Lansing, Michigan, on Thursday and Friday, February 10-11. We urge every local cooperative shipping association in Michigan, whether they are members of the exchange or not, to have a delegate at this meeting, as matters of vital importance to cooperative shippers will be taken up and we surely need your cooperation and advice.

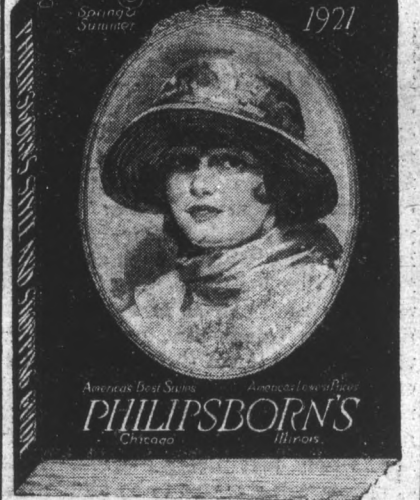
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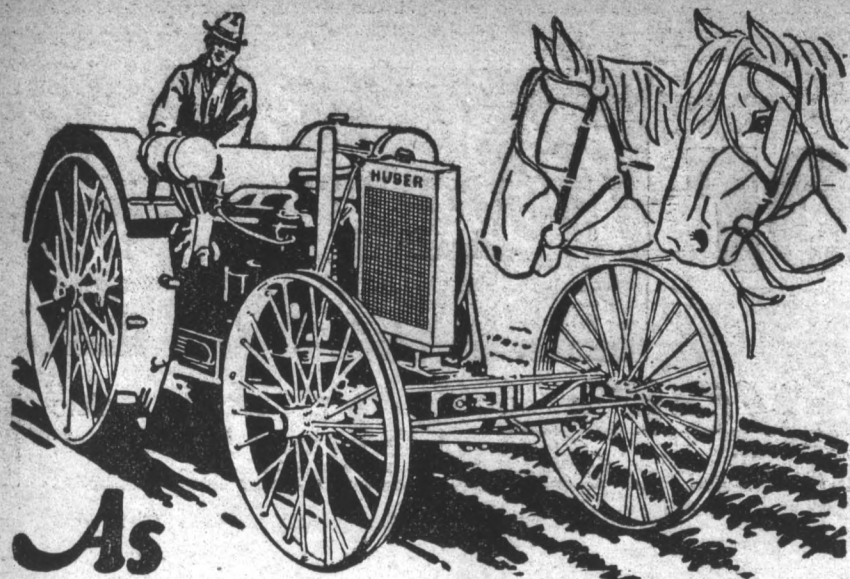
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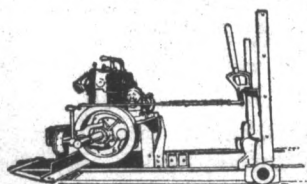


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The Huber Light Four pulls three plows and turns an acre an hour. It gets the plowing done on the few choice days when the ground is just right and assures a bigger yield. It

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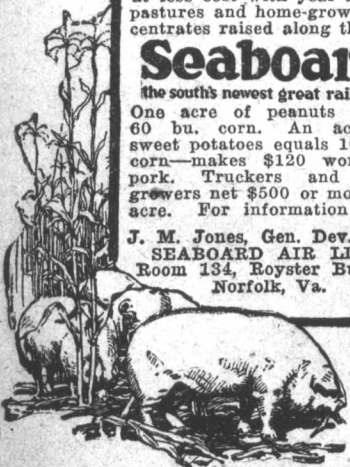
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**THE SIMPLEST  
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Furnished in units for herds of five cows or more. Pump-pulsator type. Gives complete vacuum release on teat; safe, smooth natural action.

**"SEE-THRU" Teat Cup**  
Patented exclusive feature. See all teats milking. One piece—clear as crystal—as easy to clean as a dish. Most lasting, greatest milk-improvement invention.

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## The Legal Powers of Farmers

(Continued from page 137).

lates production, for when it enhances the return, the industry is enriched. A corporate body handling the same product, abstracts from the industry, or at least gives no guarantee that it will not, and usually does." The form which farmers can cooperate best is carried on by a non-profit, non-capital stock body used to market or assemble their products. This gives freedom from liabilities and control is kept by the producers. The necessity of fixed capital can be met by a strictly capitalistic corporation by the same individuals and in their cooperative body renting or guaranteeing the interest rate and upkeep on their corporate venture. The corporate body is subsidiary to the cooperative body.

The difficulty that congress has had in enacting a national law legalizing collective bargaining is one of legal fact rather than any desire to deny the right. There is a legal situation already well settled by the Clayton amendment which permits this right under the form of organization already described. To make a distinction between farmers in a capitalistic form of corporation (even though the dividends are limited to the usual earning power of money at interest), and other corporations of non-farmers is of doubtful legal possibility. The legal equality of all people regardless of class, was what had exempted the farmer in the early history of anti-trust laws and to now make him a privileged class is exceedingly questionable. The very recent decision of the United States Supreme Court in the Duplex Printing Press secondary strike case, refers back to the Clayton amendment, declaring labor not a commodity and exempting its organizations from the Sherman act. The court held that when labor organizations went beyond a reasonable defense of their individual rights, which in this case was of men not immediately or directly a party to the controversy, they were not exempt. The United States Supreme Court has consistently held to the rule of reason in all its decisions.

Another reason which diminishes the necessity for the Capper-Volstead act is that it would only apply to interstate commerce and still leave the matter of intra-state which is of the much greater importance, unsettled. The best agricultural, legal, economic thought now is along the lines of legalizing collective bargaining in the respective states and providing a court of business relations to construe reasonableness and also righteousness of contracts. The farmer needs a court where he can say to those manufacturing and distributing his products that he asks the same pay for labor and compensation for risks and hazards of business that is common in other lives of industry.

Today the non-farming world cynically scoffs at the farmer's production costs and cheerfully allows that of the manufacturer and distributor.

It is regrettably true that the legal and moral rights of the primary producer are treated as "scraps of paper" by those who have preponderating power in buying. Agricultural leadership is compelled to defend organization for service against an assumed power of a great monopolistic trust which will enhance food prices. The farmer's best answer to this would be a court of business relations with power to hear controversies between those industries where the producer is an essential factor. The milk condensary, for example, is not alone the industry but the dairymen with his herd and equipment are to be considered. What are the equities of these respective contributors to the food supply, would

be a question for the court of business relations to determine.

Agriculture should do just what labor has refused to do, viz., to incorporate along commodity lines and submit its case to a legal body to determine its efficiency and costs and its right for profits as well as losses.

The writer in attendance as a member of a milk commission in one of the large cities of the United States was startled by the apparent sincerity of argument advanced by a representative of the distributors, viz., that while the proposed milk price was conceded below the cost of production, the loss, when borne by all the producers was not materially felt, while the distributors could by no means operate without a profit.

Promotion and common stock of beet sugar factories have been paid from the best fields and contracts are signed on the dotted lines which insures this gain and often at the expense of the grower. Where the golden rule is not willingly practiced, it should be legally enforced. Under no conceivable law can agriculture be exempted from collectively working an injury to society by refusing to produce, nor does it want to do so. On the other hand, positive injury is done to the producer by inequitable rewards for his service and not proportional to that of his co-workers who merge their efforts in food production. The investigation and determination of these equities can best be made by the enactment of a law in the respective states providing a court of business relations.

### EXPERIENCE WITH NITRATE OF SODA.

**I** HAVE carried on several experiments with nitrate of soda, and generally with good results. There are two distinct types of sandy loam on my farm. The richer in humus of these does not respond so noticeably. It was on the lighter type that an experiment was carried on by the Michigan Agricultural College this past season, with one hundred or more Elberta peach trees. No difference was noticed between the rows having applications of nitrogen alone, nitrogen and phosphorus, and nitrogen phosphorus and potash. In other words, whatever difference there was with the check rows must be attributed to the nitrogen.

These treated rows showed a much darker and more luxuriant foliage than the check rows, and while there was no difference to speak of in the yield, the trees may be assumed to be in a better condition to produce a fuller crop next year, other conditions being the same.

The fruit ripened somewhat later than the fruit on the checks, and the foliage did not stop growing as early in the fall. For this reason, I think another year I shall apply the nitrate before growth starts in the spring, so that its effect may be fully developed by early fall.

The experiment this year tended to show that one may apply too much nitrate. Trees with five pounds did not show up as well as with either two and a half or one and one-quarter pounds. The latter two were equally good, consequently I would choose the smaller amount because of expense and probable earlier ripening. Experiments in this same block of trees but in another place, carried on in 1919 did not show any results, owing no doubt to a very prolonged drought during the growing season.

This past year sulphate of ammonia proved beneficial with bearing cherries, apples and peaches.

A. J. ROGERS, JR.





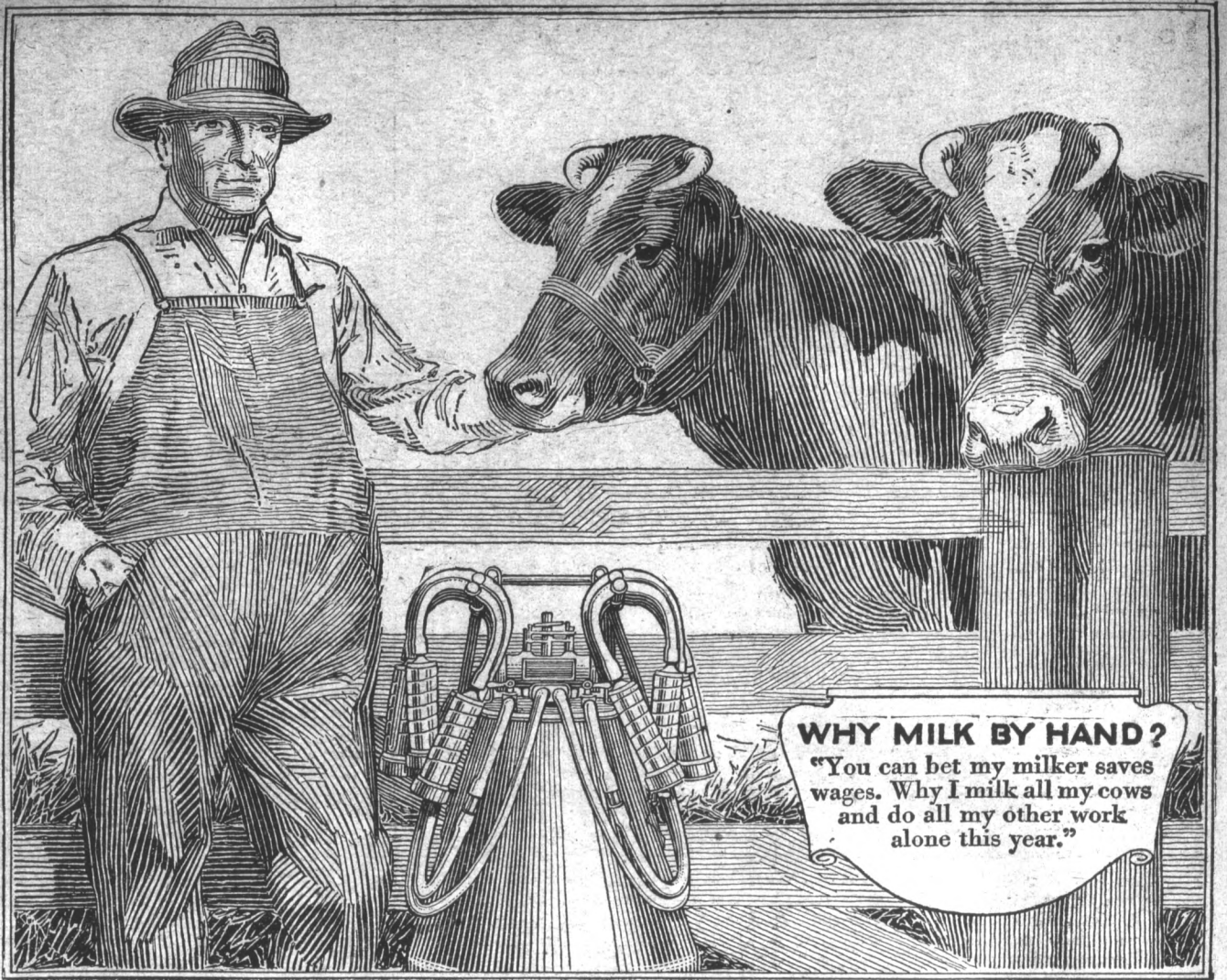
## ACCREDITED HERD CAMPAIGN.

**T**HE accredited herd campaign which started December 7 has made excellent progress and nineteen meetings had been held up to the first of January, including meetings at Flint, Lapeer, Mount Clemens, Saginaw, Bay City, Sandusky, Owosso, Howell, Ypsilanti, Ida, Plymouth, Jackson, Adrian, Marshall, Hastings, Farmington and Galien. Two other meetings during this time, one at Caro and the other at Holland, were postponed, lateness of trains making it impossible to meet the schedules. These will undoubtedly be held at some later date, and a number of other meetings are being scheduled.

Local arrangements are being handled by the farm bureaus and Holstein organizations, where such exist, and in counties which are not fortunate enough to have local organizations, individual breeders arrange for the meetings. Dr. T. S. Rich, federal inspector in charge of tuberculosis eradication in Michigan, and H. H. Halladay, State Commissioner of Animal Industry, have been the principal speakers at the meetings, assisted by H. E. Dennison, of Owosso, S. H. Munsell, of Howell, and Field Secretary Norton.

The work of controlling and eradicating tuberculosis under the state and federal accredited herd plan has gained great headway in Michigan since its inception in 1917, but limited funds have prevented such development as we should like to see. This method of protecting the health of the herds has met with almost universal approval among the breeders of pure-bred cattle, and if sufficient funds were available so that the work could be pushed, the breeders would almost without exception be glad to place their herds under supervision. Such being the case, it is up to the Michigan cattle breeders to see to it that the legislature which convenes in January makes a liberal appropriation for this work. Holsteins are by far the most numerous of any of the breeds of cattle in Michigan and two-thirds of all the herds now under supervision in the state are Black and White, and for this reason it devolves upon the Holstein breeders in particular to make a determined effort to have the budget for this work put through as proposed.

Michigan Holsteins have long been recognized throughout the country as being exceptionally free from this disease and Michigan breeders must do everything possible to protect their herds and keep up the reputation. The recent report of the United States government shows that Michigan stands well toward the top among the states as regards the number of pure-bred Holsteins in accredited herds, and the records for the first eleven months of 1920 show that less than two and one-half per cent of all cattle tested in Michigan under state and federal supervision have reacted to the test—a truly remarkable showing. Everything points to the fact that we can eradicate the disease in Michigan with a comparatively small loss if we take advantage of the situation. So let's all get busy and make a determined effort to get a firm foothold. It is a matter of economy and good business to act now and save greater losses in the future, and every breeder of Holsteins or any other kind of cattle should support this measure.



"The machine made it possible for me to do my work alone this year and more than paid for itself in the savings of wages this summer." —WILL HANEFELD.

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**N**O doubt you have often thought, "If I could only do the milking I could get along with less help or even do my work alone." Here's the opportunity to put that thought into action. Get a Perfection and you can do your work with less help or alone.

One man with the Perfection can milk the same number of cows as three hand milkers. You can easily milk 24 to 30 cows an hour with the Perfection Milker.

Thousands of owners say that Perfection easily pays for itself in less than a year on

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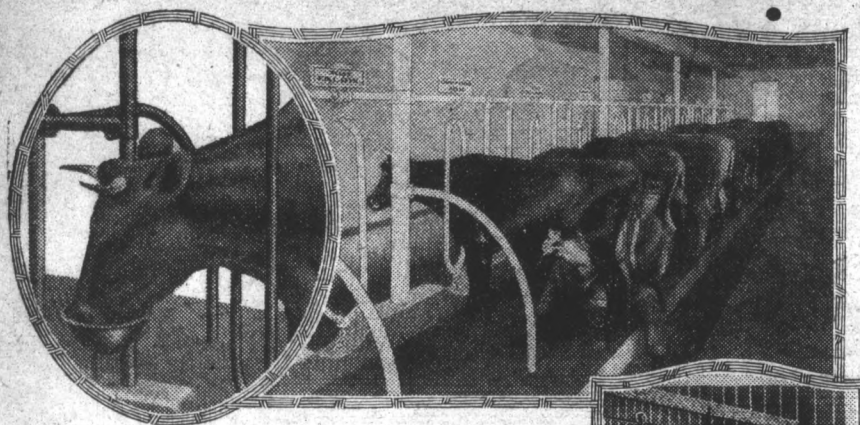
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When you add to the milk gain, the daily saving of time in doing your barn work—the better health and more contented state of your cows—the saving of feed—the greater pleasure and ease of doing the chores and the cleanliness of your barn—if you could figure all of these things out in dollars and cents, you would find that Louden Barn Equipment will make your cows pay a bigger profit every day.

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Where installed, Louden Water Bowls show an immediate increase in milk of from 25% to 40%. Louden Stalls and Stanchions, Litter and Feed Carriers actually cut the daily barn work in two, and the Louden High Built-Up Manger Curb saves many a pound of feed that would otherwise be wasted.

Louden Barn Equipment is the result of over 53 years' study in working out ways for the farmer to save time and back-breaking labor in his daily barn work. It reduces the expense of barn work one-half—gives you a sanitary barn and greater milk production from your herd—in fact, it puts your barn on a bigger profit-making basis.

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of information for the barn builder. Plans and pictures of 74 different barns. Chapters on mixing and using concrete, roof construction, cross-section details, lighting, ventilation, drainage, barn arrangement and other points of vital interest. Don't fail to get this book at once.

If you are going to build or remodel a barn write us the sort of barn you have in mind, the number and kind of stock you wish to house. Our Louden Barn Plan Experts will send you blueprints and suggestions for a barn that will exactly meet your needs. No charge—no obligation.

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## Washington Letter

By E. E. Reynolds

FARM organization representatives in Washington are pleased with the success of the Kenyon-Kendrick-Gronna meat packer regulation bill in passing the senate by a vote of forty-six to thirty-three; but there are differences of opinion as to the probable fate of the bill in the house. The friends of the bill in the house are confident that it will pass congress before March 4. Congressman Campbell, of Kansas, chairman of the house rules committee, is said to be in favor of the measure, and it is thought that with his aid a special rule may be reported giving the bill the right of way in the house.

Those representatives not friendly to the measure are equally confident that they will be able to postpone action on the bill this session, and that the fight will have to be made over again in the next congress, both in the house and senate. It is also thought by some that the bill as passed by the senate will not greatly affect the packers' interests and will meet with little opposition.

A number of amendments were made to the bill. One introduced by Senator Pittman, of Nevada, provides that the act shall not apply to any person engaged primarily in the raising of live stock. Senator Hoke Smith, of Georgia, secured an amendment providing for an appeal from the commission created by the bill. An amendment introduced by Senator James W. Wadsworth, of New York, eliminates horses, mules and goats from the provisions of the act.

The Gronna bill creates a Federal Live Stock Commission to supervise and have regulatory powers over the meat packers. The compulsory licensing clause was eliminated, but it was replaced by one providing for voluntary registration of packing companies. The packers are required to make accurate returns of their operations to the commission at stated intervals. They are prohibited from entering into any agreement to fix prices, and are required to dispose of their stock yards within two years of the enactment of the measure. The sum of \$75,000 is appropriated for carrying out its provisions.

THE announcement that Attorney-General Palmer had made a ruling to the effect that butter made from sour or rancid cream is subject to the ten cent a pound tax now levied on adulterated butter, is causing some uneasiness among the dairymen. It is the ruling of the attorney-general that any grade of butter manufactured from rancid cream or from cream containing a high percentage of acid which is neutralized before churning with the addition of chemicals is adulterated within the meaning of the act of May 9, 1902, and is taxable under the law.

Commenting on this ruling, J. J. Farrell, of the National Dairy Products Commission, says that the greater bulk of creamery butter is produced in summer from milk kept over night. When it is too high in acid one pint of lime to one hundred pounds of cream is used to reduce the acidity. This puts the cream in condition where it will pasteurize more efficiently. If this ruling is enforced it will add a tax of ten cents a pound on at least seventy per cent of all the creamery butter made in creameries in this country. It would drive the business of butter-making back to the farms, or the creamery man would be compelled to produce a poor grade of butter. This matter has already been taken up in congress as a subject for discussion, and it is giving the oleo representatives an oppor-

tunity to get back into the lime-light. It is claimed that the amount of revenue to the government from this tax on butter would be upwards of \$5,000,000 a year. The dairy organizations are preparing to make a fight against this ruling if the attorney-general holds to the position he is alleged to have taken in the matter.

The house committee on banking and currency has been investigating the Washington representatives of the various farm organizations maintaining headquarters here. In explaining the purpose of this investigation, Representative L. T. McFadden, of Pennsylvania, chairman of the committee, said the committee wanted to know who the representatives are, not in a spirit of animosity, but to seek information in regard to the standing of the representatives and who they stand for.

Gray Silver appeared in behalf of the American Farm Bureau Federation, answering many questions pertaining to the organization and its connections. It seemed to be the prevailing idea of the committee that the County Farm Bureaus were fostered and supported by government funds under the Smith-Lever act. Mr. Silver explained the connection between the county agent and the farm bureau, saying that the farm bureaus supplemented the government funds in supporting the county agent, but that the work or maintenance of the farm bureau did not depend upon the Smith-Lever act funds. He pointed out that in Illinois where the farm bureau movement is strongest the Smith-Lever funds were not accepted by the state until in recent years. The first farm bureau was started in New York state for the purpose of raising funds to pay the county agent.

Dr. T. C. Atkeson, representing the National Grange, gave an account of his forty years' connection with the Grange, thirty-eight years in an official capacity. He objected to being called a lobbyist, saying he had never undertaken to unduly influence congress to enact or defeat any proposed legislation. The farmers pay five cents a year to support the National Grange, and the expense of maintaining the Washington office is not more than one and one-fourth cents a member per year. The Grange has promoted practically all the legislation to prevent exploitation of the people. Dr. Atkeson told the committee. It backed the movement which resulted in the organization of the farm bureaus and the county agent system. He believed that it was good public policy, though it may require special legislation, to provide the means of keeping the land owners on the farms.

It is probable that this investigation will be extended to some other organizations represented in Washington, with the object of giving the committee opportunity to question the representatives as to who they represent and who pays them for their services. It promises to become interesting as this investigation progresses.

A twenty-ton caterpillar tractor, drawing an auto truck and huge plow has been employed in keeping the Cloverland Trail from Bessemer to Ironwood open for traffic, states the "Globe," of December 23.

How about the herd boar? Get him out in a good-sized yard, away from the rest of the herd. Remember he is half of the breeding-power of the herd, and that his influence on the profits for the year amounts to more than that of any one sow.



## IOWA FARMERS DEMAND CREDIT AND COOPERATION.

**I**N the second annual convention of the Iowa Farm Bureau Federation, held in Des Moines recently, the keynote was a determination to secure a greater measure of economic justice for the farmer. This is to be accomplished through a new system of marketing. Iowa farmers are anxiously awaiting a definite plan from the farmers grain marketing committee and the farmers' live stock marketing committee, which are at work upon their problems under the auspices of the American Farm Bureau Federation.

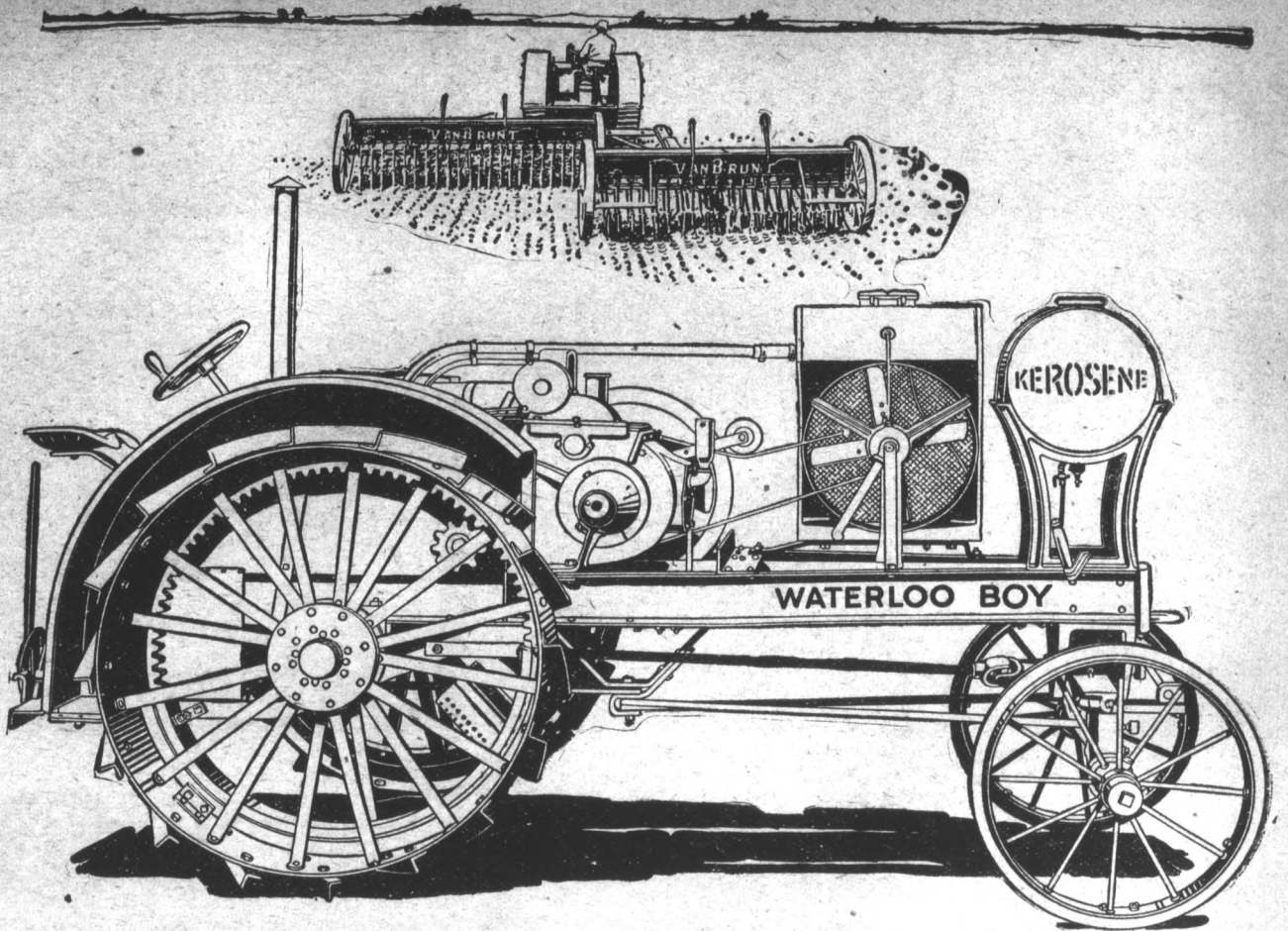
It was quite evident in the convention that whatever system of marketing is recommended by these committees, it will be necessary to have improved credits. The thought crystallized about the idea advanced by Ex-Congressman A. F. Lever that commodity banks should be set up in various districts. Then by use of the grain grading act and the warehousing act, farmers would be able to pool their products, deposit the receipts in the commodity banks where debentures would be issued against them and sold in the money markets of the world to furnish the farmer with funds by which he may orderly market what he raises.

In his opening address President C. W. Hunt declared that the financial problem is the most difficult one, but it can be worked out. One of the encouraging results of organization is that all other organized interests seem anxious to cooperate with the farmer for the benefit of the public at large. Farmers are going to insist that they be allowed to put their feet under the table along with the other interests and that on top of the table everyone be required to show the cards face side up.

Secretary E. H. Cunningham presented a comprehensive report showing that he had on hand in the treasury \$235,188.78. The Iowa Federation has more than 120,000 members. During the year the federation's cost of production committee had conducted an exhaustive survey and has found that it costs \$1.38 to produce a bushel of wheat in Iowa, seventy-five cents to produce a bushel of oats, and ninety-three cents to produce a bushel of corn. He announced that headquarters are being removed from Ames to Des Moines. In his recommendations the secretary urged that the program of work for the coming year should give due recognition of the report of the committee of seventeen, and prepare to back its program; that a committee on rural credits and a bureau of research be created at once; that cooperative marketing be studied and cooperative elevators and shipping associations be established through federation aid.

C. L. Harlan, who is the representative of the Iowa Federation and of the Corn Belt Meat Producers' Association, at the Chicago stock yards, presented a comprehensive report of the work and findings of his office. He declared that if marketing is left to individuals it will not result in securing cost of production. There is no possibility of stabilization of prices unless the flow is controlled in a consignment market where perishable products are sold the buyers always have the advantage. Mr. Harlan declared that even under the present system there was no reason why hog prices at Chicago should fluctuate \$1.00 per week. This fluctuation, he declared, is due to the activity of hog speculators, they should be eliminated. Mr. Harlan believes that the agrarian movement will succeed or fail according to whether or not it establishes successful cooperation between farmers.

In the election of officers, C. W. Hunt was unanimously re-chosen as president.



## Only \$5 for Repairs in Six Years of Service

**T**HE makers of the Waterloo Boy Tractor do not consider it enough that their product is dependable and gives efficient service. They have built it into another feature which means much throughout the years of its profitable use. That feature is Waterloo Boy economy—not only in the use of fuel and oil, but for general up-keep and repairs.

### WATERLOO BOY KEROSENE TRACTOR

Back in 1914 Mr. E. F. Rowe, a farmer living near Hampton, Iowa, bought a Waterloo Boy Tractor. It was one of the earlier models put out by its builders. Its gears were not enclosed, its bearings were of the plain type—it lacked many of the improvements found on the present Waterloo Boy.

Mr. Rowe used his tractor for all his field operations and for most of his belt work. In checking up his expense last fall, he found that he had spent but approximately \$5 for repairs during his six years of ownership. Only \$5 for repairs during six years of dependable, efficient, service. And it is still going strong.

This is but one instance of Waterloo Boy economy. There are many, many others. Improvements on the present Waterloo Boy make it a great deal more economical than the one Mr. Rowe owns. The gears are now enclosed and run in oil, Hyatt roller bearings at all important points reduce friction and add to its long life. Every feature of construction makes for economical up-keep and operation.

Find out what a Waterloo Boy Tractor will do for you on your farm. Try it out. Your John Deere dealer will be glad to co-operate.

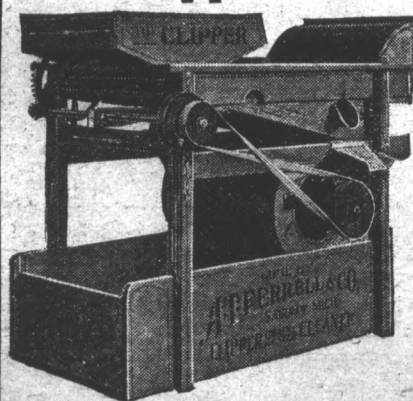
The Waterloo Boy Tractor and the John Deere No. 5 Tractor Plow make a reliable plowing outfit.

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The Clipper is the only mill that has the "Vertical Blast", which weighs every seed and kernel, separating the light, shrunken, immature seed from the plump, heavy mature seed, 98% of which will germinate under test. This point alone makes much of the difference between crop success and failure.

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Hand and power, the size you need at a price you'd like. Work done in one-fifth the time. Built of all steel and iron like the \$500 mixers but simpler. The Leader of Little Mixers. Perfect work in any class of mixing. Emptied Clean, Batch of about 3 cubic ft. a minute. Only practical mixer for farmer or contractor. Satisfaction guaranteed or money refunded. Write for circulars or order from this advertisement to avoid delay. THE LITTLE WHIRLWIND MIXER CO., 427 Grand St., LA CROSSE, WIS.

**8 MEN CAN'T STICK IT!**

## Gloves at Cost

**BIG UNLOADING SALE**  
One dozen pair 9-ounce strongly made worn and durable Canvas Gloves, heavily fleeced \$1.95 cut full, sent prepaid for.....  
Made for farm work. Retail 25 cents pair. Money refunded if you are not satisfied. Send check or money order.  
**FARMERS GLOVE CO.,**  
DEPT. 16, MARION, INDIANA

## Steel Wheels

Cheaper than any other wheels **COST** when you figure years of service. Make any wagon good as new. Save labor—easy to load, **LESS** No repairs. Write for FREE Book **EMPIRE** Mfg. Co., Box 289 Quincy, Ill.



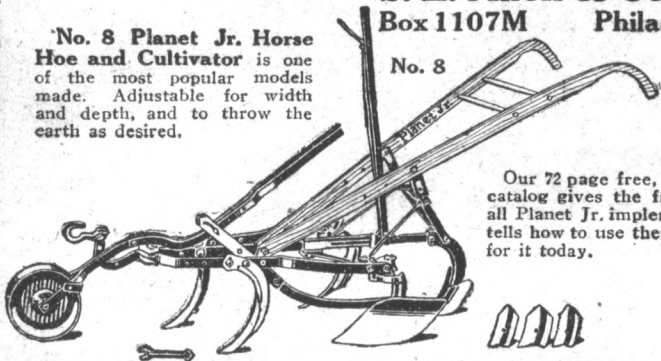
## Use a Planet Jr. and more acreage

With a Planet Jr. you can work faster and better than by the old methods, increasing your acreage and growing many times larger crops.

The secret of this efficiency lies in construction, the result of many years spent in study and experiment. During the half century since the first Planet Jr. was made, hundreds of improvements have been added, each one making the labor lighter or the work more thorough.

A Planet Jr. will last a lifetime. Fully guaranteed.

No. 8 Planet Jr. Horse Hoe and Cultivator is one of the most popular models made. Adjustable for width and depth, and to throw the earth as desired.



No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow plants all garden seeds, does all sorts of cultivating, hoeing and hilling.



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Our 72 page free, illustrated catalog gives the facts about all Planet Jr. implements and tells how to use them. Write for it today.

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## High Yields Make Low Costs

Increase the yield per acre, cut labor costs, improve the quality of your crop and lessen the danger from weather and insects by the liberal use of

# ROYSTER'S FERTILIZERS



Agents wanted in unoccupied territory

F. S. Royster Guano Co.  
Department C-19  
TOLEDO, OHIO



Mention The Michigan Farmer When Writing to Advertisers

## Buying Nursery Stock

By R. G. Kirby

BECAUSE of the high cost of nursery stock it seems that plantings have been reduced during the past few years. Many small fruit gardens have not been started. Some orchards have not been filled in where trees have died. Commercial orchards have not expanded as might have been the case if nursery stock had been cheaper.

At least some of the nursery companies are quoting stock at reduced prices. It will now pay the farmer to obtain catalogs and recent price lists and make at least some plans for increased plantings of first-class fruit. It pays to deal with reliable nurserymen who advertise in good farm papers. This is safer than buying of brokers who do not raise their own stock.

Tree agents are often criticized because of the poor quality of their stock. But an agent for a firm of known reliability is worthy of patronage. We should not fail to remember that many beautiful shrubs, profitable berry patches and thrifty orchard trees are growing now on farms where they would never have been planted had it not been for the persistent efforts of some nursery stock agent. Some of the agents may have sold poor varieties. But let us give the good ones a little credit for their work.

Nurserymen as a whole are very honest men who are in the business because they love fruit and flowers and like to deal in such products. They like to give satisfaction and do so in a large majority of cases. They know that their beautiful and expensive catalogs will not bring orders and repeat orders if they have the name of sending out poor quality stock that is not true to name.

Many of the offenses charged against nurserymen are due to carelessness on the part of the buyer. Possibly they may uncover and expose the roots of trees so they dry out. Then some of the trees die and it is blamed on the nurseryman. Sometimes the name tags are left on trees until the trees strangle. When live stock get in a young orchard and trim the leaves from young growing trees, it places a tax on the strength of those trees and many of them may die.

Trees that are carelessly planted may fail to thrive. Some seasons are more favorable to tree growth than others. The value of nursery stock cannot be determined at the time of sale and this makes the purchase uncertain and gives a chance for future misunderstandings. Several years after trees have been planted the fruit may prove untrue to name. Often this is due to mistakes in the nursery. Sometimes it is the buyer's fault. He may forget what he ordered or forget which trees are planted in a certain plot. He may send only a small order in cooperation with a neighbor. They may divide the trees hurriedly without carefully studying the tags and each grower may plant the wrong variety.

It is difficult to tell the variety of fruit a young tree will produce by the appearance of a young tree and only experienced fruit growers and nurserymen are able to tell and they might occasionally be mistaken. The inexperienced buyer has to place all trust in the nurseryman at the time of sale and for several years afterward. It is not surprising that a few mistakes occur. It is a wonder that so many buyers of trees have such good luck as they do.

In buying nursery stock it pays to know the varieties of commercial importance which have succeeded in the neighborhood. Do not pick out your nursery stock entirely from the fine pictures that appear in the catalogs. (Continued on page 167).



## The Man Behind the Strawberry

When you deal with Baldwin you have the advantage of a third of a century's experience in producing Strawberry Plants. That experience costs you nothing. It cost Baldwin years of toil; it's the measure of service and satisfaction you get with every purchase you make from

## BALDWIN

The best book ever issued on the growing of berry plants is now ready for you. One of 100,000 is yours for the asking. It gives you information on berry culture in a concise, practical form. It tells you how to get the biggest crop of the most delicious and finest fruit. No grower of berries can fail to appreciate the points of real value to be gleaned from this book. Baldwin's experience of more than thirty years, and Baldwin's supremacy in the berry plant field, assures you success. Grow berries for the home and for the market—profitable to yourself and of service to humanity.

## Baldwin's Methods Are Right.

We have made a lot of changes and improvements in our big plant business; but we have never wanted to change the policy of square dealing on which our business was established over thirty years ago. An honest, live-and-let-live policy through which we hope to hand down to our growing-up sons as untarnished a name and reputation as was handed down to us. We treat every order received from you just as we would treat you personally if you drove to our packing house for your plants.

Valuable detailed information—what the prospective customer needs to know about Berry Plants before he buys. Save a day. Write tonight.

O. A. D. BALDWIN

R. R. 16

Bridgman, Mich.



## Easy to Smoke Meat

### Wright's Smoke

made of hickory smoke. Easily applied with cloth or brush. Gives delicious flavor—does away with old smoke house—eliminates shrinkage and loss. Large \$1.25 bottle will smoke a barrel of meat—guaranteed.

### Wright's Ham Pickle

a scientific preparation for curing meat. Contains everything except salt. Cures meat better, with less work and gives delicious flavor. Guaranteed—your druggist has it.

Ask Your Dealer for genuine, guaranteed Wright's Smoke or Ham Pickle. Write us if your dealer can't supply you.

E. H. WRIGHT COMPANY, Ltd.  
832 Broadway, 5 Kansas City, Mo.

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PUT DOLLARS IN YOUR POCKET  
Learn how to grow and market  
table and seed potatoes at greater  
profit. Send 25c for 3 months to  
THE POTATO MAGAZINE  
City Hall Square Bldg. K Chicago, Ill.

# 25c

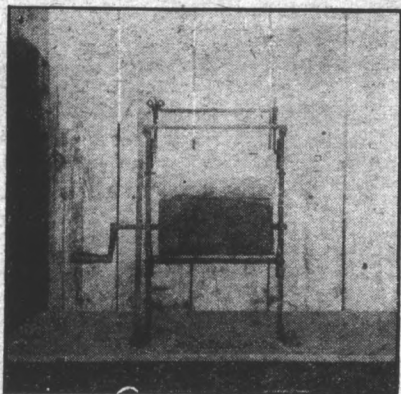


## HAND SEED THRESHER FOR THE FARM.

A SIMPLE mechanical device that aids greatly in separating seeds of the various vegetables from their pods or husks can be made in the farm workshop.

Pieces of wood 1x2 inches, or iron  $1\frac{1}{2} \times \frac{1}{4}$  inches and twenty-four inches long are first secured and shaped to become the upright portion of the frame. Quarter-inch holes are bored through these two pieces of iron or wood at distances from lower end as follows: 9-13-19 inches. Foot-pieces are bolted or riveted on one end of each upright piece and then a fourteen-inch top or cap piece is bolted or riveted on the opposite end. Two cross-rods sixteen inches long, threaded at both ends and supplied with two nuts at each end are run through the holes in the uprights and the nuts adjusted to make a rigid frame of uniform width.

A roller twelve inches long and seven inches in diameter is secured and a shaft securely fastened in its center. This roller or cylinder, preferably of



wood, is covered with corrugated rubber floor matting, the corrugations running parallel to the top of the frame. On the end of the shaft a small handle is placed, this being used to give a rotary motion to the cylinder.

The apron holder is made by threading the ends of a twenty-six-inch rod and then bending same to the shape of the letter U. The threaded ends are run through the top or cap piece. Small coil springs are placed on the threaded ends and then a thumb-nut for adjustment is put on.

The apron is made of heavy, rough canvas, turned and stitched at ends, so that a rod may be run through. The apron is suspended from the U bar and drawn tightly against the surface of the rubber-covered cylinder and held in position by a rod resting in brackets that are bolted to the upright portion of the frame. The canvas apron is tightened to suit the work by turning down the thumb-nuts. In operation the seed heads are placed on the upper surface of the cylinder. The discharge of threshed seed falls into a box placed at the base of the machine.

Or an old ringer frame, the tall type, may be used as the frame, using the iron rods and handle. If the holes are not at proper distances, new ones may be bored at proper distance, and the cylinder and apron adjusted.

EARLE W. GAGE.

During most of 1920 weight has been at a discount in the hog alleys. Early in the year the big growing stock of lard in packers' cellars made the heavy weights unpopular, and in the later months feeders held back light stock because of the profitable feeding ratio, so that light weights were much more scarce than usual, again putting them at a premium. Brisk fresh pork demand and increasing popularity of the lighter cuts were other factors helping out the heavy weights.

It is no more our business to keep our hogs healthy than it is to allow them to keep themselves healthy. Provide good sanitary quarters and they will do the rest.

**Why Case Tractor Bull Gears Resist Wear and Breakage**

CASE Tractor Bull Gears are made from high carbon steel billets, forged into one-piece, weldless rings. The method of manufacture—Case patented—is such that only steel absolutely free from flaws and defects can withstand, successfully, this process. If there is going to be any breakage, it occurs in the factory, before the gear is completed—not after it is on the tractor and the machine working in the field.

Hydraulic forging, annealing, heat treating, tempering in an oil bath, machining and cutting teeth to the accuracy of less than the thickness of a human hair—each of these important steps in the process of manufacturing Case Tractor Bull Gears contributes materially to the true-running qualities, smooth operation, and long life of Case Kerosene Tractors.

The wear-resisting hardness, breakage-defying toughness, and permanently perfect mesh of Case Bull Gears, are features characteristic of Case manufacturing thoroughness in all details.

**J. I. Case Threshing Machine Company**  
Dept. B16 Racine, Wisconsin

**CASE**  
KEROSENE TRACTORS

Above: Cover removed from housing to show Case Tractor Bull Gear and Pinions.  
Below: Special machines accurately cut Case Bull Gear Teeth.

The J. I. Case Threshing Machine Company extends to all farmers an invitation to attend the Sixth National Tractor Show and Educational Exposition at Columbus, Ohio, Feb. 7th to 12th. Address: Tractor Show Manager, Columbus, Ohio, or write to us for registration card that will entitle you to free admission.  
See Case exhibits in Coliseum Building, Space 3, 4 and 5.

## GREEN'S Trees & Shrubs

### Are the Careful Planter's First Choice

- Because we grow only the best varieties in fruit trees, small fruits and garden plants.
- Because our trees are true to name.
- Because we sell direct and lower the cost.

We grow everything for orchard and garden. Highest quality trees on whole roots. Apple, pear, peach, cherry, nut and shade trees. Gooseberry, raspberry, blackberry and currant bushes, strawberry plants, shrubs, roses, ornamentals. Over 40 years experience at your service.

SYRACUSE, a great, new, red raspberry: CACO, the best new, large, red grape: ROCHESTER peach and HONEY-SWEET, a fine black-cap raspberry are wonderful producers.

Send for our free catalogue today

**GREEN'S NURSERY COMPANY**  
Box 31 Rochester, N. Y.



## SEEDS

Reliable and Full of Life  
**SPECIAL OFFER**  
Made to build New Business. A trial will make you our permanent customer.

**PRIZE COLLECTION** Radish, 17 varieties, worth 15c; Lettuce, 12 kinds, worth 15c; Tomatoes, 11 the finest, worth 20c; Turnips, 7 Splendid, worth 10c; Onions, 8 best varieties, worth 15c; 10 Spring Flowering Bulbs, worth 25c. 65 varieties in all; worth \$1.

**GUARANTEED TO PLEASE**  
Write today; mention this paper.

**SEND 10 CENTS**  
to cover postage and packing and receive this valuable collection of seeds postpaid, together with my big instructive, beautiful Seed and Plant Book, tells all about Buckbee's "Full of Life" Seeds, Plants, etc.

**H.W. BUCKBEE**  
Rockford Seed Farms  
Farm 292 Rockford, Ill.

## CLOVER AT WHOLESALE

We save you money. Illinois crop of excellent quality. Buy now while crop is moving. Prices sure to be higher later. Don't buy field seeds of any kind until you see our samples and prices. We specialize on guaranteed Quality Clover, Timothy, Alfalfa, Alsike and Sweet Clover, shipped subject to your approval and test. Write today for Free Samples, Prices, Big Seed Guide.

**American Mutual Seed Co.** Dept. 131 Chicago, Ill.



## Engine troubles caused by inferior piston rings

**T**HIS chart shows you clearly how piston rings perform the most vital work of the gasoline engine — the sealing of the firing chamber.

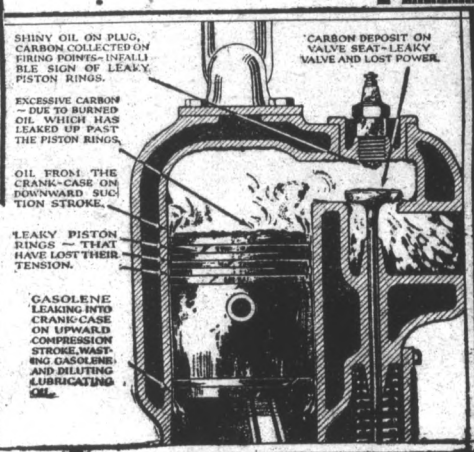
You can't get full power, full mileage, or economy of operation when your piston rings leak. The only remedy is to put in the leakless kind.

American Hammered Piston Rings are leakless, because even, outward pressure; necessary for uniform contact with the cylinder wall, is machine-hammered into them. They hold compression — permanently.

You can get them for your engine — from your garage man.

### American Hammered Piston Rings

AMERICAN HAMMERED  
PISTON RING COMPANY  
Baltimore, Maryland



## FARM ELECTRIC EQUIPMENT

At Greatly Reduced Prices

Including latest models, well known Electric Light Plants, Automatic water systems, power stands, vacuum cleaners. For prices and information address

P. O. Box No. 64  
Arcade Station, Columbus, O.



## BRIGHAM'S SOFT GROUND HORSE SHOE

With the use of this SHOE all the low, wet portions of the Farm are made tillable. Send for circular  
J. F. BRIGHAM, Manufacturer, Decatur, Mich.

## FARM HELP

**Position** Wanted as manager of modern farm, or one that will be made so, married, one child, Protestant, lifetime experience in farming, fruit growing, stock raising and machinery. 13 years in present position. 6 winters at Agricultural Colleges, very best references. Box E-G-123, co Mich. Farmer, Detroit.

**Farm Hand Wanted** on stock farm—no milking. Married man with small family desired to work by the year. School, church, store and R. R. station on farm. State wages demanded and give references in first letter. O. F. Foster, Pavilion, Mich.

**Wanted—March First** Steady married man to operate a 250 A. farm on salary. Good proposition for man not afraid of work. Buildings new and convenient. 708 Calvert Ave., Detroit, Michigan.

**Wanted** By competent man and wife, farm to rent. Two children in early teens. Write E. E. Wise, Convey, O.

**Wanted** March first. Married man to work farm on shares. 200 A. good work land. Good buildings. 708 Calvert Ave., Detroit, Mich.

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Build your silo with vitrified tile and you build but once. Eliminate repair bills, do away with painting and water-proofing and insure perfect protection from weather conditions by building



## Preston Lansing

Vitrified Tile Silo

The tile silo with "ship-lap" blocks—make more beautiful, stronger walls—and lasts for ages. Blocks all uniform shade. Re-enforced by twisted steel. Steel hip-roof, steel or tile chute—fireproof.

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J. M. Preston Company  
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**Learn Auto**  
and Tractor Business  
Earn \$150 to \$400 a Month  
Right in your own neighborhood get into big-paying business. Learn in 6 to 8 Weeks. Work on real Autos, Trucks, Tractors. Write today for FREE 66-page Opportunity Book.  
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**WONDERFUL SEED VALUES**  
New Crop tested vegetable seed. Special prices on small fruit. Catalog. Ransom Farm, Bx2, Geneva, O.

# Upper Peninsula News

By L. A. Chase

**M**ARQUETTE'S experience with its new tractor snowplow for clearing sidewalks is very satisfactory. The plow arrived just in time to be put in service following a heavy snow storm of last week. Usually in such cases there is considerable delay before the walks are cleared of snow, and then the work is poorly done with a team-drawn wooden plow, which slides over the surface of the snow without doing a clean job. I had the opportunity of following in the wake of the plow on its maiden trip and was more than pleased with its operation. The walks were left smooth and with only a thin coating of snow, so that their use was easy. It was estimated that on its initial trial the plow did work at a rate that, under the old system, would have required six teams of horses and twelve men. Horses for this work are in fact now quite impossible to get here. One man handled the tractor plow. This new plow cost \$1,800, weighs about 3,500 pounds, is of twelve horsepower on the draw-bar. The wings can be spread nine feet. A larger plow would be required for street work, but the foregoing specifications appear ample for sidewalk clearing. Plows of this character, made farther south, do not sufficiently allow for the probable depth of snow that may be encountered, and the wings should be wider on the vertical. This can be easily adjusted, however. On its maiden trip, the Marquette plow cleared some twenty-seven miles of walks in seven hours. It is felt that Superintendent of Streets C. A. Pearce, and the city commission, have done much to make winter life in Marquette more livable.

Since the snow of last week, the weather here has greatly moderated, and the recent April-like days are disconcerting to the weather prophets of last fall, who prognosticated that, because the autumn was unseasonably warm, dire times were ahead for the post-holiday period. It has not worked out that way. We have had no zero weather here as yet, and the ground will soon be bare—as it now is in spots—unless lower temperature returns.

### Farm Bureau Branch.

I have received a statement from Mr. J. Wade Weston, assistant state leader of county agents in the upper peninsula, in regard to the recent meeting at Escanaba which considered the proposal to establish a branch office of the State Farm Bureau north of the Straits. The meeting considered three aspects of the problem: The type of work to be done, the location of the office, the qualification of the manager of the office. In regard to the first point, it was agreed that the buying and selling organization should be centered at Lansing. The office should assist the upper peninsula counties in pooling orders for seeds, feeds and fertilizers, and should develop markets in our consumption centers for our agricultural products. The office should assist local cooperative organizations by providing them with information regarding improved methods of doing a cooperative business. The office should promote loyalty to the farm bureau organizations, local, state and national. It should gather information apropos cooperation in the upper peninsula. It should furnish expert assistance to locals where needed. Through cooperation with the county agents, the office would promote standardization, grading and the improvement of quality of our agricultural products. In considering the location of the central office, it was agreed that the location should be one which would reach all points in the upper peninsula at least expense. The statement says that computations

with Escanaba as a travel center gives the total mileage to reach all points at 1,598 miles. Similarly Marquette as a travel center requires 1,393 miles. But Escanaba has the advantage as regards the farm bureau membership available to itself by one-half of one per cent. This latter statement is dependent upon a certain membership in Ontonagon and Mackinac counties being obtained next spring. The present membership gives Escanaba an advantage of three and seven-tenths per cent in membership miles. "The actual miles travelled to reach the places where farm bureau work will be done is represented by an advantage to Marquette of seven per cent," says the statement. The train schedules are also favorable to Marquette in comparison with Escanaba. Finally, with reference to the qualifications of the office manager, it is held that he should understand the basic principles of agriculture, understand the upper peninsula, and also be a keen business man.

At the Escanaba meeting, Robert Blemhuber, of Marquette, upper peninsula member of the executive committee of the State Farm Bureau, and R. V. Tanner represented the State Farm Bureau, while Messrs. Kirshman, Miller and Moser, Pattison, Pressley and Weston presented facts, figures and arguments on the part of the agricultural agents and the upper peninsula interests.

### Work in Dickinson County.

Agent Carl Miller's news letter, just received, shows that Dickinson county now has 433 signed-up farm bureau members. About 15,500 pounds of clover, timothy and alfalfa seed have been ordered for members in this county. Mr. Miller is recommending a straight sixteen per cent acid phosphate as best for their purposes. Several Dickinson county farmers, it appears, have now installed their own electric light plants, where it has been impossible to tap power transmission lines. Mr. Miller also reminds his readers that the new forestry department of the State Farm Bureau may be able to handle their output of fence posts and ties. The Dickinson County Fair will occur September 2-3-5, 1921.

In a series of farmers' meetings in Gogebic county, the subjects of seed selection, bull associations and wool pool policy have been discussed. The Daily Globe of Ironwood, reports an intention to arrange a special class of entry of junior breeders' live stock at the annual county fair each year, which it is believed, will tend to afford a greater incentive for growing more high-grade live stock in that county.

Mr. A. G. Kettunen, upper peninsula leader of Boys' Clubs, has taken up with Mr. Carl Silberg, superintendent of the Irwin township schools, the Globe reports, a plan of establishing handicap projects in the school system. Several service men have been placed with the Menominee County Agricultural School by the Federal Board for Vocational Education, and more are expected there. The school gives work in agricultural and mechanics.

Following the holiday season, Ishpeming garbage collectors removed about one thousand Christmas trees, the larger of which have been set up alongside the highways as snow fences.

There are very few successful peach growers who advocate sod culture. The best results come from working the soil during the time when the trees are growing and sowing a cover crop for fall and winter, and plowing it under early in the spring. Cover crops should not be left until they suck too much moisture from the soil at a time when it is needed by the trees.



## A SERVICEABLE TYPE OF HORSE.

THE animal husbandry division of the Department of Agriculture is able to report considerable progress in its efforts to develop a truly American type of general-purpose horse. The work is being carried on at Buffalo, Wyoming, in connection with the state. There are now at the station thirteen stallions and twenty-five brood mares that conform closely to the type and characteristics desired.

Dr. George M. Rommel, chief of the division, says he is trying to develop a general-purpose horse bred without a drop of draft blood. His aim is an animal weighing from twelve hundred to fourteen hundred pounds, and sixteen to sixteen two-tenths hands high, an upstanding, active horse, with good form and action. There is a place for such horses in the western mounted region, and also in some eastern sections, especially in the hilly country. The heavier machinery now in use, even on eastern hill farms, makes a heavier team than those now found, a necessity.

The work of developing this breed was begun sixteen years ago. The stallions used are all standard-bred. The type is well fixed, and it is probable that a name will be given the new breed at an early date, and it will take a favorable place alongside the older breeds.

Dr. Rommel says that one need of the farms now are men and boys who know how to handle horses to the best



On this specially prepared Antrim County ground Potatoes are reported to have yielded at the rate of 504½ bushels per acre.

advantage. The common farm hands of today do not know how to handle the warm-blooded active horses.

The Morgan horse farm at Middlebury, Vermont, had the finest crop of colts last year since the government operated it. The Bureau of Animal Husbandry is breeding to hold the Morgan type, but adding to the size. Dr. Rommel believes it would be a great national loss if the Morgan breed were ever allowed to die out.—R.

## WOOL STATISTICS CHANGE LITTLE.

Wool market investigators in the Bureau of Markets say there has been no change worthy of mention in the wool situation since the last report was issued some time ago. Reports received from industrial centers say that unemployment is heavy and there is little demand for wool goods. A brief reference to the situation was made by J. P. Wood, of Philadelphia, in his testimony before the senate finance committee. Colonel Wood said the cloth mill in which he was interested closed down six months ago, on account of cancellations of orders, and had received no orders since. It has on hand an accumulation of stock which has depreciated \$200,000 in value owing to shrinkage in prices.—R.



FROM A 2A BROWNIE NEGATIVE.

After all, pictures of the children, just every day pictures in and about the home are the ones we care for most. Such pictures are easily made with a Kodak or Brownie and the expense is less than you think.

Ask your dealer or write us for a catalogue of Kodaks and Brownies.

Eastman Kodak Company, Rochester, N. Y., The Kodak City

## Sow Seeds of Success In Your Garden

### Write Today for Isbell's 1921 Catalog

Some vegetable gardens pay their owners \$100 in returns for every \$5.00 spent. They are a constant source of big profit. They give pleasure to everybody in the home—old and young alike. They yield the finest vegetables and yield lots of them, because they are planted with—

**Isbell's Seeds**  
As They Grow Their Fame Grows  
For FIELD TRADE MARK For GARDEN

**Isbell's Gardens Pay**—for the same reason that pure-bred cattle produce thoroughbred off-spring. Every ounce of Isbell Seed is tested. Isbell Seeds are produced in the North where earliness, hardiness and sterling qualities are bred into them. Isbell's 1921 book on seeds and gardening tells what and how to plant and what to expect from the crop. It's one of the most authoritative catalogs in America. Ask for your copy. Mail coupon.

**S. M. ISBELL & CO.**  
317 Mechanic St., Jackson, Mich.

### Free Catalog Coupon

Gentlemen:—  
Without obligation, send me your 1921 Catalog of Isbell's Seeds

Name \_\_\_\_\_  
Address \_\_\_\_\_

## GOOD SEEDS

Grown From Select Stock —None Better— 50 years selling seeds. Prices below all others. Buy and test. If not O.K. return and I will refund. Extra packets sent free in all orders I fill. Send address for Big Catalogue illustrated with over 700 pictures of vegetables and flowers of every variety.  
R. H. SHUMWAY, Rockford, Ill.

### Condon's NEW PROSPERITY CABBAGE

Quick as lightning. Hard as stone. One of the earliest in existence. To introduce our Northern Grown "Sure Crop" Live Seeds we will mail you 200 seeds of Condon's New Prosperity Cabbage and our Big 1921 GARDEN and FARM GUIDE. Send Postal Today for your free copy and Trial Package.  
**CONDON BROS., SEEDSMEN,**  
Rock River Valley Seed Farm  
Box 172, ROCKFORD, ILLINOIS

### SUDAN GRASS 8¢ per lb.

Wonder crop of the Age. Makes two tons from where one grew before. Produces a hay crop in 60 days after sowing. All livestock thrive on this nutritious crop. May be used for pasture or cut for hay. Hay—re-cleaned tested Timothy \$3.95 bu. Unhulled Sweet Clover \$4.50 bu. Clover and other field seeds at low prices. Write today for Free Samples and Big Seed Guide.  
American Mutual Seed Co., Dept. 231, Chicago, Ill.

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NATIONAL CLOAK & SUIT CO.

**R**EADERS of "Michigan Farmer," here is a message of Lower Prices, of Better Styles and more Lasting Satisfaction than you have known before.

The "NATIONAL" Money-Saving Style Book pictured here, offers you complete the best New York Styles for Spring in everything for women's, men's and children's wear and at lowest prices.

To have this book in your home is to have a price standard, a standard of values. To study it is to know the new styles and the new prices—the lowest prices for Spring.

## Economize on Your Spring Clothes

Economize by getting better quality, "NATIONAL" time-tried quality—at lowest prices. Prices are now down to the level that they were some years ago and the quality of "NATIONAL" goods is pre-war quality always.

## Here Are the New Prices—The Lowest Prices

Silk Taffeta Dresses last Spring were from \$21.98 to \$54.50. This Spring's prices are from \$11.98 to \$25.00.

Women's All-Wool Coats—Last Spring's prices were \$18.98 to \$67.50. This Spring's prices are \$9.98 to \$32.50.

Georgette Waists that last year were from \$6.98 to \$21.50 are this year from \$3.25 to \$10.95. We also have a complete selection of other beautiful waists at from 98¢ to \$5.98.

If You Live In One of the States listed below write to our Kansas City house for your copy of the "NATIONAL" Style Book. The Kansas City Style Book is exactly the same as the New York Book—the same New York styles—the same New York qualities—the same New York prices. The only difference is, that Kansas City, being nearer to you, you will get your orders quicker.

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## THE VOICE OF THE PACK

By EDISON MARSHALL

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He hadn't considered that the tree lay on a steep slope. As the blade fell, the great trunk simply seemed to leap. Lennox leaped too, in a frenzied effort to save his life; but already the leafy bows, like the tendrils of some great amphibian, had whipped around his legs. He fell, struggling; and then a curious darkness, streaked with flame, dropped down upon him.

An hour later he found himself lying on the still hillside, knowing only a great wonderment. At first his only impulse was to go back to sleep. He didn't understand the grayness that had come upon the mountain world, his own strange feeling of numbness, of endless soaring through infinite spaces. But he was a mountain man, and that meant he was schooled, beyond all things, to keep his self-control. He made himself remember. It was the cruellest work he had ever done, and it seemed to him that his brain would shiver to pieces from the effort. Yes—he had been cutting wood on the hillside, and the shadows had been long. He had been wondering whether or not they should go down to the valleys.

He remembered now: the last blow and the rolling log. He tried to turn his head to look up to the hill.

He found himself wholly unable to do it. Something wracked him in his neck when he tried to move. But he did glance down. And yes, he could turn in this direction. And he saw the great tree trunk lying twenty feet below him, wedged in between the young pines.

He was surrounded by broken fragments of limbs, and it was evident that the tree had not struck him a full blow. The limbs had protected him to some extent. No man is of such mold as to be crushed under the solid weight of

the trunk and live to remember it. He wondered if this were the frontier of death—the grayness that lingered over him. He seemed to be soaring.

He brought himself back to earth and tried again to remember. Of course, the twilight had fallen. It had been late afternoon when he had cut the tree. His hand stole along his body; and then, for the first time, a hideous sickness came upon him. His hand was warm and wet when he brought it up. The other hand he couldn't stretch at all.

The forest was silent around him, except bird calling somewhere near the house—a full voice, rich and clear, and it seemed to him that it had a quality of distress. Then he recognized it. It was the voice of his own daughter, Snowbird, calling for him. He tried to answer her.

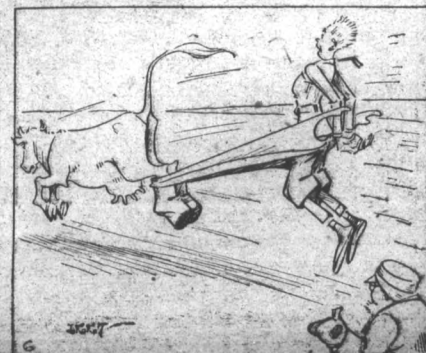
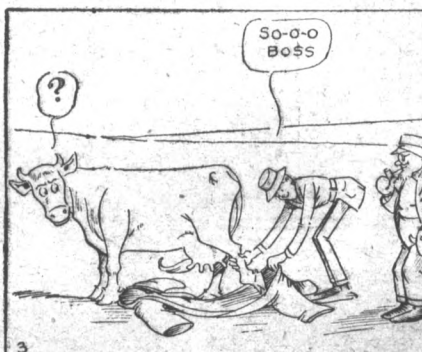
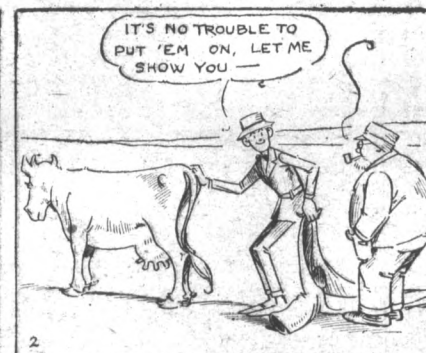
It was only a whisper, at first. Yet she was coming nearer; and her own voice sounded louder. "Here, Snowbird," he called again. She heard him then: he could tell by the startled tone of her reply. The next instant she was at his side, her tears dropping on his face.

With a tremendous effort of will, he recalled his speeding faculties. "I don't think I'm badly hurt," he told her very quietly. "A few ribs broken—and a leg. But we'll have to winter here on the Divide, Snowbird."

"What does it matter, if you live," she cried. She crawled along the pine needles beside him, and tore his shirt from his breast. He was rapidly sinking into unconsciousness. The thing she dreaded most—that his back might be broken—was evidently not true. There were, as he said, broken ribs, and evidently one severe fracture of the leg bone. Whether he had sus-

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tained internal injuries that would end his life before morning, she had no way of knowing.

At that point, the problem of saving her father's life fell wholly into her hands. It was perfectly plain that he could not aid himself in the slightest way. It was evident, also, he could not be moved, except possibly for the distance to the house. She banished all impulse toward hysteria and at once began to consider all phases of the case.

His broken body could not be carried over the mountain road to physicians in the valleys. They must be transported to the ranch. It would take them a full day to make the trip, even if she could get word to them at once; and twenty-four hours without medical attention would probably cost her father his life. The nearest telephone was at the ranger station, twelve miles distant over a mountain trail. The telephone line to Bald Mountain, four miles off, had been disconnected when the rains had ended the peril of the forest fire.

It all depended upon her. Bill was driving cattle into the valleys, and he and his men had in use all the horses on the ranch with one exception. The remaining horse had been ridden by Dan to some distant marshes, and as Dan would shoot until sunset, that meant he would not return until ten o'clock. There was no road for a car to the ranger station, only a rough steep trail, and she remembered, with a sinking heart, that one of Bill's missions in the valley was to procure a new lighting system. By no conceivable possibility could she drive down that mountain road in the darkness. But she was somewhat relieved by the thought that in all probability she could walk twelve miles across the mountains to the ranger station in much less time than she could drive, by automobile, seventy miles down to the ranches at the foothills about the valley.

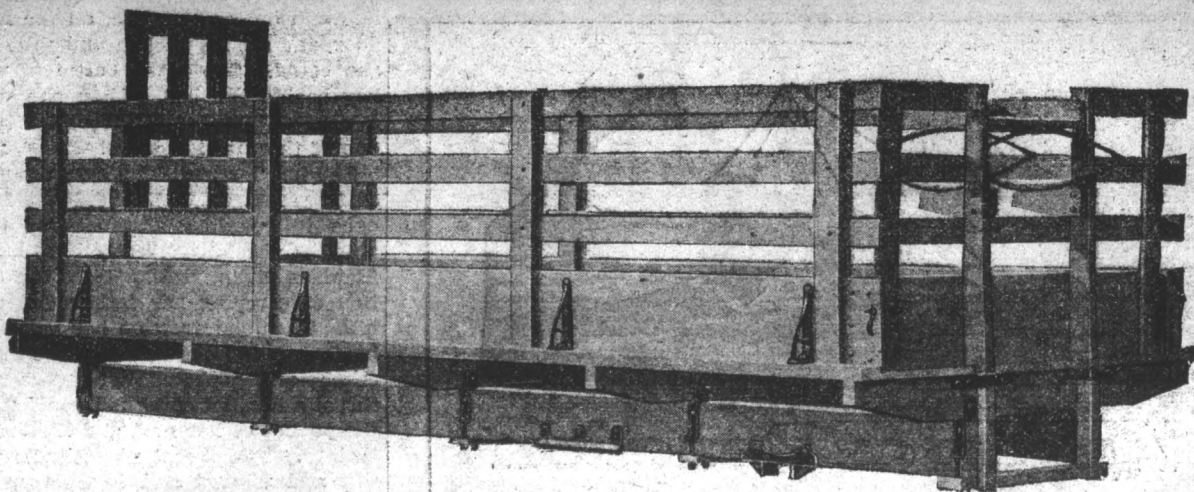
Besides, she remembered with a gladdening heart that Richards, one of the rangers, had been a student at a medical college and had taken a position with the forest service to regain his health. She would cross the ridge to the station, phone for a doctor in the valleys, and would return on horseback with Richards for such first aid as he could give. The only problem that remained was that of getting her father into the house.

He was stirring a little now. Evidently consciousness was returning to him. And then she thanked Heaven for the few simple lessons in first aid that her father had taught her in the days before his carelessness had come upon him. He had been wise enough to know that rare would be her fortune if sometime she did not have need of such knowledge.

One of his first lessons had been that of carrying an unconscious human form—a method by which even a woman may carry, for a short distance, a heavy man. It was approximately the method used in carrying wounded in No Man's Land; the body thrown over the shoulders, one arm through the fork of the legs to the wounded man's hand. Her father was not a particularly heavy man, and she was an exceptionally strong young woman. She knew at once that this problem was solved.

The hardest part was lifting him to her shoulders. Only by calling upon her last ounce of strength, and tugging upward with her arms, was she able to do it. But it was fairly easy, in her desperation, to carry him down the hill. What rest she got she took by leaning against a tree, the limp body still across her shoulders.

It was a distance of one hundred yards in all. No muscles but those trained by the outdoors, no lungs except those made strong by the mountain air, could have stood the test. She



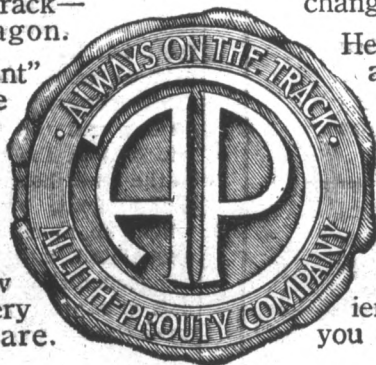
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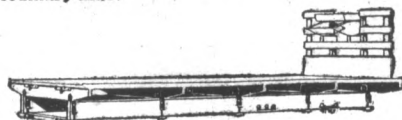
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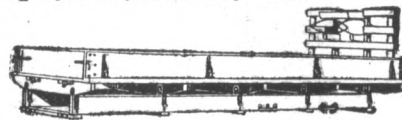
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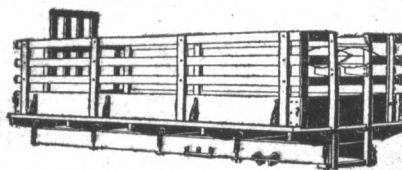
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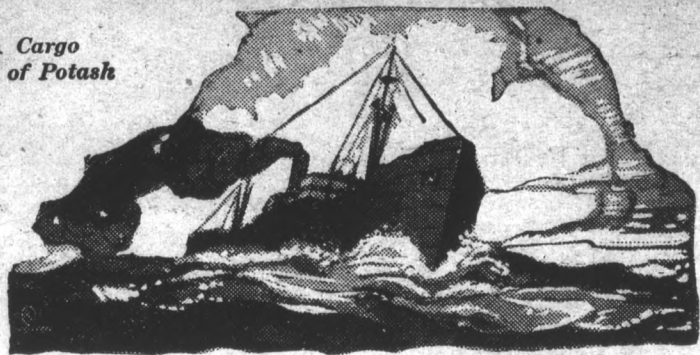
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laid him on his own bed, on the lower floor, and set his broken limbs the best she could. She set a bottle of whiskey beside the bed. Then she wrote a note to Dan and fastened it upon one of the interior doors.

She had learned, long ago, the value of frequent rests. She did not fly at once to her long tramp. For three minutes she lay perfectly limp on the fireplace divan, resting from the exertion of carrying her father down the hill. Then she drew on her hob-nailed boots—needed sorely for the steep climb—and pocketed her pistol. She thrust a handful of jerked venison into the pocket of her coat and lighted the lantern. The forest night had fallen, soft and vibrant and tremulous, over the heads of the dark trees when she started out.

Far away on a distant hillside, Whispermoot the cougar howled and complained because he could find no deer.

### CHAPTER IX.

SNOWBIRD felt very glad of her intimate, accurate knowledge of the whole region of the Divide. In her infancy the winding trails had been her playground, and long ago she had acquired the mountaineer's sixth sense for traversing them at night. She had need of that knowledge now. The moon was dim beneath thin clouds, and the lantern she carried did not promise much aid. The glass was rather smoked from previous burnings, and its flame glowed dully and threatened to go out altogether. It cast a few lame beams on the trail beneath her feet; but they perished quickly in the expanse of darkness.

She slipped into her free, swinging stride; and the last beams from the windows of the house were soon lost in the pines behind her. It was one of those silent, breathless nights with which no mountaineer is entirely unacquainted, and for a long time the only sound she could hear was her own soft tramp in the pine needles. The trees themselves were motionless. That peculiar sound, not greatly different from that of running water which the wind often makes in the pine tops, was entirely lacking. Not that she could be deceived by it—as stories tell that certain tenderfeet, dying of thirst in the barren hills, have been. But she always liked the sound; and she missed it especially tonight.

She felt that if she would stop to listen, there would be many faint sounds in the thickets—those little hushed noises that the wild things make to remind the night-wanderers of their presence. But she did not in the least care to hear these sounds. They do not tend toward peace of mind on a long walk over the ridges.

The wilderness began at once. Whatever influence toward civilization her father's house had brought to the wilds chopped off as beneath a blade in the first fringe of pines. This is altogether characteristic of the Oregon forests. They are much too big and too old to be tamed in any large degree by the presence of one house. No one knew this fact better than Lennox himself who, in a hard winter of four years before, had looked out of his window to find the wolf pack ranged in a hungry circle about his house. Within two hundred yards after she had passed through her father's door, she was perfectly aware that the wild was stirring and throbbing with life about her. At first she tried very hard to think of other things. But the attempt wasn't entirely a success. And before she had covered the first of the twelve miles, the sounds that from the first had been knocking at the door of her consciousness began to make an entrance.

If a person lies still long enough, he can usually hear his heart beating and the flow of his blood in his arteries. Any sound, no matter how faint, will make itself heard at last. It was this way with a very peculiar noise that

crept up through the silence from the trail behind her. She wouldn't give it any heed at first. But in a very little while indeed, it grew so insistent that she could no longer disregard it.

Some living creature was trotting along on the trail behind, keeping approximately the same distance between them.

Foregoing any attempt to ignore it, she set her cool young mind to thinking what manner of beast it might be. Its step was not greatly different from that of a large dog—except possibly a dog would have made slightly more noise. Yet she couldn't even be sure of this basic premise, because this animal, whatever it might be, had at first seemingly moved with utmost caution, but now took less care with its step than is customary with the wild denizens of the woods. A wolf, for instance, can simply drift when it wishes, and the silence of a cougar is a name. Yet unless her pursuer were a dog, which seemed entirely unlikely, it was certainly one of these two. She would have liked very much to believe the step was that of Old Woof, the bear, suddenly curious as to what this dim light of hers might be; but she couldn't bring herself to accept the lie. Woof, except when wounded or cornered, is the most amiable creature in the Oregon woods, and it would give her almost a sense of security to have him waddling along behind her. The wolves and cougar, remembering the arms of Woof, would not be nearly so curious. But unfortunately, the black bear had never done such a thing in the memory of man, and if he had, he would have made six times as much noise. He can go fairly softly when he is stalking, but when he is obliged to trot—as he would be obliged to do to keep up with a swift-walking human figure—he cracks twigs like a rolling log. She had the impression that the animal behind had been passing like smoke at first, but wasn't taking the trouble to do it now.

The sound was a soft pit-pat on the trail—sometimes entirely obliterated but always recurring when she began to believe that she had only fancied its presence. Sometimes a twig, rain-soaked though it was, cracked beneath a heavy foot, and again and again she heard the brush crushing and rustling as something passed through. Behind it all, a wierd motif, remained the pat-pat of cushioned feet. Sometimes when the trail was covered with soft pine needles, it was practically indistinguishable. She had to strain to hear it—and it is not pleasing to the spirit to have to strain to hear any sound. On the bare, rain-packed earth, even untrained plainmen's ears could not possibly doubt the reality of the sound.

The animal was approximately one hundred feet behind. It wasn't a wolf, she thought. The wolves ran in packs this season, and except in winter were more afraid of human beings than any other living creature. It wasn't a lynx—one of those curiosity-devoured little felines that will mew all day on a trail and never dare come near. It was much too large for a lynx. The feet fell too solidly. She had already given up the idea that it could be Woof. There were no dogs in the mountains to follow at heel; and she had no desire whatever to meet Shag, the faithful hybrid that used to be her guardian in the hills. For Shag had gone to his well-deserved rest several seasons before. Two other possibilities remained. One was that this follower was a human being, the other that it was a cougar.

Ordinarily a human being is much more potentially dangerous to a woman in the hills at night than a cougar. A cougar is an abject coward and some men are not. But Snowbird felt herself entirely capable of handling any human foes. They would have no advantage over her; they would have no purpose in killing from ambush; and



she trusted to her own marksmanship implicitly. While it is an extremely difficult thing to shoot at a cougar leaping from the thicket, a tall man standing on a trail presents an easy target. Besides, she had a vague sense of discomfort that if this animal were a cougar, he wasn't acting true to form. He was altogether too bold.

She knew perfectly that many times since men came to live in the pine-clad mountains they have been followed by the great, fawny cats. Curiosity had something to do with it, and perhaps less pleasing reasons. But any dreadful instincts that such a cat may have, he utterly lacks courage to obey. He has an inborn fear of men, a fear that goes down to the roots of the world, and he simply doesn't dare make an attack. It was always a rather distressing experience, but nothing ever came of it except a good tale around a fireside. But most of these episodes, Snowbird remembered, occurred either in daylight or in the dry season. The reason was obviously that in the damp woods or at night a stalking cougar cannot be perceived by human senses. Her own senses could perceive this animal all too plainly—and the fact suggested unpleasant possibilities.

The animal on the trail behind her was taking no care at all to go silently. He was simply pat-patting along, wholly at his ease. He acted as if the fear that men have instilled in his breed was somehow missing. And that is why she instinctively tried to hurry on the trail.

The step kept pace. For a long mile, up a barren ridge, she heard every step it made. Then, as the brush closed deeper around her, she couldn't hear it at all.

She hurried on, straining to the silence. No, the sound was stopped. Could it be that the animal, fearful at last, had turned from her trail? And then for the first time a gasp that was not greatly different from a despairing sob caught at her throat. She heard the steps again, and they were in the thickets just beside her.

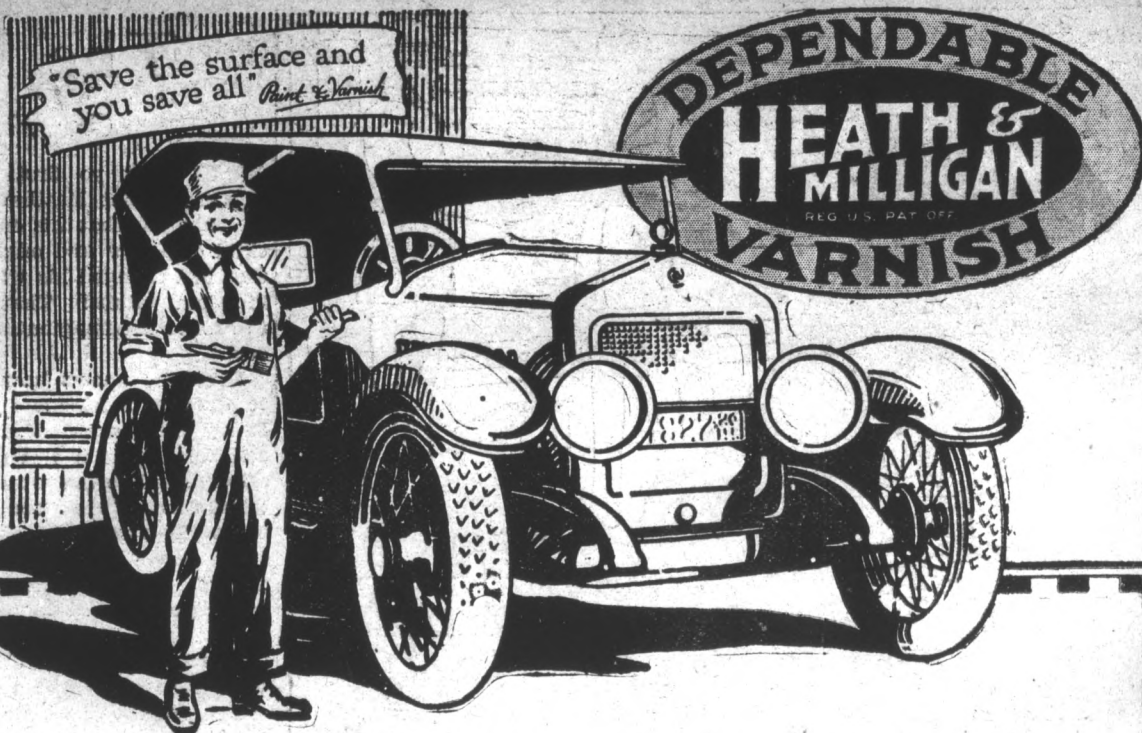
Two hours before Snowbird had left the house, on her long tramp to the ranger station, Dan had started home. He hadn't shot until sunset, as he had planned. The rear guard of the waterfowl—hardy birds who spent most of the winter in the lake region and which had come south in the great flight that had been completed some weeks before—had passed in hundreds over his blind, and he had obtained the limit he had set upon himself—ten drake mallards—by four o'clock in the afternoon. If he had stayed to shoot longer, his birds would have been wasted. So he started back along a certain winding trail that led through the thickets and which would, if followed long enough, carry him to the road that led to the valleys.

He rode one of Lennox's cattle ponies, the only piece of horse-flesh that Bill had not taken to the valleys when he had driven down the live stock. She was a pretty bay, a spirited, high-bred mare that could whip about on her hind legs at the touch of the rein on her neck. She made good time along the trail. And an hour before sunset he passed the only human habitation between the marsh and Lennox's house—the cabin that had been recently occupied by Landy Hildreth.

He glanced at the place as he passed and saw that it was deserted. No smell of wood smoke remained in the air. Evidently Landy had gone down to the settlements with his precious testimony in regard to the arson ring. Yet it was curious that no word had been heard of him. As far as Dan knew, neither the courts nor the forest service had taken action.

He hurried on, four miles farther. The trail entered the heavy thickets, and he had to ride slowly. It was as

(Continued on next page).



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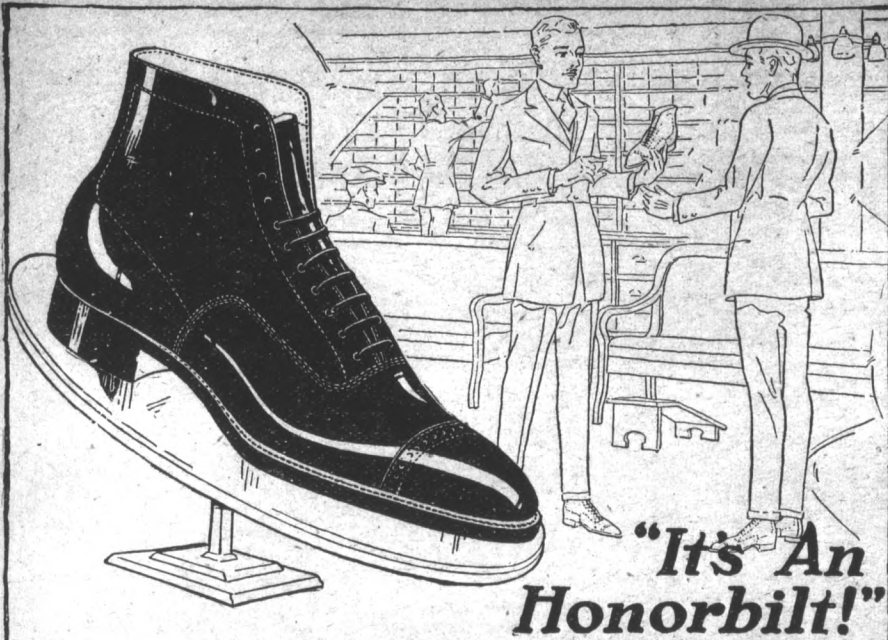
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Additional Poultry Ads. on Page 163





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## The Kingdom Within

*Our Weekly Sermon—By N. A. McCune*

**B**UT seek ye first his kingdom," says Saint Matthew, and we can imagine that this outburst was the child of a new and mighty experience that had changed his whole outlook. A kingdom within! That is something to arouse the imagination and stir the soul.

Everyone knows how difficult it is to develop a kingdom in the world. Every European nation has tried it, and bolshevism is trying it now. One often feels like the youth in the French Revolution: "How could the heavens be so clean and calm above, while the earth beneath was so stormy and dark?" But the Master of the soul, looking at men said, "The kingdom of heaven is within you."

Passing through a chemical laboratory, the visitor sees a set of delicate scales, inclosed in a glass case. They are kept thus inclosed, so that no dust or dampness can come near. These scales must be accurate. They must be able to weigh the merest grain, and weigh it accurately. And here is the soul. It is a vastly more delicate instrument than metric scales. It, too, depends for its strength upon its freedom from soil and dirt. And this is the seat of the kingdom. A man who has no kingdom within himself certainly cannot create one without, for the outer is the reflection of the inner. And this inner kingdom was no imaginary thing, to the early Christians. They sang in prison, and they were content when persecution drove them far from home. When Paul and Silas sang in the jail, the jailer admitted right then and there, that they possessed something to which he was a total stranger.

**A**ND the entrance to this kingdom is faith. That sounds just like a sermon, doesn't it? Preachers are always talking about faith. But faith is also the entrance to every worthy enterprise. It is the reasonable way, and the scientific way, and in fact the only way. That is the way the explorers found new lands and new waterways. Columbus waited and hoped. He was certain there were secrets to be found beyond the seas. His faith was childlike. And he had his reward, beyond his wildest dreams. He looked for a new route to India. He found a new world. Childlike trust has been a characteristic of all inventors. While others made remarks, they were making experiments. And trust, or faith, or confidence, or optimism, call it what you will, has always been at its best in religion. The unbeliever shuts himself out of the kingdom. He closes the door on himself. It seems almost ridiculous to watch Philip go into the hostile city of Samaria, and expect to make even a dent on its citizens. But he has confidence. He knows that he represents a great Savior. He dares to attempt the impossible. And look at the picture that follows. "And the people with one accord gave heed to those seeing the miracles which he did. For

unclean spirits, crying with loud voice, came out of many that were possessed with them; and many taken with palsies, and that were lame, were healed. And there was great joy in that city." We can well believe it. Joy has always been known to follow the building of the inner kingdom.

And we are to make the kingdom of first importance. "Seek ye first the kingdom." That is because it brings healing and wholeness to the soul. Any one who doubts that has only to look about him, or read a little church history. Souls diseased and despairing have become bulwarks of strength. When the United States troops occupied Vera Cruz, it was full of malaria and other diseases. The streets had seemingly never been cleaned. But before the marines were done, if the papers were to be believed, one could sleep with no mosquito netting over his window. Even the mosquitoes had been conquered.

**W**HY don't more people seek the kingdom? is often asked. It eases the conscience to think that there are multitudes who are indifferent to the call of God. But after all, it is small comfort, when one is in the depths of trouble, to know that others are in similar trouble. If my house is burning, and I watch my valuables and the accumulations of years going up in flame and smoke, it does not make me hilarious to be told that a man in Minnesota also lost his home the night before. And there is this to be remembered: Multitudes and multitudes do seek the kingdom, and they strive to make it first in their lives. Sergeant Yorke was the American who was most talked about in the great war, with exception of Pershing. Foch said he performed the greatest exploit he had ever known to be done, by one soldier. And Yorke's whole life is wrapped up with the thought of religion. When a man declines an offer of large sums of money to appear on the screen and says his duty is to help his fellow mountaineers to get proper schooling, there is something to his religion. The kingdom is within Sergeant Yorke. During the period when our government was sending shiploads of troops to France, a very distressing event took place in New York. The son of a minister, Doctor McLeod, was about to embark with his company, when he disappeared. Every effort was made at the time, and since the war, to ascertain what happened to young McLeod. But without result. His disappearance is an absolute mystery. The pain endured by his father and mother is far greater than if they knew he was lying in a Flanders grave. Their anguished hopes and fear can only be imagined. Yet Doctor McLeod has gone on with his work as if nothing had happened. A few months after his son's vanishing he published a powerful and cheering volume of sermons entitled, "Songs in the Night." He has seen to it that the Kingdom is made first in his life.

## The Voice of the Pack

(Continued from preceding page). just beside the trail, Dan did not dare wild a section as could be found on to think.

the whole Divide. Once a deer leaped from the trail, and once he heard Woof grunting in the thickets. And just as he came to a little cleared space, three strange, dark birds flung up on wide-spreading wings.

He knew them at once. All mountaineers come to know them before their days are done. They were buzzards, the followers of the dead. And what they were doing in the thicket

Of course they might be feeding on the body of a deer, mortally wounded by some hunter. He resolved to ride by without investigating. He glanced up. The buzzards were hovering in the sky, evidently waiting for him to pass. Then, mostly to relieve a curious sense of discomfort in his own mind, he stopped his horse and dismounted.

The twilight had started to fall, and



already its first grayness had begun to soften the harder lines of forest and hill. And after his first glance at the curious white heap beside the trail, he was extremely glad that he had. But there was no chance to mistake the thing. The elements and much more terrible agents had each wrought their change, yet there was grisly evidence in plenty to show what had occurred. Dan didn't doubt for an instant but that it was the skeleton of Landy Hildreth.

He forced himself to go nearer. The buzzards were almost done, and one white bone from the shoulder gave unmistakable evidence of the passage of a bullet. What had happened thereafter, he could only guess.

He got back quickly on his horse. He understood, now, why nothing had been heard of the evidence that Landy Hildreth was to turn over to the courts as to the activities of the arson ring. Some one—probably Bert Cranston himself—had been waiting on the trail. Others had come thereafter. And his lips set in his resolve to let this murder measure in the debt he had to pay Cranston.

The Lennox house seemed very silent when, almost an hour later, he turned his horse into the corral. He had rather hoped that Snowbird would be at the door to meet him. The darkness had just fallen, and all the lamps were lighted. He strode into the living-room, warming his hands an instant beside the fireplace. The fire needed fuel. It had evidently been neglected for nearly an hour.

Then he called Snowbird. His voice echoed in the silent room, unanswered. He called again, then went to look for her. At the door of the dining-room he found the note that she had left for him.

It told, very simply and plainly, that her father lay injured in his bed, and he was to remain and do what he could for him. She had gone for help to the ranger station.

He leaped through the rooms to Lennox's door, then went in on tiptoe. And the first thing he saw when he opened the door was the grizzled man's face on the pillow.

"You're home early, Dan," he said. "How many did you get?"

It was entirely characteristic. Shaggy old Woof is too proud to howl over the wounds that lay him low, and this gray old bear on the bed had partaken of his spirit.

"Good Lord," Dan answered. "How badly are you hurt?"

"Not so bad but that I'm sorry that Snowbird has gone drifting twelve miles over the hills for help. It's dark as pitch."

And it was. Dan could scarcely make out the outline of the somber ridges against the sky.

They talked on, and their subject was whether Dan should remain to take care of Lennox, or whether he should attempt to overtake Snowbird with the horse. Of course the girl had ordered him to stay. Lennox, on the other hand, said that Dan could not help him in the least, and desired him to follow the girl.

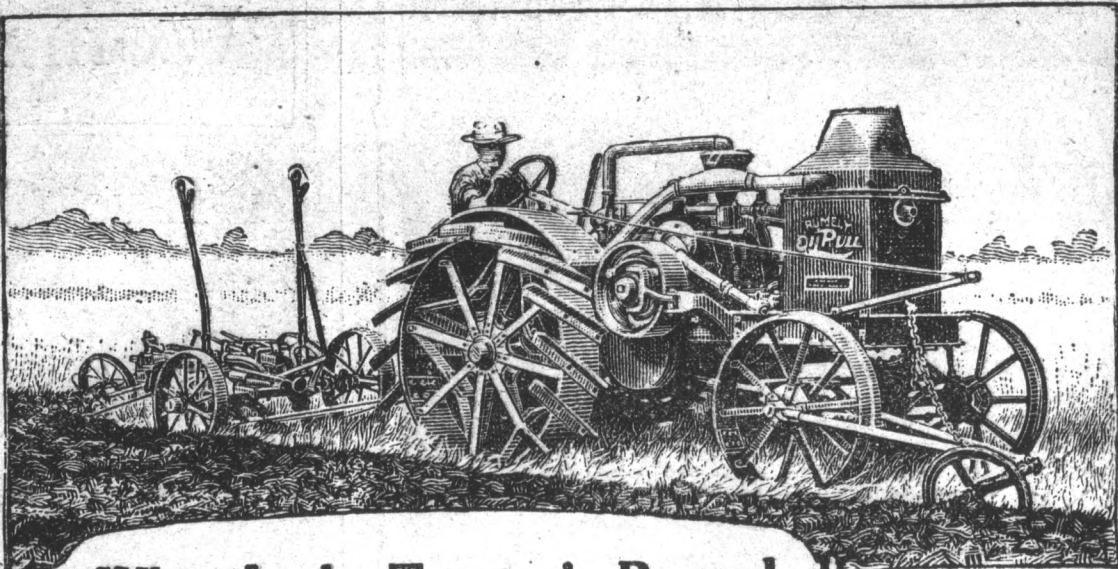
"I'm not often anxious about her," he said slowly. "But it is a long walk through the wildest part of the Divide. She's got nothing but a pistol and a lantern that won't shine. Besides—I have had bad dreams."

"You don't mean—" Dan's words came hard—"that she's in any danger from the animals—the cougars—or the wolves?"

"Barring accidents, no. But, Dan—I want you to go. I'm resting fairly easily, and there's whisky on the table in case of a pinch. Someway—I can't bar accidents tonight. I don't like to think of her on those mountains alone."

And remembering what had lain beside the trail, Dan felt the same. He had heard, long ago, that any animal

(Continued on page 165).



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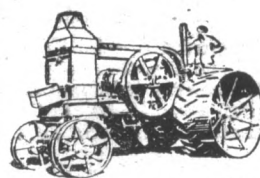
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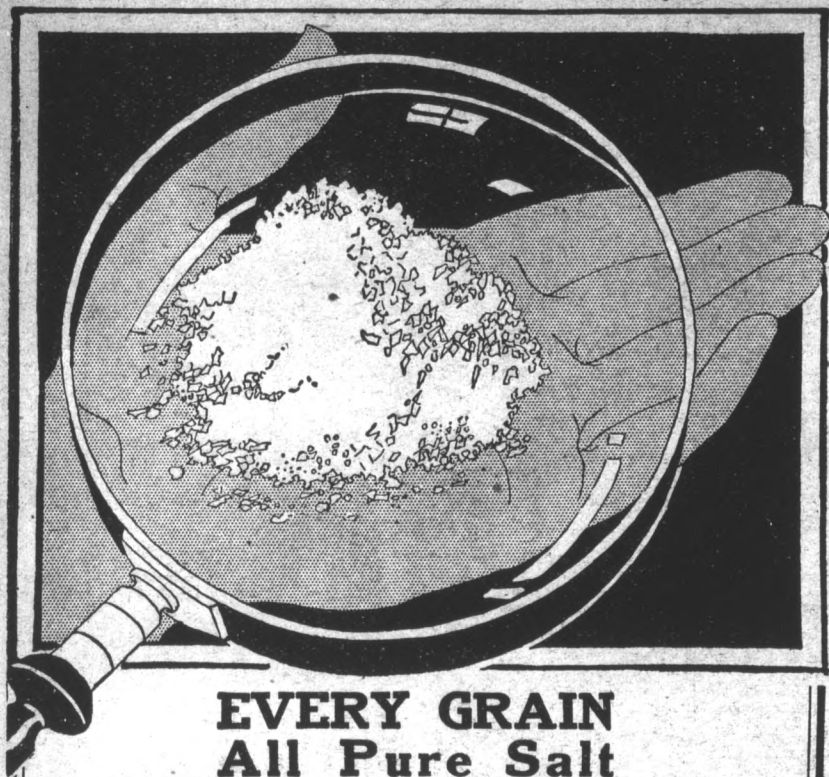
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## Woman's Interests

### A Live Community Club

WHEN Chase Lake farmers do their spring planting they are going in strong for Dent corn, Rosen rye, Petoskey potatoes, and over-sized pumpkins. And it's all on account of the fair they held. Chase Lake Community Club is always doing things, that's why the folks out there five miles from Ada in Kent county, are successful farmers. The lively competition to beat the other fellow which the club provokes, keeps every man and woman in the community up on tip toe and hard at it to win out. Their latest effort was a community fair that showed some of them where they might improve.

"We all thought we were a little better in some one thing than the rest of the neighborhood," says Roland De Pew, their president. "But some of us got beat in our own specialty. So next year we're going in stronger than ever before."

The fair was held at the farm home of Mr. and Mrs. Roscoe Beach. Yard, porches, and house were all utilized; the yards for the poultry display—Chase Lake claims to beat the state with its Giant Bronze turkeys and Emden geese—corn, grain and vegetables were shown on the porch, and inside was the display of baked goods and sewing. A cafeteria lunch was served in the dining-room.

Visitors from other community clubs in the county enlivened the day; in the

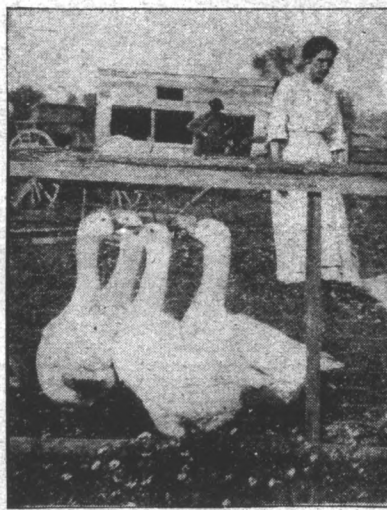
Nellie Vande Peerle. Geese, Emden, Mary Crampton. Chickens, Barred Rocks, Mary Crampton. White Leghorns, first and second, Doris Schenck. Baked Goods.—Cake, first, Lena Canfield; second, Hannah Depew. Buns, first, Teresa McCormick; second, Hedwig Gunterman.

Butter.—First, Ora Mogensen, second, Lena Canfield.

Canned Fruits.—First, Lena Canfield; second, Mary Crampton.



Roland De Pew, President of the Chase Lake Community Club.



Mrs. Mary Crampton and Her Prize-winning Emden Geese.

evening, Miss Genevieve Forsberg, Jellies.—First, Lena Canfield; second, Bada Beach. Needlework.—Quilts, first, Bada Beach; second, Hannah Depew. Fancy work, first, Nellie Vande Peerle; second, Mary Verlin.

#### Special Prizes.

Best Fruit Display, \$2 won by Frank Canfield; best boys' and girls' display, \$1 went to James Byrne.

Blue ribbon for best pumpkins was awarded to Oscar Beach; red ribbon, second best, to Mrs. Lottie Kreiser.

A Pyrex pie plate for the largest display of canned fruit went to Mary Crampton.

Two bushels of Worthy oats for the best display of oats were awarded to Perry Spence.

Embroidery scissors for best display of fancy work was won by Nellie Vande Peerle.

One dollar prize for best cake went to Lena Canfield.

Aluminum kettle for best display of vegetables was awarded to Mrs. Hannah De Pew.

Special prize for best melon display, Poultry.—Turkeys, Giant Bronze, to Jacob Miller.



## Estimating Table Costs

HOW can I find out if it pays me to take boarders at one dollar a day "asks a woman who is trying the experiment. "We buy in quantities and it would take too long to wait until the food is all eaten and average it up. How can I estimate the cost of the canned foods I use?"

For a woman who has never kept accounts, nor given her table any thought beyond buying what she wanted and eating it up, the problem would be rather difficult. Doubly hard for farm women, who take so much from the garden without a thought as to what it cost for seed, labor in planting, cultivating, harvesting and getting ready for the table. Here is one of the best arguments possible for carefully kept farm accounts.

Of course the only way to find out if it pays, is to find out what it costs. And as no accounts have been kept, the thing to do is to begin at once to measure everything which goes onto the table, down to the flour to thicken the gravy. This isn't as hard as it sounds. For instance, a standard brand of breakfast food contains ten cups of food. Two cups will provide the cereal for breakfast for six persons. The cereal in question costs twenty-five cents a box, which gives five cents a day for the six, or five-sixths of a cent a day per person.

Similarly, if twelve oranges are sixty cents, and each person has a half an orange for breakfast, the cost of that individual's portion is easy to reckon. Sugar is still easier, there are exactly two cups to the pound. Buy an accurately marked measuring cup; find out how much the sugar bowl holds, and keep track of how often it is filled. A sack of flour contains twenty-four and a half pounds. Four cups of sifted flour equals one pound; two cups of solid butter or of lard equals a pound. It is better to have scales and weigh flour, butter and lard, but if you have none, accurate measurement will do.

Two weeks of careful work, keeping accurate accounts should do. In keeping accounts do not charge up to the boarders any household supplies they do not use. For instance, if you do not do their washing, do not charge up laundry soap, starch, blueing, etc. But toilet soap which they use, matches, kerosene or lights of any sort, heat, etc., should be reckoned.

If you do not remember how much you paid for your canned fruit or vegetables, how much sugar was used, how long it took to can, etc., the cost will be hard to find. If you have kept your figures, the cost of a can is easy. Elberta peaches last year sold in our neighborhood for \$2.75. One bushel netted twenty quarts. One cup of sugar to the can, makes ten pounds—twenty cups. This sugar was eighteen cents in the spring. This made the actual cost of peaches and sugar figure up to twenty-two and three-fourths cents per can. It took seven hours to can the bushel, for which the charge would be forty cents an hour. A woman would charge forty cents an hour to do the work. Dividing by the number of cans, twenty, gives fourteen cents cost of labor to be added to each can, or thirty-six and three-fourths cents, actual cost of a can of peaches, exclusive of the fuel. To make any money selling those peaches one could not charge less than forty cents per can, and should have more. One can of peaches will give about twelve generous dishes.

It goes without saying that one could not expect to make money from boarders at a dollar a day, and give elaborate meals. A breakfast of fruit, cereal, toast or hot breads, and bacon, or eggs, or country sausage; dinner of meat, one vegetable, potatoes, bread

and butter, a salad or canned relish, and simple dessert; supper of one hot dish, bread and butter and dessert, would be sufficient, to keep everyone "fed" up, and give a chance to make a little. With this sort of scheme, the board money should pay all table expenses, but would not do any more.

Breakfast can be made interesting by changing the kind of cereal and fruit. Don't serve oatmeal every morning, nor flakes. With all the foods there are in the market, one could have a change every day for a month. And don't think you must have grape fruit or oranges. Give the folks baked apples, apple sauce, prunes, canned fruit, home-made jam and hot toast, and store fruits once in awhile. The great thing is to ring in changes.

### GNATS ON HOUSE-PLANTS.

I find that a small fly or gnat is bothering my house plants. It is very small and about the same color as the common house fly. It crawls into the dirt and seemingly lays eggs, as I find the dirt full of little worms. One geranium plant is dying, and I think this insect is the cause. What can I do to prevent or get rid of it?

Arenac Co.

Miss M. E. P.

I think there can be little room for doubt that the small flies or gnats, which bother house-plants and which are described as being very small and about the same color as the common house-fly, are fungus gnats. These creatures often breed in decaying manure and decaying vegetable matter and occasionally injure house-plants. We have found nicotine the most valuable agent for killing these creatures and have usually had little difficulty with them after watering a few times with a little black leaf forty in the water. It is often sufficient to dig into the soil around the roots a quantity of tobacco, fine-cut tobacco or something of the kind which will liberate nicotine when it becomes soaked with the water of the soil. These worms are more apt to be present when the soil in the pot is soggy and when it is kept too wet, although they may thrive in soil of proper moisture. I would give the plant a little better drainage if the soil seems too wet and either use some tobacco or some nicotine (it doesn't matter which brand of nicotine is used).

R. H. PETTIT,

Professor of Entomology, M. A. C.

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Drive a nail into the cork in the bluing bottle and when bluing is wanted remove the nail and pour fluid out through this small hole.—L. M. T.

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1/2 cup of butter,  
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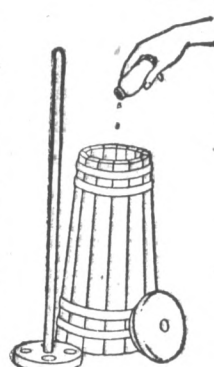
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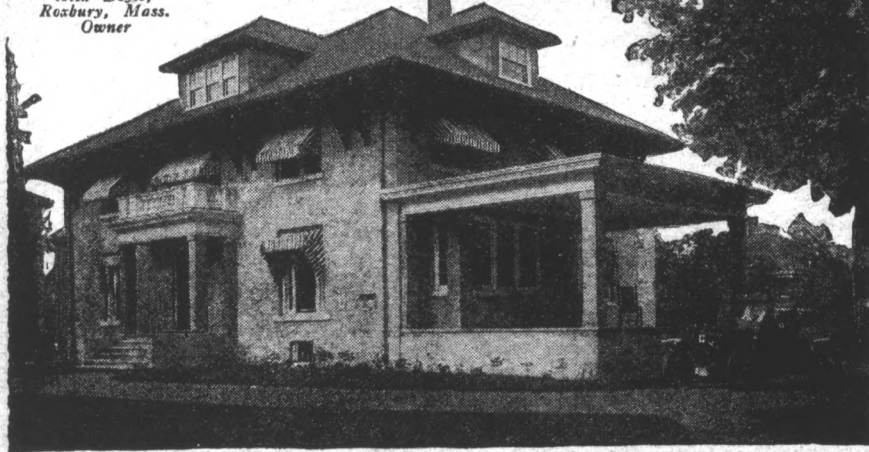
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## Our Boys' and Girls' Page

### Youth Teaching the New Agriculture—By J. C. Mills

AT this time of the year, when the summer club work is closed and the winter work well under way,

it should be of interest and benefit to our readers, especially the boys and girls, to know what their young co-workers in Saginaw county have done during the past year. In reviewing the summer work in this progressive farming community many important facts are brought to light, the thorough and efficient organization, under Club Leader Arthur L. Strang, standing out in bold relief.

In the first place, the club work here is a necessity of very varied nature, as the county is widely different in nationality, religion and economic conditions. Because of this it is almost impossible to get some communities together. In some localities the appeal for cooperative club work must be entirely in terms of dollars and cents,

caring for stock, and he certainly realized that this meant some study on his part."

In the boys' work during the summer four pig clubs were formed with a membership of twenty-five, every boy raising a pure-bred pig with the intention of keeping it for breeding purposes the coming year. This keeps the boys interested in the farm and in the production of good live stock, and they are more likely to stay at home instead of giving up farm life for work in the city. As there were but few pure-bred pigs in this county of the breed which the boys chose, it has tended to greatly improve the stock of this particular breed. Besides keeping pure-bred stock, several of the boys raised grade pigs and are finishing projects in pork production. In addition to the routine work and study, each pig club member has kept an accurate record of the cost of production of his pig, and knows exactly how much he has fed the pig and how much the pig has gained on the various feeds. The value of the breeding stock is placed at \$800; the total costs were \$454.57, leaving a net profit of \$345.43. A fact worth noting is that nineteen farmers adopted the methods taught the boys, with a consequent increase of one hundred and sixty-eight pure-bred pigs this year.

#### Boys Are Keen for Stock Judging.

About forty-five members of the Boys' Clubs throughout the county held regular meetings during the summer studying stock judging and management under the direction of the county club leader. These boys through their work have gained valuable information and experience, which they some day will be able to put to practical use in purchasing stock of their own. The deep interest and enthusiasm shown by the boys in the work the past summer have been very gratifying to the farm bureau leaders, who declare that most boys who have taken care of a pig are more interested in farm life than ever before. Mr. Strang also held seven public stock judging demonstrations, at which about one hundred and fifty farmers were present.

One of the events in the farm life of the boys interested in the work was a Holstein tour of the county conducted by the Holstein Breeders' Association. Ten boys toured the county with the association members in charge, visiting sixteen farms and making a study of the types of animals raised, and the methods of handling the stock.

As a result of these activities the county club leader organized three cow-testing clubs, the members of which are working with the farmers to test the herds and to weed out the dairy cow that is not paying for its feed. These boys meet regularly and are spending considerable time in figuring out balanced rations for feeding the stock on their fathers' farms.

#### Garden Clubs Are Popular.

Several of the boys interested in stock raising are members of the various crop clubs, of which there are thirteen in Saginaw county. The boys and girls enrolled in these garden clubs number two thousand, of which about twelve hundred are boys. The boys in the bean clubs made careful selection of seed beans for disease-resisting stock, and in this work they were assisted by a bean disease specialist, who was working in the county for the United States Department of



Zilwaukee Canning Demonstration  
Team Has Successful Season.

while in other places one may talk club work in terms of better community spirit, improvements and pure-bred live stock; but all with the single purpose of making better farmers and better citizens for the future.

"In one section of the county," said Mr. Strang, "where ten boys each purchased a pure-bred pig, the farmers have become very much interested in pure-bred stock and without exception the fathers of these boys, not only purchased thoroughbred swine, but became interested in other pure strain live stock. In many other instances a stock-judging demonstration was carried on in connection with pig club work. The boys were so enthused that upon going home they told their fathers what they had found out about stock judging, and this interested the fathers to such an extent that they never have a club meeting in that locality but what every parent is present and taking as much interest in the work as the boys and girls themselves.

"Then the boys began the study of better feeding balances. The farmers also took up this important matter and gave considerable time to figuring balanced rations that could be fed most economically to the stock that they had on their farms. As one of the fathers said: 'I am determined that I will not let my twelve-year-old boy put anything over on me in the way of



Agriculture, Bureau of Plant Industry. The expert information and coaching thus received has been of the greatest value to the bean clubs, some of which reported yields of twenty-six bushels per acre.

Of the two thousand home gardens planted last summer eighteen hundred were grown for home use only, and the value of the products at current market prices was placed at \$16,000. The other two hundred gardens, the products of which were sold in the open market, yielded \$2,000 more, while the total expense of all gardens was \$2,500, leaving a net profit (without taking into account the boys' labor time), of \$15,500. In the garden tests two hundred members undertook spraying for control of insects and disease, while eight hundred members tested seeds before planting, and one hundred and twenty used hose, overhead or surface irrigation. The number of farmers adopting the improved methods taught the boys, in spraying were six hundred, and in seed testing three hundred.

#### The Girls' Canning Clubs.

In the successful club work of Saginaw county the girls' canning clubs are a most important and interesting feature. The ten canning clubs with a membership of ninety-six, completed their canning projects with a total production of 7,120 quarts, an average of nearly seventy-five quarts to each member. Many of the first year members, infused with a keen desire to make a record, have canned as high as two hundred and fifty quarts of fruit and vegetables, a large percentage of which would undoubtedly have gone to waste but for their efforts. During the summer there were twenty-eight public demonstrations of the cold-pack method of canning, ten of which were given by the girls at the county fair, and showing the thorough training they had received. In this practical way the girls have gained an insight of the economics of household management, and the work has instilled into them a certain pride in their work that it would be hard to excel.

An eloquent proof of the good work done is the fact that out of ten cans of fruit and vegetables sent from Michigan to Washington to be exhibited in the National Museum, six were from Saginaw county.

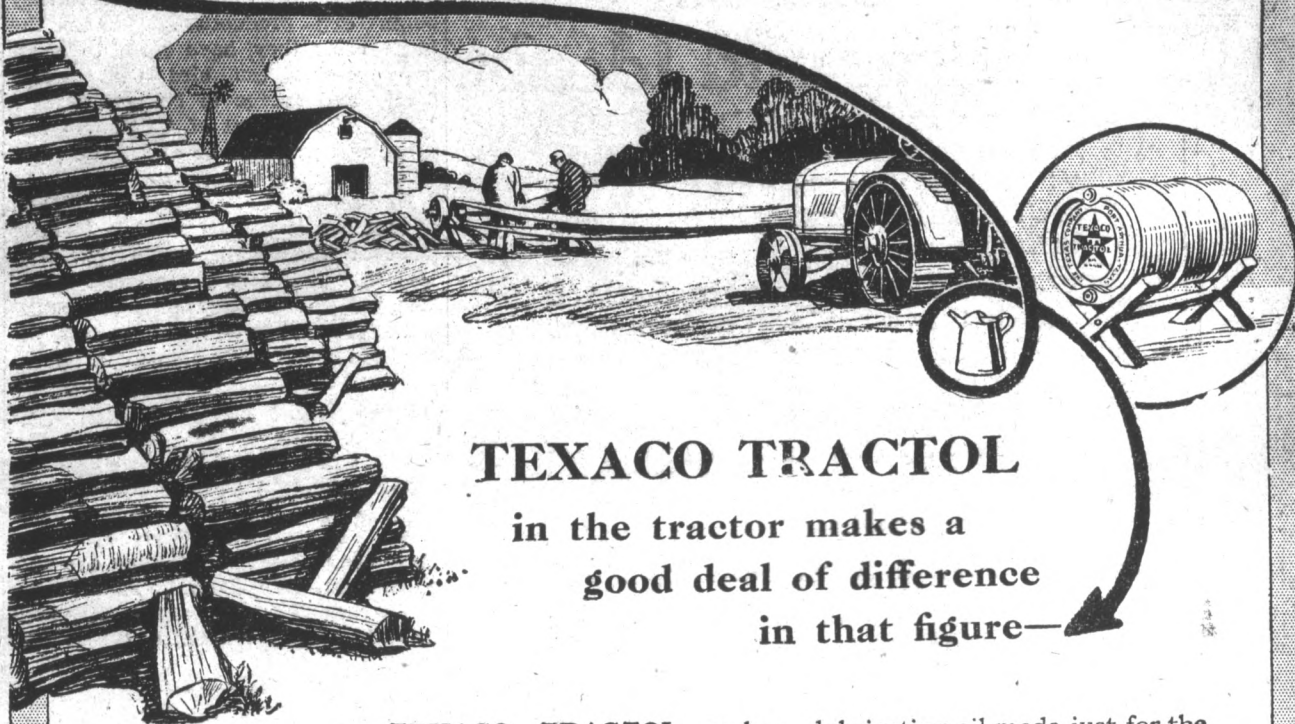
That the club schedule is not all hard work is shown by the record of several social good times enjoyed by the members during the summer. Another beneficial feature is the parliamentary training derived by the members in conducting their business meetings.

The total value of the canned products preserved by the girls' clubs was \$2,737.52, the total cost was \$1,255.42, leaving a net profit to the members for their time and effort of \$1,482.10. In the work thirty members used the cold-pack method with a production of 1,158 quarts; twenty-two members canned vegetables to the extent of 670½ quarts, and twenty-three made 153½ jars of jelly.

Perhaps the most convincing value of the demonstration work was the large number of housewives who adopted, through this means of enlightenment, the improved methods of canning. Of the cold-pack method there were nine hundred and sixty-seven new advocates who canned 4,250 quarts; one hundred and fifty others "put up" two hundred and forty quarts of vegetables, and forty more added two hundred and forty quart cans of meats to their winter larder, while those partial to sweets to the number of four hundred and nineteen labeled and put away on the shelves with much satisfaction 1,760 quarts of jelly.

When feeding ground oats to young pigs it is better to sift the oats and throw out the hulls.

## How many cords of wood per day?



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We cull our flocks 3 times, 1st in early fall, 2nd just before winter sets in and again before the breeding season.

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Our supply is limited therefore place your orders early. Prices quoted on application.

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BEST Breeds. Chickens, Ducks, Geese, Turkeys, Guinea Fowls, Hares, Dogs. Stock for sale. Write your wants. Catalog free. H. A. Souder, Box 94, Sellersville, Pa.

Baby Chicks Good big, healthy chicks of show room quality at utility prices. Catalogue free. Sycamore Hatchery, Sycamore, Ohio

Barred Rock Chicks. Booking orders now for early hatches, 100% safe delivery. Circulars and prices on application. H. H. Pierce, Jerome, Mich.

BRED-TO-LAY S. C. White Leghorns from pedigreed males mated with records to 230 a year. Expert as extra heavy layers. Selected cockerels at a bargain. Pullets. The Ferguson Co., R. 6, Ann Arbor, Mich.

Baby Chicks Leading varieties. Highest grade. Postpaid. Guaranteed. Book free.  
Allen's Chicken Farm, Lewis Station, Mo.

Barred Plymouth Rock Cockerels. M. A. C. Strain \$5 and \$8 or 2 for \$15.  
Mrs. JESSE F. BALL, R. 9, Charlotte, Mich.

Barred Rock Cockerels. Thompson Aristocrat strain extra good laying strain prize winners. \$4.00 and \$5.00 each. Write Sam Stadel, Chelsea, Mich.

Barred P. R. Cockerels for sale. M. A. C. heavy laying strain. Sired by 1st pen cockerels at Detroit Show 1920. Rosemary Farms, Williamston, Mich.

Additional Poultry Ads on Page 157





## Mule-Hide Ideas and Ideals

Fifteen years ago MULE-HIDE Roofing came into existence. Today—after fifteen years of service, the first MULE-HIDE Roofing is still proving its fitness.

MULE-HIDE has never been sold on price, rather it has been the aim of its makers to reduce its price through longer service. Millions of feet of MULE-HIDE Ready Roofings and Asphalt Shingles now in use prove the meaning of MULE-HIDE'S service record—

### "Not a Kick in a Million Feet"

Go to your dealer; ask him to submit MULE-HIDE to any test you may select, and you, too, will be led to purchase, for its longer life, this never varying product.

MULE-HIDE Smooth Finish Roofing.  
MULE-HIDE Slate-Kote Roofing.  
MULE-HIDE Shingle-Craft Roofing.  
MULE-HIDE Individual Asphalt Shingles in Standard and Double-Thick Weights.  
MULE-HIDE Four Unit Asphalt Shingles.  
SEAL-SKIN and BLACK-BEAR Waterproof Building Papers.

## THE LEHON COMPANY

MANUFACTURERS

44th to 45th Street on Oakley Avenue, Chicago

### Hubers Reliable Chicks—700,000—For 1921.

By Parcel Post Prepaid. By Special Delivery. Guarantee Live Delivery. Eggs for Hatching by Setting or 100.



We have installed the most modern features of the Hatching Industry, which will insure chicks as strong as Hen Hatched Chicks and full of pep. This is our 12th season. With the great increasing demand for our chicks and the fine Testimonials, Photos, Show Reports and Wonderful Egg Records we receive from our customers, proves that our chicks from stock of Good Quality, Bred for Heavy Egg Production and that they are Properly Hatched. To insure success buy our Reliable Chicks. We hatch all our chicks from pure bred, free range farm stock. S. C. White and Brown Leghorns, S. C. Anconas, Barred Rocks, R. C. and S. C. Reds, S. C. and R. C. Buff Orpingtons, S. C. Black Minorcas and White Wyandottes. Special combination offer on chicks and brooder stoves. Before buying elsewhere send for illustrated catalog and prices. Place order at once and avoid disappointment in the rush of the season.

Hubers Reliable Hatchery, East High St., Fostoria, Ohio.

#### POULTRY

### DAY OLD CHICKS

HOMESTEAD FARMS



It will pay you in selecting Chicks for the coming season to consider the quality of our

Pure Breed Practical Poultry

We will send you our new spring Catalog, which explains this breeding. Also the catalog tells how to brood your Chicks successfully; it describes our

High Class Egg Leghorns And All Standard Breeds

Both Chicks and Hatching Eggs from all breeds guaranteed, and delivered post paid.

Pullets—Also 25 White Rock Pullets. We will send you description and price.

Yearling Hens—A few White Wyandottes, Anconas, and White Leghorns; the last of the season.

Cockerels—Barred and White Rocks; Brown Leghorns.

STATE FARMS ASSOCIATION,

Desk 1,

Kalamazoo, Michigan



Baby Chicks

LOOK! 1,000,000 for 1921.

Postage PAID, 95% live arrival guaranteed.

FREE feed with each order. 40 breeds chicks, 4 breeds ducklings. Select and Exhibition grades. A hatch every week all year. Book your order NOW for early spring delivery. Catalogue free, stamps appreciated.

NABOB HATCHERIES, Gambier, Ohio

BARRED Plymouth Rock cockerels for sale, some Bantam thrifty birds from prize-winning stock \$4 and \$5. George H. Campbell, R. 5, Box 70, Ypsilanti, Mich.

#### Baby Chicks and Eggs for Hatching

Barron's White Leghorns, Barred Rocks and R. I. Reds. Big sturdy chicks from free range stock with high egg records. Interesting catalogue free. BRUMMERS POULTRY FARM, Holland, Mich.

### "LAWN PARK" COOP

Saves Your Chicks

The Wire Park, which pulls out like a drawer, gives hen and chicks fresh grass, air and sunshine during the day; closes at night and in storms. This coop meets every demand; portable, with removable floor for easy cleaning; roomy, light, durable, sanitary.



Made of galvanized metal; repels vermin. Size, open, 18 in. x 24 in. x 48 in. Pays for itself in chicks and labor saved. Write today for free circulars, special prepaid offer and how to turn work into pleasure and profit. CYCLONE MFG. CO., DEPT. L, URBANA, ILL.

### Keep Your Hens a Laying

Trust your hatching to time-tried and tested

"SUCCESSFUL"

Incubators and Brooders

Used by the big money-makers

who stay in business year after year.

Poultry Lessons Free. Booklet, "How to Raise 48 Out of 50 Chicks," 10 cents. Catalog Free. Write today.

DES MOINES INCUBATOR CO., 368

Second Street, Des Moines, Iowa

\$12.75 FOR A BADGER

140 EGG INCUBATOR

140 CHICK BROODER \$6.75

Built of California Redwood with double walls.

Insulate top covered with wall board gives double protection. Hot water—Copper Tank—Self Regulating—Thermometer—Deep Nursery. Set up and shipped COMPLETE with all fixtures. Order DIRECT or send for descriptive circular.

BADGER INCUBATOR CO. BOX 136

RACINE, WIS.

28 Years Making Good

IT TELESCOPES!

PROOF Against Hawks, Rats Weasels, etc.

DAY OLD CHICKS

and hatching eggs from select heavy producing stock. Delivery guaranteed. Wh. Leghorns, Bar. Rocks, W. Wyand., S. C. Reds, B. Orp., Cat. free.

GOSHEN POULTRY FARMS, R-19, Goshen, Ind.

#### WHEN ARE HENS TOO FAT?

WE find that culling out hens which become baggy with fat soon removes that condition from the flock. The alert hen which sings and scratches and lays eggs is not apt to become too fat. A certain amount of fat is needed on the pullets before they begin egg production. Handle the birds after they have gone to roost and examine the bird that seems meaty and proves to be laying regularly. The amount of fat she is carrying will prove to be about the right amount for egg production.

By keeping the flock in the condition of that hen it will be possible to keep most of them laying quite regularly. The thin pullet is not a good layer. The pullet that soon becomes baggy from fat is apt to be a lifeless hen that does not spend much time in laying.

Hens that are laying profitably use the elements in making eggs that the drone uses in accumulating fat. When a hen stops laying and becomes too heavy she is in greater danger from liver trouble and other poultry diseases. If such birds are marketed their chances for multiplying are ended and the pullets can be raised from the thrifty hens which are easily kept in good laying condition and do lay. K.

#### FINE FEATHERS OR EGGS.

THE exhibition and bred-to-lay qualities can be combined to some extent and it is often done, but the combination is not frequently obtained in the low-priced stock which makes up the bulk of the utility of farm flocks. Too often the farmer who wishes heavy egg-laying stock will buy an exhibition cockerel in preference to a cockerel from a high-producing hen.

The fine looking bird may have no pedigree of value and yet it will look better. It is true that cockerels from high-producing hens seem to have the power of producing high-producing pullets. It might not always be true but it is the one cheap way we have of trying to improve our farm flocks. A cockerel from a fine laying hen is well worth trying out as a means of producing a more profitable farm flock. Experiments have proven that it often works successfully.

For example, the Barred Rock is a breed rather difficult for some beginners to handle because of the double mating system. They find it hard to produce the beautiful barred to the skin specimens which win. At the same time we find the Barred Rock a great favorite on the general farm. The farm flocks are not bred for exhibition but for eggs and meat. This year I have seen several farm breeders buy exhibition males with great pleasure and turn down males from a bred-to-lay flock because those birds were not as pretty and not barred to the skin like the fine quality exhibition stock.

Of course all bred-to-lay birds should be very typical of the breed they represent. They must not look like scrubs. But when a hen lays two hundred eggs or more she is of great value as a breeder if she is vigorous and her progeny are also producers. Such a hen should not be discarded because her head points and color are not a sure guarantee of a prize. If she can produce cockerels of great vigor and fair type for the breed, those cockerels should be given a chance to produce fine laying pullets. The best of them should be used even if they are inferior in markings to the birds in a prize-winning strain.

Every year fine-appearing birds are being located, which are also good layers. Our best exhibition strains contain some good layers and they are being located and used to good advantage. But the buyer of a new cock-

### You Take No Risk With An Ironclad Incubator

Both For \$19.75

FREIGHT PAID EAST OF ROCKIES

When you buy an Ironclad Incubator and Brooder you take no risk. You get machines which have been on the market for years. Machines made of the very best material—by expert workmen—machines that give high percentage hatches and stand up for years. You simply can't go wrong in buying Ironclads. We give 30 days' trial. Money back if not satisfied, and we pay return freight charges.

#### 150-Egg Incubator 150-Chick Brooder

Incubator made of genuine California Redwood, covered with heavy galvanized iron, triple walls, asbestos lining, deep chick nursery, hot water heat, copper tanks and boiler, self-regulating, Tyco's thermometer, glass in door, everything complete and built to last. Shipped set up, all ready to use. Ten Year guarantee. Catalog free or order direct from this ad. You take no risk.



IRONCLAD Incubator Co., Box 85, Racine, Wis.

### Biggest Hatches Strong Chicks

That's what you'll get with a Champion Belle City Hatching Outfit. My Free Book "Hatching Facts" tells how—gives newest ideas and quickest ways to make poultry pay big with my

#### \$15 140-Egg Champion Belle City Incubator

Double Walls Fibre Board—Hot-Water Copper Tank—Self-Regulated Safety Lamp—Thermometer & Holder—Egg Tester—Deep Nursery. \$9.95 buys 140-Chick Brooder. Hot-Water Double-Walled Brooder \$23.95

Freight Prepaid East of Rockies Towards Express

I ship quick from Buffalo, Minneapolis, Kansas City or Racine.

With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you can make a big income. You can also easily share in my

\$1000 in Gold

Without cost or obligation. Save time—Order Now—or write today for my Free Book, "Hatching Facts". It tells the whole story.—Jim Bohan, Pres.

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

#### 30 DAYS TRIAL

Don't Take Any Chances!

Find Out What an Incubator is Made of Before You Buy. We will gladly send you samples of materials we use. Get our Catalog and samples before buying. We give 30 Days' Trial—10-Year Guarantee. These two well-made, nationally known machines—



#### Both Freight Paid \$18.25 East of Rockies Only

Wisconsin are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Send today for our new 1921 catalog, free and postpaid.

Large Size 150-EGG INCUBATOR AND BROODER, BOTH \$22.50.

WISCONSIN INCUBATOR CO. Box 82, Racine, Wis.

MONEY BACK IF NOT SATISFIED

### Lice-Proof Nests

WRITE QUICK for Catalog and our SPECIAL OFFER

Nests won't cost you 1¢

your best money

pay for them in more eggs



Get 20 to 50% more eggs, have healthier hens, make more money with the Everlasting and Sanitary

KNUDSON, Galvanized Steel Lice Proof Nests, 60,000 in use. Costs less than wood.

Unlimited guarantee. Send us your name today for our Special Offer and interesting literature—and also full particulars of our New Trap Nest. WRITE TODAY!

SEAMAN-SCHUSKE METAL WORKS COMPANY

Box 448 Manufacturers St. Joseph, Mo.

#### Detroit Incubator \$12.45

140-Egg Size—Guaranteed—has double walls, copper tank, full-size nursery, automatic regulation thermometer held so that chicks cannot break it when hatching. Detroit Brooders, too. Double walled, hot water heated. Write for special low price on both machines.

Detroit Incubator Co.

Dept. 11 Merritt St., Detroit, Mich.

FOR SALE Candee Mammoth Incubator. 100 lbs. TYRONE POULTRY FARM, Fenton, Mich.



erel must not expect exhibition appearance in the bred-to-lay bird, especially if the bird is bought at a low price. If you wish winners you must go to the specialty breeders who are in that business. If you wish layers you must obtain stock of a bred-to-lay strain. Then do not kick if the bred-to-lay strain of cockerel does not win prizes. And do not expect the pullets from the exhibition cockerel to be high egg producers.

The combination of prize-winning and heavy laying is sometimes combined but as poultrymen we must have an aim with our birds. We can have the best success in winning prizes when we strive for prizes alone. We are the most sure of high egg-producing flocks when we breed from the best layers and do not worry too much about the exhibition points. The breeders of one type are apt to make fun of the breeders of the other. But both have their place in the poultry world. What we need is more flocks with as much beauty as possible combined in hens that are high normal layers with the ability to produce offspring of similar quality.—G. R.

#### THE VOICE OF THE PACK.

(Continued from page 159).

that has once tasted human flesh loses its fear of men and is never to be trusted again. Some wild animal that still hunted the ridges had, in the last month, done just that thing. He left the room and walked softly to the door.

The night lay silent and mysterious over the Divide. He stood listening. The girl had started only an hour before, and it was unlikely that she could have traversed more than two miles of the steep trail in that time. He could fancy her toiling ever upward, somewhere on the dark ridge that lay beyond. Although the horse ordinarily did not climb a hill more swiftly than a human being, he didn't doubt but that he could overtake her before she went three miles farther. But where lay his duty—with the injured man in the house or with the daughter on her errand of mercy in the darkness?

Then the matter was decided for him. So faint that it only whispered at the dim, outer frontiers of hearing, a sound came pricking through the darkness. Only his months of listening to the faint sounds of the forest, and the incredible silence of the night enabled him to hear it at all. But he knew what it was, the report of a pistol. Snowbird had met an enemy in the darkness.

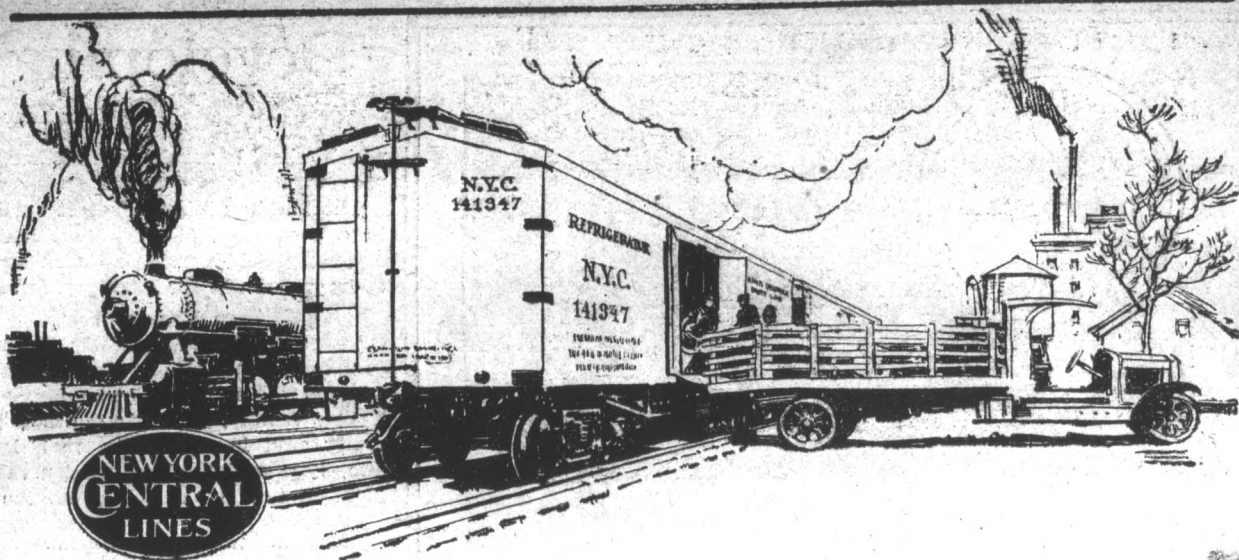
He called once to Lennox, snatched the shotgun that still stood where he had placed it in the corner of the room, and hastened to the corral. The mare whickered plaintively when he took her from her food.

(Continued next week).

#### GERMAN WOMEN PLEAD FOR SUPPLY OF MILK.

**SURRENDER** to the allies of 800,000 milch cows, which has been demanded under the terms of the Versailles treaty, would have disastrous results in Germany, says a letter to the women of France from a committee of German women. Continued deprivation of the German people of the milk supply represented by these cows would result in weakening public stamina and individual resistance and therefore operate to reduce the ability of Germany to fulfill treaty obligations through necessary production, it is said.

The word develop is often misused for the word fatten. This is a mistake. In order to develop a pig he must have suitable food to keep up a good growth of bone and muscle and regular exercise to give him strength and vigor.



## The Way Out

**T**HE farmer's success depends upon the proper delivery of his produce to the consumer.

That means *Transportation*, and *Transportation* means the American Railroads. These railroads are meeting the urgent situation with ever-increasing efficiency.

During the first ten months of 1920, the New York Central Lines handled 7,481,443 loaded cars, an increase of 209,357 cars over the number handled during the same period of 1919, and without additional equipment or facilities; and the daily average of freight car mileage is being increased.

The supply of adequate equipment and increased operation is not the only means through which the lines meet their obligation to the farm shipper. The Agricultural

Department is maintained for this class of shipper.

The Agricultural Department of the New York Central Lines takes up the individual problem of a farmer, an association, a district, or an entire territory reached by its lines. It will go into an intimate study of the needs which promote production and market-despatch. If it concerns the farmer, the Department will go with him in his endeavor to make operations permanently profitable for all interests.

**THE WAY OUT** for profitable production is in such co-operation with the railroads as will enable them to properly deliver the producers' shipments.

The New York Central Lines make such co-operation easy.

## THE NEW YORK CENTRAL LINES

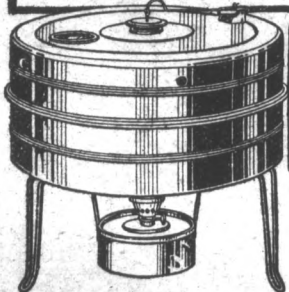
MICHIGAN CENTRAL — BIG FOUR — LAKE ERIE & WESTERN,  
BOSTON & ALBANY — TOLEDO & OHIO CENTRAL — PITTSBURGH & LAKE ERIE  
NEW YORK CENTRAL AND SUBSIDIARY LINES

New York Central Station  
Rochester, N. Y.

AGRICULTURAL DEPARTMENT  
Grand Central Terminal, New York City

La Salle Street Station  
Chicago, Ill.

### Our Famous Little Brown Hen Incubator



\$5.95  
Can be shipped by parcel post.

This 50-Egg Metal Double Wall Incubator is 18 inches in diameter, 15 inches high, fireproof and indestructible. Regulator is standard brass expansion disc type. Heat regulated uniformly. Thermometer readable through glass window. Suitable for all size flocks. Satisfaction guaranteed or your money back. Safely packed for parcel post. Send necessary postage.  
**32MF3011—Little Brown Hen Incubator.**  
Weight, 15 pounds. Price, \$5.95.  
**SEARS, ROEBUCK AND CO.**  
CHICAGO OR PHILADELPHIA.

#### POULTRY

### BABY CHICKS



Pure Bred in all the leading breeds. The most moderate method of hatching. Delivered Parcel post prepaid to you. Best prices. Circular free, do not delay.

**Wolf Hatching and Breeding Co.**  
Dept. M, Gibsonburg, Ohio.

**BABY CHICKS**—R.I. Red, Barred Rocks, White Wyandottes, White Leghorns, Selected healthy chicks. Order early, have winter layers. First hatch Feb. 28th. Write for price list and circular.  
**DERR & ADAMS,** Litchfield, Mich.

## Michigan's Largest Pedigree Poultry Farm Lakewood's Peerless Layers

The way they lay show the power they have. Official records from 200 in 9 months to 310 eggs in one year.

Write for Catalogue

**Leghorns, Rocks, Reds, Wyandottes**

**Lakewood, Farm, Box B, Holland, Mich.**

### BETTER BABY CHICKS

mean **Bigger Poultry Profits** for you. Buy **Mid-West Chicks** and make real money with your poultry. 12 varieties. Safe arrival guaranteed. Write for catalog. Frank B. White, Pres., **MID-WEST HATCHERIES, Office:** 655-Ft. Dearborn Bldg. Chicago, Ill.



### Baby Chicks

**FREE** delivery. Superlative quality from select high-producing stock. All popular varieties. Reasonable prices. Write for catalog at once.

**AERDALE POULTRY FARM,** Springfield, Ohio.

### Big 5lb. Barron White Leghorns

Real winter layers. 703 eggs from 50 pullets in Dec. Free catalog describes them, gives feeding methods, a new way to cull hens and much valuable information. Send for it. **A. WAUCHER,** Gobleville, Mich.

**CHICKS,** We ship thousands each season. Send for prices and testimonials. **FREEPORT HATCHERY,** Box 12, Freeport, Mich.

**Barred Plymouth Rock** cockerels large birds from a prizewinning laying strain \$5.00 each. **J. A. BARNUM,** Union City, Mich.

**DAY OLD CHICKS** S.O. White Leghorns, trap-nested stock where every hen must produce 50 eggs in four winter months. One hundred big thrifty chicks for \$25.00. **MACALWHITE POULTRY YARDS,** Alex. MacVittie, Proprietor, Caro, Mich.

**BABY CHICKS,** Eight varieties at lowest possible prices. A trial order will convince you of their superior quality. Catalogue free. **Ohls Poultry Yards and Hatchery,** Marion, Ohio.

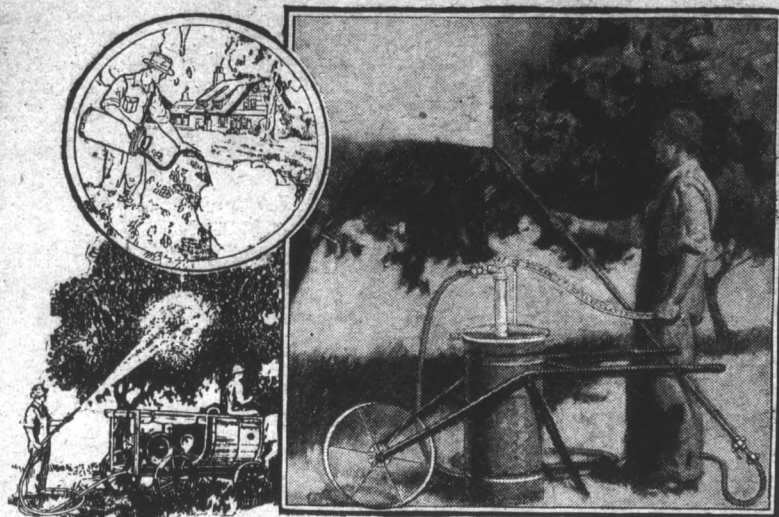
**BABY CHICKS** Hatching eggs, Barred Rocks, Norman strain, trap-nested, bred-to-lay, expertly tested for many generations, large illustrated catalogue 25c, stamps for circular. **Norman Poultry Plant,** Chatsworth, Ill.

**Booking Orders** for Hatching Eggs Single Comb Black Minorcas—White Leghorns, with the Win and Lay bred in them. Eggs \$1.50 and \$5.00 per 15. Order from ad. **PARADISE POULTRY YARDS,** Box 575, Halfway, Mich.

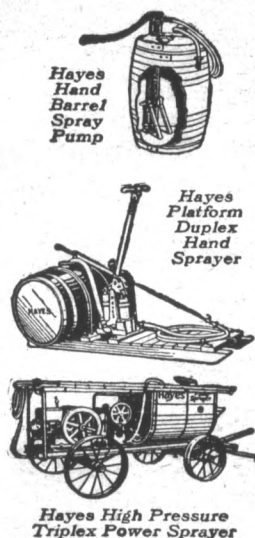
**Barred Rocks** Hatching eggs from Parks 200-egg best pedigree pens. \$2 per 15, \$6 per 50, \$12 per 100. Prepared by parcel post in nonbreakable containers. **R. G. KIRBY,** Route 1, East Lansing, Mich.

Additional Poultry Ads. on Page 163





## Don't Let Pests Destroy Your Profits



**W**ILL millions of vicious, life-sapping pests sweep down upon your fruit, potatoes, hogs and poultry—and leave barren destruction in their wake? Watch out for them this year. Be prepared.

Send for our free book and learn how the Hayes system of Fruit-Fog spraying will drive out these pests. How this scientifically atomized super-sprayer envelops every twig, leaf and bud with a vapory fog-like solution. Penetrates into the tiny microscopic niches, cracks and crevices—kills both the *outside* and *hidden* pests.

No ordinary spray can possibly equal the amazing results of Hayes wonderful *thoroughness*. That is why thousands of Hayes users report surprising fruit, potato, hog and poultry profits. And that also accounts for the phenomenal success of Hayes Fruit-Fog Spraying.

**WRITE FOR FREE BOOK TODAY**—Tell us what you want your sprayer to do, and we will tell you which of the Fifty Styles of Hayes Sprayers is best suited to your needs, and its price. We'll also send our New Book of Hayes Sprayers and valuable Spraying Guide FREE. Write today.

Hayes Pump & Planter Company  
Dept. L Galva, Ill.

# HAYES

*Fruit-Fog Sprayers*

(105)

## HARDY FRUIT TREES

Grape vines, small fruit plants, ornamental trees and shrubs, grown in the famous Lake Shore region of Northern Ohio. Over a quarter century of fair dealing.

Write for catalog.

T. B. WEST,

MAPLE BEND NURSERY,

PERRY, OHIO

### TREES & PLANTS THAT GROW

*Free Catalog*



**A Guarantee Worth While.**  
Express Prepaid  
For over 60 years we have supplied nursery stock to people who know and appreciate the best. Write for Catalogue now.  
**PETER BOHLENDER & SONS**  
Spring Hill Nurseries, Box 30  
Tuscarawas City, (Miami County) Ohio.

### PROGRESS TREES and PLANTS GROW

because they are propagated right, dug carefully, and packed securely. Write for our Catalog and NO-RISK offer of trees, shrubs and plants. We pay express charges. Why pay for your trees before you get them? It's not necessary if you deal with **THE PROGRESS NURSERY COMPANY**  
1312 Peters Avenue Troy, Ohio

### KELLY'S Trees That Please

Send for our 1921 Catalog containing complete information about the wonderful variety of sturdy fruit trees we offer. Every tree a perfect specimen and guaranteed to satisfy. 38 years reputation for square dealing. Kelly Bros., 1100 Main St., Danville, N.Y.

### PEACH TREES Pear, Apple, Etc. OUR TREES GROW

Grow own fruit; reduce living cost. Improve value, appearance and production of farm, garden or orchard. Fruit wanted everywhere. Free catalog.  
**MITCHELL NURSERY,** Beverly, Ohio

### APPLE AND PEACH TREES

**25c EACH** postpaid. Send for 1921 Bargain Catalog of Fruit Trees, Plants and Vines, Farm, Flower and Garden Seeds. Special prices and samples of Grass Seeds on application.  
**ALLEN'S NURSERY & SEED HOUSE,** Geneva, Ohio



**Men Wanted** to sell dependable fruit trees and shrubbery. Big demand. Complete co-operation. Commission paid weekly. Write for terms.  
**Williams Sons' Nurseries,** Rochester, N.Y.

### SPRAY YOUR FRUIT TREES AND VINES



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

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

### RHODES DOUBLE OUT PRUNING SHEAR



**RHODES MFG. CO.**  
615 S. Division Ave. GRAND RAPIDS, MICH.

Cuts from both sides of limb and does not bruise the bark.  
Made in all Styles and Sizes  
All shears delivered free to your door. Send for circular and prices.

### Michigan Fruit Trees AT Reduced Prices

Direct from Nursery to Planter. Also Roses, Spireas, Barberry, Vines, Maple trees, and full line of berries, Grape Vines, Etc. Send today for Price List.

**CELERY CITY NURSERIES,**  
Kalamazoo, Mich.

### The Wolverine Detroit Nurseries

*Clarence Aldrich, Lessee*  
Fruit Trees and Small Fruit Plants, Shade and Ornamental Trees, Evergreens, Flowering Shrubs, Roses, Vines, Perennials a specialty.

A Good assortment of Everything  
Ask For Price List  
Mail address R. 2, Farmington, Mich.

Residence and Sales grounds on Grand River Avenue 17 miles from Detroit City Hall. No agents.

## Developing Crop Varieties

(Continued from first page).

which should result in further improvement.

The Manitou Island Project outlined in a previous issue of the Michigan Farmer should provide a future source of improved rye for Michigan farmers.

### Soybean Variety Tests.

These tests show strictly the need of growing varieties of soys which are adapted to Michigan. The Mammoth Yellow variety, which is the most generally sold in this state, is a large, late, type which gives one-fourth the yield in tonnage of forage as the Ito

variety is recommended to bean growers who are located on favorable bean producing soil, and who prepare their bean land at an early date and plant the crop on time. The Robust is slightly longer in maturing than the average white pea bean, and if planted late or under poor conditions may not ripen properly.

For conditions where an early bean is desired the Early Wonder is suggested as being the best adapted.

The Robust bean has proven to be resistant to the Mosaic, a new disease

### Dependable Grain Varieties for Michigan

#### CORN.

(Southern District).  
Early Silver King  
Golden Glow  
Duncan  
Folks White Cap  
Murdoch  
Pickett.

(Central District).  
Early Silver King  
Golden Glow  
Pickett  
Folks White Cap.

(Northern District).  
Northwestern Dent  
Early Golden Glow  
Early Pickett  
Wisconsin No. 25.

#### OATS.

Wolverine  
Worthy  
College Wonder.

#### RYE.

Rosen.

#### WHEAT.

(Red).  
Red Rock  
Shepherd's Perfection  
Egyptian  
Nigger.

(White).  
American Banner  
Gold Coin  
Dawson's Golden Chaff.

#### BARLEY.

Wisconsin Pedigree  
Michigan Two-row  
Michigan Black Barless.

#### BEANS.

Robust  
Early Wonder.

#### SOYBEANS.

Ito San  
Black Eyebrow  
Manchu.

San, Manchu, or Black Eyebrow. Early of beans. This disease is very common in New York. The Robust has been adopted there as the leading variety of the state. The Mosaic is appearing in Michigan and this fact will make the Robust variety of even greater importance.

### Bean Variety Work.

During the past year bean variety tests included over five hundred Michigan varieties and strain selections. Many of these were improved varieties which Professor Spragg has been working with for a number of years.

A large number were collected on Michigan farms by Mr. Down and other members of the crops department. In these tests the improved Robust variety gave the highest yield. This strongly recommended in the order

### Alfalfa Variety Tests.

In alfalfa variety tests conducted by the college, hardy strains from the northwest markedly outyielded ordinary commercial seed. The Grimm, Cossack, Baltic, and common alfalfa from Montana, the Dakotas, and Idaho, are very strongly recommended in the order



Distribution of Michigan Corn Varieties.

**Sec. 1.**  
Early Silver King  
Duncan Y. D.  
Ey. Reids Y. D.  
Ey. Leaming Y. D.  
Murdoch Y. D.  
Golden Glow  
Folks White Cap  
Pickett Y. D.  
**Sec. 2.**  
Pickett Y. D.  
Golden Glow  
Ey Silver King  
Folks White Cap  
**Sec. 3.**  
Ey Golden Glow  
Wisc. No. 25  
N. W. Dent  
Ogemaw W. C.  
Ey Pickett  
Flint Varieties  
**Sec. 4.**  
No Dependable  
Seed Maturing  
Varieties for  
Silage.  
Varieties of  
Sec. 3 under  
Favorable  
Conditions.

Sectional Distribution of Leading Michigan Corn Varieties.



given. Though higher in price the Grimm and Cossack are hardier and will amply repay in a few years, the extra seed cost.

#### Placing Improved Varieties in the Farmers' Hands.

When plant breeding work was first established valuable varieties were first distributed directly from the plant breeder's hands to farmers, no organized method of following up the performance of these varieties to keep them pure and insure widespread distribution, was followed. Without doubt many valuable strains were quickly lost in this way. In order to rapidly increase improved strains and make them available to Michigan farmers and to the seed trade at a reasonable price, a system of production under inspection by the Crop Improvement Association and sale through the Farm Bureau Seed Department has been developed. This will be treated in a forthcoming article.

(This is the first of a series of articles regarding the accomplishment and methods of the Michigan Agricultural College in crop improvement and management.—Editors).

#### BUYING NURSERY STOCK.

(Continued from page 148).

The nurseryman and the experiment station can afford to make variety tests. The farmer can only do it on a very small scale. Even that does not pay unless there is time for experimenting and a deep interest in obtaining first-hand information.

Nursery companies are always presenting new varieties to the public and often wonderful claims are made. Sometimes the new varieties which were so loudly praised ten years ago will seldom be heard of now. It simply means that they didn't make good. But the old standard varieties are still for sale and proving fairly profitable whenever planted. Every once in a while a new fruit proves of unusual value and good enough to partially replace some older variety. Information about such fruits can usually be obtained from the state experiment station. They have facilities for knowing how certain fruits are turning out and may be able to tell more about them than the nursery catalogs.

The farmer who expects to order nursery stock of certain new varieties should plan, if possible, to visit a practical grower who already has fruit of that variety in bearing. A very short visit will bring out points about growing, packing and marketing that variety of fruit which will prove useful information.

In the modern nursery every possible effort is made to keep the buds and scions carefully separated. The trees from which they come are carefully marked as to variety. It gives the buyer of nursery stock a large measure of safety. In the future growers may not be sorry if they make a few additional plantings of standard varieties during the coming spring.

#### How Mr. Reber Prunes

THE when, where and how of pruning are so closely interrelated that they cannot be handled as separate subjects. There are few if any general rules of pruning which apply to all fruits so we take up the varieties or rather species separately.

The "when" of pruning depends upon what you are intending to prune. Apples and pears may be pruned any time after the leaves have fallen and before growth starts next spring. Some experts advise not to prune while the wood is frozen, but I have never noted any injurious results from pruning while the wood is frozen. Prune any day when it is sufficiently warm for you to work outdoors. I have worked at pruning with the snow knee deep

# The Complete Dormant Spray

## — controls aphids too

BULLETIN 184 of the Mass. Exp. Sta., on page 52, shows that Scalecide (1 to 15) was 100% efficient in killing aphids while hatching and with only "slight injury" to foliage when "1/4 inch open."

On the other hand, lime-sulfur (1 to 8) killed less than 10% of the aphids and caused "considerable injury"; and lime-sulfur (1 to 8) with nicotine sulphate (1 to 800) added, although effective, also caused "considerable injury," the same as when lime-sulfur was used alone.

Scalecide controls aphids, when applied as a delayed dormant spray, as the buds are showing green and the aphid eggs are hatching. And it not only controls aphids, scale, leaf-roller, bud-moth, case bearer and other insects that winter on the bark, but also kills fungous spores and controls disease—it is "the complete dormant spray"!

#### Scalecide Requires Less Labor

One barrel of Scalecide, which makes 800 gallons of spray, will cover, until they drip, as many trees as three and a half barrels of lime-sulfur, which make 1600 gallons of spray. And of course you can apply 800 gallons of Scalecide with much less labor than 1600 gallons of lime-sulfur.

#### Scalecide Is Pleasant To Use

Scalecide is soothing, healing and antiseptic to the skin of man or beast, whereas lime-sulfur is caustic and disagreeable. Scalecide does not injure even the eyes. It does not corrode the spray pump nor clog the nozzles, and being an oil, it makes the pump run easier and last longer.

#### Every Claim Has Been Proved

Every claim we make for Scalecide has been proved in our own large orchards, which now total 26,000 trees, and verified by growers throughout the U. S. We speak to you from 10 years' experience as fruit-growers, and our recommendations are based upon profitable orchard practice.

#### Order Your Scalecide Now

Get your supply of Scalecide now. Though we have doubled our factory capacity, we anticipate difficulty in meeting the demand. Order early and avoid disappointment. See the local Scalecide agent today. If there is no agent near you write for free booklet, guarantee and prices. Address Dept. 13.

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Manufacturing Chemists

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### "Makes a Tree Outgrow Its Troubles"

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bearing trees:.....young trees. I have been using.....barrels of.....  
(number) (number) (kind of dormant spray)  
My dealer is:.....  
(Name) (P.O.) (State)  
Name.....P.O.....State.....



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Greatest farm and town-home convenience ever devised. Insured complete privacy. Comfort winter and summer. A positive necessity for old folks and invalids. Guaranteed odorless and germ proof. Write for NEW low price offer at once.

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This sprayer is sturdy; tank is made of heavy brass or galvanized iron; capacity 4 gallons. Pump is two inches in diameter, seamless brass; brass castings; nothing to rust, corrode or wear out. A few strokes and you have a strong pressure to deliver long-distance fine mist or coarse spray through the Automatic, Brass, Non-cloggable Nozzle. Does not waste liquids. Easily operated by man, woman or boy.

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We make 50 different styles and sizes of sprayers. If you are interested in smaller or larger sprayers send for catalog.

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Don't buy any Log Saw, Tree Saw or Buzz Saw until you have seen the new WITTE. Lowest priced Guaranteed rig on the market. Cuts much faster than former rigs. On tests we cut 2-ft. log in 30 seconds. Tree saw cuts "em close to the ground. Goes anywhere. We are making a special advertising price NOW—So write at once for complete description of this wonderful outfit FREE. BRANCH BUZZ SAW \$29.50.

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Don't fail to investigate these bargains. Re-cleaned Tested Timothy \$3.95 bu. Sweet Clover unhulled \$4.50 bu. Sudan Grass 8½¢ lb. Prices cover some grades of limited quantities. Clover and other Grass and Field Seeds at low prices. All sold subject to State or Government Test under an absolute money-back guarantee. We specialize in grass and field seeds. Located to save you money and give quick service. We expect higher prices—Buy now and save big money. Send today for our money-saving Seed Guide, explaining all—Free. American Mutual Seed Co., Dept. 631, Chicago, Ill.

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Look to the Grinders. They do the work! Bowsher's Cone-Shape grinders are the correct principle in Feed Mill construction. They mean larger grinding surface close to center of shaft; thus more capacity, lighter draft, longer life.

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10 sizes; 2 to 25 H. P. Write for free catalogue, and  
D. N. P. BOWSHER CO., SOUTH BEND, IND.

and blowing so I could hardly see.

Peaches should not be pruned before March or early April. If pruned too early in the winter, the wood is apt to freeze back. Summer pruning is not advisable as you remove the leaves which are food laboratories. Cherries and plums should be pruned while dormant but very lightly. In fact it is better to not prune cherries and plums at all than to prune too much.

#### Ideals in Apple Pruning.

There are two general styles of pruning apple trees: the pyramid and the vase style. In the pyramid style, the main stem is allowed to grow upright to considerable height and the fruit is borne upon side branches. It makes a sturdy tree, especially in a windy climate such as that of the western states, but has the disadvantage of growing the fruit out of reach. It does not allow of opening the top to admit sunlight. This type was generally followed in the old orchards but is not the best type for our eastern orchards.

The vase type of tree has the central stem cut out and the fruiting branches all originate at the head of the tree a few feet from the ground. In pruning young trees, aim for this type. This applies to pear trees as well as apples. Cut out all branches which overlap others. Keep the head of the tree open. Cut out branches which are immediately over others as both fruit and leaves must have sunlight. Head back branches which tend to grow too upright, but make the cut just above a leaf bud which will grow outward. Aim to keep the trees low enough so that the fruit may be picked from a step ladder, but high enough from the ground so that the ground may be worked.

The tree which has been brought up right never needs a saw unless a large branch is accidentally broken. You will need a hand-pruning shears, a two-hand double-cut pruning shears and a swivel pruning saw with interchangeable blades. Never use a hatchet, ax or bucksaw for pruning tools. That last sounds foolish, but I have seen men using those very tools for their pruning.

When you are compelled to saw off a branch, make a cut from the under side first then the branch will not split off when you cut from above. Make all cuts as close to the trunk as possible. Paint large cuts with white lead and oil but never use coal tar preparations for painting wounds. They are poisonous to trees. Thick whitewash will do for painting large cuts, grafting wax is still better. The idea is to keep the wood from checking so that bacteria may enter. Take time to look a tree over before you begin to prune. Each tree is a separate problem. Before you make a cut know why you are making it. Pruning is one job in which hurrying doesn't pay. Don't be afraid to prune because of lack of experience. Get the tools and go to it. To paraphrase a stock advertising phrase, "you will earn while you learn."

#### Grapes Need Special Attention.

Grapes should be pruned during the winter or very early spring. You should have but one main stem from the ground up to the supporting wires. On each side of the head of this stem, cut away all the old wood and all of the new but two runners. Select runners which have short joints and aim to leave from ten to fifteen buds or joints. Grapes must be pruned every winter. We cut away the extra wood for the purpose of securing extra large bunches of superior fruit. The stem is capable of raising just so much sap from the ground to the head. It remains with us whether we allow that sap to nourish dozens of runners and produce a small amount of scraggly, inferior fruit or prune away much of the wood and thus throw the sap into not more than four runners and secure a large quantity of fine fruit. That is why we prune so severely.

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Just send your name, size and address, and I will send this sweater and pair of trousers to you. You don't pay one penny until they are delivered at your door by the postman. Trousers alone are worth more than \$2.98, so you are getting the sweater absolutely FREE. Send your order now.

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**Pants and Sweater**  
**Both \$2.98 for**

The trousers are made of a very strong and durable gray striped worsted material. They have customary pockets and belt straps. All seams are double stitched and guaranteed not to rip. These trousers would ordinarily sell for more than \$2.98. Color: Oxford gray stripes only. Sizes: 30 to 44 inches waist measure.

The sweater is made of heavy commercial yarn, woven in slip-over style, with round neck and sleeveless. Fits snugly to body. Colors: Khaki or navy blue. Sizes: 34 to 46 chest measure. Remember, one sweater and one pair of trousers for \$2.98. They will not be sold separately.

**Delivery Free** Just send your name and address and color. Be sure to give size and color. When the sweater and trousers are delivered at your door by the postman, pay him \$2.98 for them. We have paid the delivery charges. Wear both articles and if you don't find them all you expected, return them and we will cheerfully refund your money at once. Order by No. 42.

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Our free Catalog describes and illustrates a full line of choice small fruit plants. SEND FOR IT.  
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**Strawberry Plants** 26 varieties, \$3.75 per 1000. History and illustrated book gives all details about most vigorous true-to-nature, productive stock now grown. Book free. **MAYERS PLANT NURSERY** Merrill, Michigan

## U. S. RECORD BROKEN,

Champion everbearing strawberries, 352 cases, \$2,059.20 in 129 days. 1 acre. Plants \$2.50 per 100 postpaid. Booklet free. **EDW. LUBKE, New Buffalo, Mich.**



## Should Use More Milk

HOW many members of your family drink milk, three times a day, and seven days in the week? How many drink any milk at all?

As a usual thing, a higher percentage of people in cities form the habit of drinking milk with their meals than do those on farms where milk is produced. It is not at all uncommon for the country boy or girl to go away to school, or to the city, and there acquire his first liking for milk—the most perfect food in the world. Often the habit is begun when he orders a half-pint bottle of milk at some cafeteria, or chooses from the counter a small plate of cottage cheese, later on beginning to wonder why he had never cared to drink milk at home, or eat the portion of cottage cheese prepared by his mother.

A recent survey made in Michigan reveals that about seventy-three per cent of the children whose parents live on farms do not drink milk, and many refuse to eat milk products, such as cheese, or butter. It has been stated that many of the "Drink a Glass a Day" milk campaigns conducted in our cities have been instituted for purely commercial reasons. Granting that this might, in some cases be true, we have no such purpose, could have no such purpose, with the readers of the Michigan Farmer.

The Michigan department of health would merely like to see a larger percentage of rural children take advantage of their opportunity to get as much as possible of this best all-round food. For that is what milk is. It not only tastes good, but it makes bone, muscle, and blood. It has been said that the vigor and success of a nation depend largely upon the amount of milk its citizens drink.

Milk is the best single food because it contains a mixture of all the important things that we find in a mixed diet. We find the same nourishing elements in milk that are contained in a meal made up of meat and eggs, cereals and sugar, oils and fats, with salt and water. Milk is a fuel food: it contains sugar and fat, and the body needs fuel foods to keep it warm, and to make it move in work and play. But milk is also a good food because it contains those elements which repair waste, aid growth, and builds flesh and bone.

We used to believe that children grew bow-legged when permitted to walk too young—that the weight of their bodies was too much for the soft bones of their bodies. But this is only a half-truth, and bow-leggedness is due as much to the lack of lime in the youngsters' diet as to early walking. Another reason children need milk, lots of milk, is that our perfect food contains large quantities of lime needed in the building of growing bones and teeth. To supply new material for the bones of the body, adults need milk and the time it contains nearly as much as growing children.

Milk is not a drink, primarily. It should be eaten, not swallowed as a beverage. To get a few ounces of milk from its mother's breast takes a baby from fifteen to twenty minutes. Milk should be "chewed," taken in small sips, rolled about the mouth, and enjoyed much after the manner one consumes a glass of malted-milk.

Children need milk because it contains a substance absolutely necessary to healthy growth. That substance is called vitamine, and though children get some of it in their other foods they alone do not furnish it in sufficient quantities. Your boys and girls should be given a chance to grow—especially when it is much easier to furnish them

(Continued on page 171).

## Don't Guess at What Feed Is Worth

Scales are used everywhere, from drug stores to steel mills, but they are no more important anywhere than at the feed trough and behind the cows in the dairy barn. A daily record of feed consumption and milk production is necessary for intelligent feeding. Weigh the feed you are now feeding. Weigh the milk you get. Put down each day, for each cow, what the feed costs and what the milk brings.

### BUFFALO CORN GLUTEN FEED

Then get BUFFALO CORN GLUTEN FEED—the milk-producing concentrate—from your dealer. Mix up a mixture with wheat bran or other mill feeds, oats, etc. Make the BUFFALO CORN GLUTEN FEED one-third, one-half or more of your mixture. Then feed this mixture to your cows, each cow according to her production, but give every cow enough to show what she can do with good feed when she gets a chance. Weigh each cow's feed. Then weigh her milk. A little figuring will convince you that it pays to feed BUFFALO CORN GLUTEN FEED.

Write us for literature giving mixtures for feeding BUFFALO CORN GLUTEN FEED—and sample if you would like one. If your dealer cannot supply you, tell us who and where he is.

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A very choice lot of young bulls—sired by Edgar of Dalmeny—are, at this time, offered for sale.

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#### For Sale Woodcote Trojan-Ericas

We are offering ten cows bred to either IMP. ELCHO OF HARVESTOWN, or IMP. EDGAR OF DALMENY

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Cows and Heifers Bred to Blackcap Brandon of Woodcote 2nd For Sale  
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For Sale Having decided to sell part of my herd of pure bred Aberdeen Angus cattle, consisting of males and females of different ages  
ANDREW P. EITEL, Vermontville, Mich.

Reg. Aberdeen Ang s bulls and heifers from 6 to 18 mos. old of the very best of breeding, also Berkshire Swine, boars ready for service and pigs both sex singles, pairs or trios, will accept Liberty Bonds.  
RUSSELL BROTHERS, Merrill, Mich.

REGISTERED Aberdeen-Angus. Ten heifers, six bulls from eight to fourteen months. Best of breeding, the growthy kind that make good. Reasonable. Inquire F. J. WILBER, Olio, Mich.

The Village Farm Guernseys—offer for sale: The Pride of Sweet Orchard Farms No. 6057. Dropped Dec. 3 1919 ready to head your herd, his full sister now on A. R. test has milked over 3000 lbs. 90 lbs. fat in 50 days. Sire Langwater Wilchester (29038), dam Governor's Minnewaska 2d milking 45 lbs. daily (38153). Sire Langwater Advocate (2514), dam Imp. Gov's Minnewaska (29224). First check of \$250 takes him. Rex Griffin, Herdsman. G.J. Winter, Owner, Sebawaing, Mich.

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Two young cows and bull not related. All out of Adv. Reg. dams. Other cows with A. R. records up to 600 lbs. fat. Inspection invited.

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#### Registered Guernseys

A bull Calf, nearly ready for light service, at a price, you will pay, don't wait long on this fellow.

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Guernseys. Federal Inspected. Only 1 serviceable Gage bull left. Born Nov. 1919. Dam's and sire's dams A. R. records over 400 lbs. b. f. Class G. Traces 3 times to Imp. Mashier Sequel. Will ship on approval. Three bull calves under 7 mos. G.W. & H.G. Ray, Albion, Mich.

GUERNSEYS—REGISTERED BULL CALVES  
Containing blood of world champions.  
HICKS' GUERNSEY FARM, Saginaw, W.S. Mich.

Guernsey Bulls of May Rose Breeding. Their dams have records 420 to 650 lbs. fat also a few cows and heifers are offered.  
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For Sale Six registered Guernsey bulls May Rose breeding ready for service. Cheap if taken soon.  
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GUERNSEY BULL CALVES whose sire's dam made 19,460.20 milk, 909.05 fat. Their mother's sire's dam made 15,100.10 milk, 773.30 fat.  
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The Holstein-Friesian Association of America  
164 American Bldg., Brattleboro, Vermont

### SON OF A State Champion

We have for sale a yearling son of "Lucy Canary DeKol" who is State Champion jr. two yr. old for 1919 and 1920. Sired by "Judge Joh. Lyons" who is a son of a 34.63 lb. daughter of King Segis. Write for price and pedigree.

#### SINDLINGER BROS.

Lake Odessa,

Mich.

### The Traverse Herd

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

TRAVERSE CITY STATE HOSPITAL  
Traverse City, Mich.



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

## Two Grandsons of King Of The Pontiacs Ready for Service

From 31.18 and 28.39 lb. dams

Sire:—King of the Pontiacs Segis No. 169124, who is by King of the Pontiacs and from Hillsdale Segis (a 33 lb. daughter of King Segis) "Nuf Ced."

Dams:—Topsy Clothilde Pobes No. 172806 made 31.18 lbs. butter and 623.8 lb. milk in 7 days. Sunny Brook Nina Segis No. 43727 at 4 years produced 28.39 lbs. butter and 587.6 lbs. milk in 7 days and 105.94 lbs. butter and 2319.6 lbs. milk in 30 days.

These bulls are nicely marked and Good Individuals. Herd under federal supervision. Come and see them. For pedigree and information write Mr. Fred Alt, Mgr.

**James B. Jones Farms,**  
Romeo, Mich.

**Holstein** Friesian heifer and bull calves, purebred registered and high-grade. Price \$20 up. Splendid individuals and breeding. Write us your requirements. Brownroft Farms, McGraw, N. Y.

## NOTICE

### The Winwood Herd

on Nov. 1st will move their Herd of Pure Blood Holsteins to their new home, 1 1/2 miles south of Rochester, Mich. and for the next 30 days we will sell what bull calves we have cheap as we will be unable to get our buildings complete before winter. So get busy if you want a son of Flint Maplecrest Boy at your own price.

**JOHN H. WINN, (Inc.)**  
Roscommon, Michigan

### "Top Notch" Holsteins

Buy a "milk" Bull of Quality from the Breeders of the world's only cow to produce 800 lbs. milk in 7 days, having an 800 lb. daughter.

Our advertised bulls are selling fast. Here are two good ones:

**No. 1. King Vale Colantha De Kol, No. 307701.**

Born Oct. 11, 1919. A "TOP NOTCH" individual, backed by fifteen dams who average 30.73 lbs. butter in 7 days. Price \$175.00 f. o. b. Howell.

**No. 2. Cornucopia Wayne Segis King, No. 318409**

Born Dec. 6, 1919. His 4 nearest dams average 25.39 lbs. butter in 7 days. Dams, a 22 lb. cow with a daughter who produced 38.744 lbs. milk and 1543 lbs. butter in two consecutive years. Price \$125.00 f. o. b. Howell.

No. 1 Bull about one quarter white. No. 2 Bull about half and half.

**McPherson Farms Co.** Howell, Mich.

Our herds under U. S. Supervision.

### Here Is A Good One.

Born June 2nd, by Maplecrest De Kol Hengerveld. A sire having three sisters each with records of over 1200 pounds of butter in a year, two of them former world champions.

Calf's dam by an own brother to Highland Hartog De Kol with a yearly record of 1247.86. This combination of breeding has produced many 1000 to 1200 cows. If progeny counts, where can you equal it? Priced \$100.00 for quick sale.

Hillcrest Farm, Mgr. F. B. Lay, Kalamazoo, Mich.

**2 Heifer** calves sire a 27 lb. son of Maple Crest Korn-dyke Heng. Their dams have 19 lb. 2 yr. old sister and a 27 lb. sire. Terms \$75 down \$50 a year. M. L. McLAULIN, Redford, Mich.

**FOR SALE** Registered Holstein-Friesian bull calf ready for service extra choice breeding and individuality. King of the Pontiacs breeding. Henry S. Rohlf, R. 1, Akron, Mich.

**Reg.** Holstein-Friesian cows and heifers, priced to sell. Good individuals. Choice breeding. Some freshen soon. B. B. Heavey, Akron, Mich.

**FOR SALE** Herd of sixteen pure bred Holstein cattle. H. D. JONES, Black and White Farm, Fremont, Mich.

## DISPERSAL SALE

### Of Registered HOLSTEIN CATTLE February, 10th, 1921

Three-Fourths Mile South and One-Half Mile West of Shepardsville, Mich. on G. T. R. R.

Including seven females and six males, one of these cows has a record of 31.68 lbs. butter in seven days. There will be two of her grand daughters and two of her sons in this sale.

Charles Ridenour, R. 2, Ovid, Michigan.

### For Sale \$450.00

Cash or Terms. A show bull from A. R. O. Dam born December 15, 1918. Sired by our Show Bull.

**MODEL KING SEGIS OLISTA** Whose grand dam, OLISTA EBNESTINE, has six times made better than thirty pounds of butter. Buy now in order to have 1921-22 winter calves.

**GRAND RIVER STOCK FARMS** 815 N. East Ave., Corey J. Spencer, Owner Jackson, Mich. Under State and Federal Supervision

**Federal Herd Bull For Sale** Old enough Accredited 7 da. milk 487.80, butter 29.85, 305 da. milk 18,115.3, butter 648. She has 2 A. R. O. daughters. His sire a 24 lb. grandson of Colantha Johanna Lad, and three heifer calves 7 mos. old not related to bull. All for \$500. Vernon Clough, Parma, Mich.

**Reg. Holstein** bull calf born Nov. 1920 extra choice breeding and individuality, \$60 reg. and del. J. R. Hicks, St. Johns, Mich.

## MUMFORD'S BROOKWATER DUROCS Sell February 12th, at Ann Arbor, Mich.

It has been two years since Mich. Farmers and breeders have had an opportunity to buy Brookwater Durocs at Public Sale. This will be their opportunity to buy

### 50 Bred Sows and Gilts

They are a choice lot and will sell within the reach of the small breeder and progressive farmer. They are sired by and bred to prize winning boars of national reputation. There are some new blood lines offered in this sale that will mate well with your Brookwater stock.

In our judgement there never was a better time to buy one or more good brood sows to start a herd or to improve one already started. Brookwater Durocs are standard. They have made good and stood the test of time. There will be some show sows and show prospects sold. Get a catalog and attend the sale in Ann Arbor, February 12.

## Brookwater Farm, Ann Arbor, Mich.

Herbert W. Mumford, Owner J. B. Andrews, Manager

## O. I. C. BOARS

Choice individuals; shipped to you c. o. d. express paid and guaranteed right or your money refunded. All stock registered in buyer's name.

**J. CARL JEWETT,** Mason, Mich.

## O. I. C. HOGS

all ages sired by Callaway Edd 1918 world's grand champ. boar and C. C. Schoolmaster 1919 world's grand champion also Wonder Big Type and Giant Buster. Write your wants, all stock shipped on approval.

**CRANDELL'S PRIZE HOGS,** Cass City, Mich.

## Cluny Stock Farm

Offers the best selection of young bulls from 8 to 12 months we ever raised; out of dams up to 29.76 for aged cows and over 26 lbs. for 2 yr. olds. Yearly records up to 24000 lbs. milk and 1000 lbs. butter. Sired by our Senior Herd Sire, Maplecrest Application Pontiac, whose dam made 35 lbs. butter in 7 days and 1544 lbs. butter and 2342 lbs. milk in a year, or by Dutchland Konigan Sir Bag Apple, our Junior Herd sire, whose dam is a 30 lb. 10 yr. old maternal sister of Dutchland Colantha Denver who made 36 lbs. in 7 days and 1315 lbs. butter and 2541 lbs. milk in 1 year. Several carry the blood of both these sires.

They are extra well grown, straight and right. One of these at the head of your herd is bound to increase production.

Send for pedigrees and prices.

**R. Bruce McPherson, Howell, Mich.**

## HEREFORDS

Cows with calves at side, open or bred heifers of popular breeding for sale. Also bulls not related.

**Allen Bros. Paw Paw, Mich.**

Address Until June 1st, 1921.

**907 Osborne St., Kalamazoo, Mich.**

**Herefords For Sale** Fairfax and Disturber blood, 150 Reg. head in herds, \$35 reduction on all sires, choice females for sale. Write me your needs. Earl O. McCarty, Bad Axe, Mich.

### The Wildwood Farm

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

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

**JERSEY BULLS** Ready for Service. Raleigh-Oxford and—Majesty breeding. Meadowland Farm, Waterman & Waterman, Packard Rd., Ann Arbor, Mich.

**Lillie Farmstead Jerseys** Bull calves from R. of M. cows. OOLON C. LILLIE, Coopersville, Mich.

**Jersey Bulls** from R. of M. dams \$75 to \$150 each. NOTTEN FARM, Grass Lake, Mich.

**Jersey** bulls for sale: From Marguerite's Premier a grandson of Pops 99th and R. of M. dams. SMITH & PARKER, R. 4, Howell, Mich.

**Meridale** Interested Owl No. 111311 heads my herd bull calves from this great sire and out of R. of M. dams for sale. Leon E. Laws, R. 6, Allegan, Mich.

## Bloomdale Shorthorns

See our cattle get our prices and breeding before buying. Both bulls and females for sale.

**CARR BROS. & CO.,** Bad Axe, Mich.

## BIDWELL SHORTHORNS BUY A BULL

that will put weight on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. We guarantee every animal to be a breeder. Federal Test. One hour from Toledo, Ohio. N. Y. C. R. R.

**BIDWELL STOCK FARM,** Box D, Tecumseh, Michigan

**Milking** Shorthorns, bulls and heifers 5 mo. to 1 year old for sale at reduced prices to make room for younger stock. E. H. KURTZ, Mason, Mich.

## The Maple's Shorthorns

Kirklevington Lad, by Imp. Hartford

Welfare. In service, bulls for sale.

**J. V. WISE,** Gobleville, Mich.

## Richland Shorthorns

Imp. Lorne, Imp. Newton champion and Sterling Supreme in Service. We offer for quick sale: Five Scotch Bulls, best of breeding. Three whites at \$1000 each. One roan at \$500, one red at \$400. No females for sale. Public sale Chicago Oct. 28th.

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

## Branch County Farm

Breeders of Polled Shorthorn Cattle

**Young Bulls For Sale** Several well bred herd bull prospects.

**GEO. E. BURDICK, Mgr.,** Coldwater, Mich.

**Milking Shorthorns** Breeding the best bulls from high producing cows.

**O. M. YORK,** Millington, Mich.

## VALLEY VIEW FARMS

Choice young Shorthorn cows and heifers for sale at all times, bred or open, or a carload, also a few young bulls strong in Sultan Blood. Write

**S. H. PANGBORN & SON,** Bad Axe, Mich.

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

**Central Michigan Shorthorn Breeders Association** offer for sale 75 head; Both milk and beef breeding, all ages. New list ready Jan. 15. M. E. MILLER, Sec., Greenville, Mich.

**Milking Shorthorns.** Bull calves \$100.00 each. Federal accredited Herds. Davidson and Hall, Beland and Beland, Tecumseh, Mich.

**Polled Shorthorns** Heifer calves and yearlings priced right. **FRANK BARTLETT,** Dryden, Mich.

**Reg. Red Polled** cattle choice young bulls from 6 to 18 mo. old for sale. **FRANK KEBLER,** R. 1, Grand Ledge, Mich.

**Reg. Red Polled** bull calves, from 3 mos. to 1 year old, sired by Famous Charmer. 75% same blood as Charmer 1919 International Grand Champion. Our herd State and Federal tested. Westbrook Bros., Ionia, Mich.

## Registered Red Polled Cattle of both sex.

Write for description and prices to **WILL COTTLE,** R. 1, West Branch, Mich.



**FOR SALE:** A few choice registered

## BROWN SWISS

yearlings and calves. **SAMUEL WILLIS,** Owosso, Mich.

## HOGS

Registered Berkshires, Gilts, and Sows bred for April May and June farrow. A yearling Boar and a few younger Spring pigs. Chase Stock Farm, Mariette, Mich.

Registered Berkshires for sale. Two young boars, ready for service, two young gilts, a sow, and younger ones of either sex. Let me know your wants. **JOHN YOUNG,** R. 2, Breckenridge, Mich.

## DUROC JERSEY SWINE

for sale 2 yr. old herd boars, yearling boars and boar pigs, also bred sows and gilts. Write for pedigrees and prices. Come and see them.

**THOS. UNDERHILL & SON,** Salem, Mich.

**Duroc** bred sows and gilts for March and April farrow, at prices you can afford to pay. Write **W. C. TAYLOR,** Ionia, Mich.



Spring pigs by Walt's Orion, First Sr. Yearling Detroit, Jackson, Gd. Rapids and Saginaw 1919

**Phillips Bros, Riga, Mich.**

## Brookwater Duroc Jerseys

**BOARS—Ready for Service** Bred Sows and Gilts

Write us for Prices and Pedigrees. Mail orders a Specialty. Satisfaction guaranteed.

**BROOKWATER FARM,** Ann Arbor, Mich.

**H. W. Mumford, Owner J. B. Andrews, Mgr.**

## DUROC JERSEYS

Bred gilts, service boars and fall boar pigs at Bargain prices. Your correspondence or personal inspection is cordially invited.

**RUSH BROS.,** Oakwood Farm, Romeo, Mich.

**Michigana Durocs** Bred gilts and sows for sale at private treaty. Also bred sow sale February 21st. Satisfaction guaranteed. **O. F. FOSTER, Mgr.,** Pavilion, Mich.

**Duroc** sows and gilts bred to Walts King 29499 who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list. **NEWTON BARNHART,** St. Johns, Mich.

**Duroc Jerseys Boars** Boars of the large heavy boned type at reasonable prices. Write or better come and see **F. J. DRODT,** Monroe, Mich.

**Duroc Jersey boars** from 8 mo. to 1 yr. old. Select young sows mated to maintain size and correct type. Prices reasonable, shipped on approval and guaranteed right. **W. E. BARTLEY,** Alma, Mich.

**Write Me** at once I have just what you want heavy bone registered Duroc Jersey boars ready for service. **W. H. MAYES,** L. B. 505, Durand, Mich.

## DUROC JERSEYS

Carey U. Edmonds, Hastings, Mich.

**DUROC JERSEYS** Boars and gilts by Mich. Fath-inder. **E. D. HEYDENBERG,** Wayland, Mich.

**Down With Prices** on last fall and this spring's O. I. C. Boars. **WEBER BROS.,** Royal Oak, Mich.

**O. I. C.'s** choice spring pigs either sex. Booking orders for fall pigs. We register free and ship O. O. D. **A. J. BARKER & SON,** Belmont, Mich.

**O. I. C.'s** One last fall boar wgt. 425, two last fall gilts, bred lots of spring pigs and this fall pigs either sex, good growthy stock 1/2 mile west of Depot. City's Phone 124. **Otto B. Schultze,** Nashville, Mich.

**O. I. C.'s** Fall pigs by C. O. Big Callaway have size and quality and are priced right. **C. J. THOMPSON,** Rockford, Mich.

**O. I. C.** Bred Gilts for Mar. and Apr farrow also a few choice service boars. **CLOVER LEAF STOCK FARM,** Monroe, Mich.

**O. I. C. Gilts** bred for April and May farrow. Shipped C. O. D. **H. W. MANN,** Dansville, Mich.

**We Are Offering** at special low prices O. I. C. fall pigs sired by State Fair winners. **WEBER BROS.,** Phone 408, Royal Oak, Mich.

**Raise Chester Whites?**

**Like This**  
the original big producers

**I HAVE** started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at 4 months old. Write for my plan. More money from hogs. **G. S. BENJAMIN,** R. F. D. 10, Portland, Michigan.

**For Sale O. I. C. Swine.** Strictly Big Type with good boars and gilts left of same type and blood lines, that won for us at Ohio and Michigan State Fairs. Priced very cheap. Write us before you buy. **NEWMAN'S STOCK FARM,** R. 1, MARLETTE, MICH.

## Central Mich. O. I. C. Swine Breeders Ass'n.

Hogs of all ages of popular blood lines. Every sale guaranteed by association.

**DR. H. W. NOBLES,** Sales Mgr. Coral, Mich.

**DR. H. W. NOBLES,** Sales Mgr. Coral, Mich.

**DR. H. W. NOBLES,** Sales Mgr. Coral, Mich.

**Closing out sale** of big type Poland China hogs, which represents the work of 25 years of constructive breeding. Everything goes, including our three great herd boars, "Mich. Buster" by "Giant Buster", "A Giant", "Butler's Big Boy". Two of the best yearling prospects in Michigan great length, big bone. Come get your pick. **Jno. C. Butler,** Portland, Mich.



## BAG BALM

MADE BY THE KOW-KARE PEOPLE



A smooth  
silky  
udder

Easy milking and a full yield are possible only when the teats are soft and smooth, and the tissues healthy. The use of Bag Balm guarantees this healthy condition day in and day out. Any scratch, Cut, Soreness or inflammation heals quickly under the penetrating and soothing effect of this great ointment. Caked Bag, a serious form of udder trouble when not properly treated, responds promptly to Bag Balm. A valuable remedy in treating Bunches and Cow Pox.

65c for the liberal Bag Balm package, is a small investment for health insurance. Sold by feed dealers, general stores and druggists.

DAIRY ASSOCIATION CO., Lyndonville, Vt.



## MORE HORSE POWER

Spring clipping puts pep and pull into horses. Clipped horses dry off quickly, rest well at night, get the full benefit of their food and are fit and ready. No colds, stiffness or other ailments, to which horses low in vitality are easy prey. Heavy spring work takes vitality from unclipped horses. That's why farmers who value horsepower clip in the spring. Authorities urge it. It pays big. This Stewart No. 1 Ball Bearing Machine makes clipping easy—lasts a lifetime. Used for clipping dairy cows as well. Complete, \$14.00.

## More Wool Money

Shear with a Stewart Machine. Leaves no ridges—gets 15% more wool. Saves time, makes money. No cuts. Easy for anyone to use.

If you have a Stewart Clipping Machine, get a Stewart shearing attachment. If not, get a Stewart No. 9 Ball Bearing Shearing Machine. If you have an engine, write for Catalog No. 69.

Your dealer has Stewart Machines, or you can buy from us—send \$2 with order, pay balance on arrival.

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WE sign a Guarantee Contract to cure. Use it once and you will always depend upon SAVE-THE-HORSE. We take all the risk to keep your horses sound.

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is sold under signed MONEY-BACK Guarantee to absolutely cure Ringbone, Thoropin, SPAVIN or Shoulder, Knee, Ankle, Hoof or Tendon Disease. Over 27 years success with stubborn cases where everything else failed has proven the value of SAVE-THE-HORSE to more than 300,000 satisfied users.

### BOOK FREE

Write today for FREE Save-the-Horse BOOK of 96 pages, illustrated, telling how to locate, understand and treat any lameness; copies of Guarantee and expert veterinary advice, all FREE.

TROY CHEMICAL CO., 320 State St., Binghamton, N.Y.

Druggists everywhere sell SAVE-THE-HORSE, with signed Guarantee, or we send it direct by Parcel Post Prepaid.

## SHOULD USE MORE MILK.

(Continued from page 169).

pure, fresh, rich milk than it is the child in the city.

It is possible for grown-ups to live for months on milk alone, though a working-man would have to drink a great many quarts each day to keep up his vitality. Used in combination with other foods, milk insures a well-balanced diet. A pint of milk a day for adults; a quart a day for children should be the rule.

One quart of milk supplies food energy equal to any one of the following:

Eight eggs.  
Nine oranges.  
Three-fourths of a pound of beef-steak.

Four-fifths pounds of chicken.  
Four and a half pounds of lobster.  
Six pounds of squash.

One pound of cottage cheese supplies more protein than a pound of beef, pork, lamb, veal, or chicken.

Children must have milk—grown people ought to.

## Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Advice through this column is given free to our subscribers. Letters should state fully the history and symptoms of each case and give name and address of the writer. Initials only are published. When a reply by mail is requested the service becomes private practice and \$1 must be enclosed.

**Tuberculosis.**—Our six-year-old cow came fresh some ten weeks ago. Up to that time she had been a fairly good cow, but now she is not giving only part enough milk to nourish her calf. She has several bunches on body and is fast growing thin. She eats fairly well and drinks large quantities of water. We are thinking of killing her. H. H. New Lathrop, Mich.—Have her tested with tuberculin and if she fails to react, then dry and fatten her. It will not pay to keep her for dairy purposes.

**Spasm of Larynx.**—Choking.—Would be thankful for a little information in regard to pigs. They will come to the trough and suddenly fall backwards and lie down and kick just as if they were dying. We had two die last winter showing similar symptoms. We feed them ashes and plenty of bran. O. C. M. Carson City, Mich.—Warm their swill, milk and food, also liquify their meal to prevent choking, and spread it out thin. Don't allow the pigs to become too hungry.

**Bone Spavin.**—I have a four-year-old horse that has had bone spavin for the past twelve months. Occasionally I have applied remedies, all of which fail to reduce the bunch. Can the bunch be removed? E. W. Monroe, Mich.—Veterinarians consider it bad practice to apply a mineral acid that will dissolve a bunch of this kind. If your horse is lame, apply one part red iodine of mercury and four parts of fresh lard every twelve or fourteen days. Don't forget to give the horse a rest. If not lame, leave him alone.

**Suppurating Udder.**—Will you tell me what can be done for a cow that has been troubled all summer, with a gathering in half of her udder? The remedies I have applied fail to heal the sores. L. C. Akron, Mich.—Her symptoms are suspicious. Have her tuberculin tested, for she may have tuberculosis of the udder; if so, she may have little value, as it might prove unprofitable to feed her for beef. Apply tincture of iodine to wound and surrounding parts once a day.

**Failure to Come in Heat.**—I have two sows that fail to come in heat. One is twelve months old, never bred, the other two years old, had one litter of pigs. The youngest sow is very fat. O. J. Freeland, Mich.—Give each sow ten grains of ground nuxvomica and sixty grains of powdered licorice in feed two or three times a day, until they come in heat. Exercise the young sow more and feed her less grain.

**Indigestion.**—I have a few pigs five months old that have apparently lost their appetite and are inclined to gnaw wood. Have pigs which occasionally pass a few worms. P. J. D. Ida, Mich.—Mix equal parts of ginger, gentian, baking soda and powdered wood charcoal together and give each pig a teaspoonful at a dose in soft feed twice a day. This same remedy will help your wormy hogs.

## GOMBAULT'S CAUSTIC BALSAM

THE STANDARD REMEDY  
HUMAN and VETERINARY



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

## Soothing and Healing--A Perfect Antiseptic

As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors. A trial will convince anyone that here is a remedy without an equal. Write for any information desired. \$1.75 per bottle at druggists or sent by parcel post on receipt of price.



The Lawrence-Williams Co., - - Cleveland, Ohio

## TREAT YOUR OWN LIVE STOCK PROMPT FIRST AID IS VERY IMPORTANT

You never know when an animal is going to be sick, or some accident occur, requiring quick action to prevent loss or permanent injury. If you know what to do and have the necessary medicines on hand you can save a valuable animal that otherwise may be lost.



## There is a Dr. David Roberts Prescription for Every Animal Ailment

Study the *Practical Home Veterinarian*. Get our medicines of your local druggist. You can successfully treat Calf Cholera, Constipation, Abortion, Udder Troubles, Colic and dozens of other ailments common to livestock. If no dealer near you, write us direct. Veterinary advice free. Ask for free copy of the "Cattle Specialist" with full information pertaining to abortion in cows. Tells how to treat your own herd at small expense. Dr. DAVID ROBERTS VETERINARY CO., Inc. 640 Grand Ave., Waukesha, Wis.



## ABSORBINE

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

will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. \$2.50 per bottle, delivered. Book 7 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price \$1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps. W. F. YOUNG, INC., 268 Temple St., Springfield, Mass.

## HOGS

**O. I. C's.** Choice, large type gilts, bred to our herd sire Long Boy No. 98964, a winner in seven shows. Young sows pigs, weight about 100 lbs. bours. Special prices on all February sales. Lone Elm Farm, EARLER, MORRISH, R. 6, Flint, Mich.

**O. I. C's.** Big Type Gilts, bred for Mar. and April farrow. Boars all ages. Write me for prices. G. P. ANDREWS, Mason, Mich.

**L. S. P. C.** a few choice boars, gilts bred to Black Giant one of the best pigs out of Ill. this fall. Also a grandson of The Clansman and Harrison Big Bob. H. O. SWARTZ, Schoolcraft, Mich.

**Big Bob Mastodon** Spring gilts bred for March and April and some sows bred to Big Bob his sire was champion of the world, his dam's sire was Grand Champion of Iowa State Fair. C. E. GARNANT, Eaton Rapids, Mich.

## L. T. P. C.

70 head of Poland Chinas at private sale. Am offering spring boars from \$40 to \$50 and gilts the same price. Summer and fall pigs \$25 each. The first check will bring you the first choice. HART, PULCHER & CLINE, Address F. T. Hart, St. Louis, Mich.

## Francisco Farm Poland Chinas

Offering a dozen choice gilts and a few tried sows bred to such boars as Michigan Mastodon and Michigan Clansman. P. P. POPE, Mt. Pleasant, Mich.

## BIG TYPE POLANDS

Bred gilts for sale. Also a few choice fall pigs by The Clansman and his son The Clansboy. They are great. Immune and registered. Come or write. WESLEY HILL, R. 6, Ionia, Mich.

**Big Type** P. C. a few first class, 200 lb. boars left also some fall boar pigs good enough to head any herd. Come and see or write. E. R. LEONARD, R. 3, St. Louis, Mich.

**LARGE Type** Poland Chinas. A few choice fall boars for sale. Write or come and see them. A. A. FELDKAMP, R. 2, Manchester, Mich.

**Big Type** P. C. some very choice boars double immune, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

**Big Type** Poland Chinas bargain \$75 buys a bred gilt and a 250 lb. spring boar also choice gilts bred for \$40. Guarantee Satisfaction. DORUS HOVER, Akron, Mich.

**Big Type** Poland Chinas at lowest prices. Both sex, all ages, and bred. G. A. BAUMGARDNER, R. 2, Middleville, Mich.

**P. C. Bred** sows. Fall pigs singly or in pairs. Also S. C. Minorca cockerels all big Type of the best of breeding. Satisfaction guar. R. W. MILLS, Saline, Mich.

**L. T. P. C.** If you are looking for something good, in bred gilts at a right price. Write W. J. HAGEMAN, Augusta, Mich.



## Hampshires Again

Win Grand Champion Car Load At Chicago 1919

They also outsold and outdressed all other breeds. Can you ask for more proof? Start now with the right kind. Write for free booklet. We give private herd register free to purchasers. DEWEY HEAD, Box 15, Marion, Ohio.

**Registered** Hampshire gilts now ready to ship. Spring boars and fall pigs at a bargain. JOHN W. SNYDER, R. 4, St. Johns, Mich.

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**Wool-Mutton Shropshire Rams.** Good strong individuals, royally bred, priced right. A. H. FOSTER, Allegan, Mich.

**Shropshires** Choice ewes, all ages, bred to imported ram. Also a few rams. W. B. MCQUILLAN, R. 7, Howell, Mich.

**Registered Shropshire Ewes** and rams. Jno. Grieve, R. 3, Fowlerville, Mich.

**Want a Sheep?** Let American Hampshire Sheep Association send you dandy booklet with list of breeders. Write COMFORT A. TYLER, 22 Woodland Ave., Detroit, Mich.



# LATEST MARKET REPORTS

## GRAIN QUOTATIONS

February 1, 1921.

### Wheat.

Detroit.—Cash No. 3 red \$1.81; May \$1.74; No. 2 white and No. 2 mixed \$1.79.

Chicago.—No. 3 red \$1.83; No. 1 mixed \$1.68; March \$1.55.

### Corn.

Detroit.—Cash No. 3 yellow 62c; No. 4 yellow 59c.

Chicago.—No. 2 mixed 61½¢@62c; No. 2 yellow 62¢@63c.

### Oats.

Detroit.—Cash No. 2 white 44c; No. 3 white 42½¢; No. 4 white 39½¢.

Chicago.—No. 2 white 39½¢@39¾¢; No. 3 white 38¢@38½¢.

### Beans.

Detroit.—Immediate and prompt are steady at \$4 per cwt.

Chicago.—White beans steady. Hand-picked beans choice to fancy \$4.25@4.50; red kidney beans \$8.75@9 per cwt.

New York.—Market is dull. Choice pea, new \$4.50@4.75; do medium at \$5.50; red kidney \$9.25@9.50 per cwt.

### Rye.

Detroit.—Cash No. 2 rye \$1.56.

### Seeds.

Detroit.—Prime red clover cash and March \$12; alsike \$16; timothy \$3.10 per bushel.

Toledo.—Prime red clover, cash and January \$11.80; alsike \$15.50; timothy \$2.95 per bushel.

### Hay.

No. 1 timothy \$22@23; standard and light mixed \$21@22; No. 2 timothy \$20@21; No. 1 clover mixed and No. 1 clover \$19@20; rye straw \$13@14; wheat and oat straw \$12@13 per ton in carlots at Detroit.

## WHEAT

New export sales of wheat during the past week were the smallest in a long while, a fact which had much to do with the decline in prices to the lowest point in the last month. The British government announced that it would make no more purchases until March 1 and the German government was reported to be out of the market until April 1. Other countries, such as Italy and Belgium, which have been rather persistent buyers heretofore are turning to Argentina for their additional supplies. There is a strong suspicion that these maneuvers are merely an effort to break the price of wheat in this country. The department of agriculture has just reported stocks of wheat in the United States on January 1, 1921. The total quantity of marketable wheat, excluding farm consumption and seed, was 320,000,000 bushels, compared with 417,000,000 bushels on hand a year ago. Wheat stocks on farms were 192,000,000 bu. compared with 208,000,000 bushels a year ago; in country mills and elevators, 80,000,000 bushels compared with 124,000,000 bushels last year, and at points of large accumulation 48,000,000 bushels compared with 85,000,000 bushels a year ago. These statistics are slightly inconsistent with some of the facts concerning receipts of wheat at terminal markets and holdings reported three months ago. If the figures are correct, they indicate a very strong position for the holder of wheat.

## CORN

New low prices on the crop for corn were made during the past week. Receipts of corn at terminals are very heavy and demand is small from shippers, exporters and industries. Current prices for both the May and July options are high enough above the cash market to enable terminal elevators to buy the cash corn at a carrying charge otherwise, prices would recede still farther. Export sales of corn declined along with the demand for wheat. The Argentine surplus which consists of about 80,000,000 bushels from the old crop and the new crop in that country providing an additional surplus of 240,000,000 bushels will be available after May 1.

## OATS

The demand for oats was much smaller than usual at this season of the year and there is no immediate prospect for improvement. On the statistical basis the market for this crop looks much weaker than for wheat and rye. High prices for the latter during the spring months of the year will en-

hance the value of the small grains to some extent. Improvements in the markets for live stock will have the same effect. Present prices are low enough to have discounted the heavy movement of corn but values may dip still lower a time or two before the mid-winter movement is over.

## SEEDS

The decline in seed prices culminated early the past week and was followed by a sharp rebound. Seedsmen in most cases have not yet obtained their complete spring requirements but are not disposed to carry larger stocks than necessary. The bureau of markets reports that fairly large imports of red clover seed are on the way.

## FEEDS

Markets for feedstuffs in general continue weak and lower prices were established at Chicago and Kansas City. At the latter market a new low price for the season was reached on bran. Values are still above average pre-war levels and the cheapness of farm-grown feeds does not indicate a higher level of prices in the near future. Slight increase in milling activity was one of the factors in the decline at Kansas City.

## BEANS

Michigan beans were unsettled the past week, with lower prices on the first sessions and some recovery later. With the passing of tax settlement day it is expected that the remaining stocks in farmers' hands will be more firmly held. Remaining stocks of imported white beans are estimated at about 100,000 bags. Prices upon new purchases of foreign beans are about \$4.50 per hundred pounds c. i. f. in bond Pacific Coast ports without the duty. The cost at Chicago would be about \$6 compared with the Michigan beans at \$4.60. Prices f. o. b. Michigan shipping points are \$4.20 for the choice hand-picked stock. Prices to growers are around \$3.50 in the dirt.

## EGGS AND POULTRY

Egg markets have been erratic during the past week, sharp declines and advances following in rapid succession. Stocks are unusually light, the bureau of markets reporting the number in cold storage on January 1, as smallest for the season of any year since its

reports were started in 1916. Prices are still high compared with most other foods and buyers are disposed to avoid carrying any larger supplies than are necessary. Some foreign eggs continue to be attractive by the high levels here, Chinese eggs arriving during the past week notwithstanding the famine in China which the American people are urged to alleviate. Poultry prices at most advanced slightly.

## BUTTER

A general lack of confidence prevails in the butter markets, due primarily to offers of Danish butter at prices below domestic. Although prices are much lower than a few weeks ago buyers are not convinced that prices have reached bottom and are confining their purchases to minimum requirements. A small cargo of Danish butter arrived at New York and more is offered as low as 41½¢ c. i. f. excluding the duty. Undergrades are less abundant and the range of prices between such butter and the fancy grades is much narrower than it has been recently. Prices on 92 score fresh butter on January 29 as reported by the bureau of markets were as follows: Chicago 45½¢; New York 49½¢; Philadelphia 48½¢; Boston 50¢.

## POTATOES

The potato markets have shown but slight changes during the past week but closed lower than a week ago. Supplies have been liberal and there appears to be no anxiety over future supply. Stocks on hand on January 1 were reported to be 145,286,000 bushels compared with 127,400,000 bushels a year ago, and 174,973,000 bushels two years ago. Northern f. o. b. markets closed at a range of 83¢@1.05. Detroit.—Michigan whites \$1.90@2 per 150-lb. sack. New York.—Long Island \$3.75@4 per 180 lbs; New York whites \$2.25@2.35 per 150-lb. sack. Chicago.—Northern sacked whites \$1.10@1.20.

## DETROIT CITY MARKET

Apples and potatoes plentiful; market is easy for both. Other fruits firm and other vegetables weak. Trade is easy and quiet in all lines. Track sales to jobbers reported by the local office of the U. S. Bureau of Markets: Potatoes, supply liberal, market weak; Michigan 150-lb. sack round whites at \$1.90@2; apples, market dull on barrels; Michigan, New York, Greenings,

Baldwins, etc., A-grade \$4.50@5; cabbage, supply moderate, market weak at \$15@18 per ton; onions, supply liberal, market weak; Michigan, Ohio, Indiana yellow varieties, 100-lb. sacks 90¢@1; beets, 60¢@90¢ per bu; carrots 75¢ bu; horseradish \$5@6 bu; parsnips 60¢@90¢ bu; squash \$1.50 bu; turnips, \$1.25@1.50 bu.

## STATE FARM BUREAU MARKET REPORT

Grain markets generally have suffered declines and it is questionable whether this is temporary or the final settling of market. Exporters are not buying and local demand is not sufficient to take up the wheat supply. If hay continues to decline we will see the lowest prices on record for at least five years. Just how long farmers can afford to sell at present prices will be definitely decided in the very near future. The seed market continues to decline, though farmers are reluctant to sell. They should either hold until next year or get seed moving from farms to give time to get it cleaned and ready for sale when consumers desire it for spring seeding.

## DETROIT AREA MILK PRICES.

After repeated conferences between the directors of the Michigan Milk Producers' Association and the representatives of Detroit milk distributors, a basis of agreement for the sale of producers' milk until November 1 next was finally reached late last week. Under this agreement, the following prices are to be paid for all the producers' milk f. o. b. Detroit, with no surplus provision operative:

For the month of February, \$2.50 per cwt; March \$2.51; April \$2.51; May \$2.31; June \$2.31; July \$2.71; August \$2.71; September \$2.71; October \$2.71. The above prices are based upon the retail price of milk being 13¢ per quart. If the retail price of milk increases to 14¢ per quart, for the month of July, then the price to be paid to producers is to be \$3.03 per hundred; and should the same price of 14¢ per quart remain for August, September, and October, then the price to be paid the producer is \$3.10 per hundred. These prices are for 3.5 milk, f. o. b. Detroit, and four cents a point to be paid for everything above 3.5, and four cents a point to be deducted for everything below 3.5. If the price of milk increases to 15¢ per quart, or more, they are to receive 75 per cent of the said increase.

The contract runs to November 1, and the producers and distributors are to meet in October next, to agree upon prices for November and December, and the year of 1922.

The milk commission is to be asked to confirm this price agreement, under which it will not be called upon to function unless conditions should warrant the discussion of a change in the retail milk price.

## NEWS OF THE WEEK.

(Continued from page 136).

the amount of \$14,000 was the loot obtained in a bold daylight robbery of a branch bank in Detroit.

Monday, January 31.

It is reported that famine grips millions of Russians. Twelve people burned in a fire which destroyed the Colonial Hotel in Hoboken, New Jersey. Defending the lives of his mother and little sisters, Max Lyons, a seventeen-year-old boy of Hillsdale county shot and instantly killed his father, Chester H. Lyons. Reports from Berlin express the view that Germany will scorn the terms of indemnity agreed to at Paris.

Tuesday, February 1.

With the wheels of many manufacturing plants beginning to turn there are indications that the worst of the business depression is over so far as Michigan is concerned. Frederick H. Parkhurst, governor of Maine, died as a result of diphtheria infection with which he was attacked three weeks ago.

## COMING LIVE STOCK SALES.

Holsteins.—February 10, Charles Ride-nour, Ovid, Michigan.  
Durocs.—February 12, Brookwater Farm, Ann Arbor, Michigan.

## Live Stock Market Service

Markets for February 2.

### DETROIT

#### Cattle.

Market is very dull.

Best heavy steers	8.25@ 8.50
Mixed steers and heifers	7.25@ 8.00
Best handy wt bu steers	6.00@ 7.25
Handy light butchers	5.25@ 6.00
Light butchers	5.00
Best cows	5.00@ 6.50
Butcher cows	4.50@ 5.00
Common cows	3.25@ 4.00
Canners	2.50@ 3.00
Choice bulls	6.00@ 6.50
Bologna bulls	5.25@ 5.50
Stock bulls	4.25@ 4.75
Feeders	6.50@ 7.00
Stockers	5.00@ 6.25
Milkers and springers	5.00@ 9.00

#### Veal Calves.

Market steady.

Best	15.00@15.50
Others	5.00@12.00

#### Hogs.

Market is steady.

Mixed hogs	9.75@ 9.85
Pigs	10.50
Heavy	9.50

#### Sheep and Lambs.

Prime lambs 25¢ higher; all other grades very dull.

Best lambs	8.50@ 9.00
Fair lambs	7.00@ 7.75
Light to common	4.00@ 6.50
Fair to good sheep	3.75@ 4.00
Culls and common	1.50@ 2.50

### CHICAGO

#### Hogs.

Estimated receipts today are 28,000; holdover 11,158. Market slow, steady to 10¢ higher. Bulk of sales \$9.20@9.90; tops \$10.20; heavy 250 lbs up medium, good and choice \$9.20@9.50; medium 200 to 250 lbs medium, good and choice \$9.35@10; light 150 to 200 lbs common, medium, good and choice \$9.80@10.20; light hogs 130 to 150 lbs

common, medium, good and choice at \$9.85@10.20; heavy packing sows 250 lbs up smooth \$8.35@9; packing sows 200 lbs up rough \$8.10@8.35; pigs 130 lbs down medium, good and choice at \$9@10.10.

#### Cattle.

Estimated receipts today are 11,000. Market slow, steady to lower. Beef steers medium and heavy weight 1100 lbs up choice and prime \$8.75@9.75; do medium and good \$7.25@8.75; do common \$6.65@7.25; light weight 1100 lbs down good and choice \$8@9.50; do common and medium \$6.25@8; butcher cattle, heifers, common, medium, good and choice \$4.85@8.25; cows, common, medium, good and choice at \$4.35@7; bulls bologna and beef at \$4.50@6.65; canners and cutters cows and heifers \$3@4.35; do canner steers \$3.50@5; veal calves light and handyweight, medium, good and choice at \$10@12.50; feeder steers common, medium, good and choice \$6@8; stocker steers common, medium, good and choice \$4.75@7.65; stocker cows and heifers common, medium, good and choice \$4.60@6.

#### Sheep and Lambs.

Estimated receipts today are 15,000. Killing classes steady; feeding lambs 50¢ lower. Lambs 84 lbs down medium, good, choice and prime \$8.50@10; do 85 lbs up medium, good, choice and prime \$7.50@9.75; do culls and common \$6.50@8; spring lambs medium, good, choice and prime at \$6.50@8.25; ewes medium, good and choice \$3.25@5; ewes cull and common \$2@3.25; yearling wethers medium, good choice \$7.50@9.

## BUFFALO

Heavy hogs \$9.50@9.75; medium and mixed \$10.25@10.75; yorkers \$11; pigs at \$11.25@11.50; lambs at \$9.50@9.75; calves \$16. Cattle very dull.



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Also Makers of Feed Cutters and Silo Fillers.

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We make a specialty of White Henery Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henery Whites—We remit same day shipments arrive. **Ship Often—Ship by Express**

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**HAY** Ship to The Old Reliable House  
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**HAY** Apples, Potatoes Wanted Highest prices paid.  
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**119 Acres EXCELLENT STOCK & GRAIN LAND**  
In Fertile Valley of Virginia. Well watered. Good barn, silo and all necessary out-buildings. Young orchard of variety fruits just beginning to bear. Good nine-room frame house, worth \$5,000. Nice lawn, shade and beautiful scenery; convenient to schools, churches and depot. Only a few hours ride from Baltimore and Washington. This is a highly desirable farm in every respect and is worthy of your consideration. Priced for quick sale at \$92.50 per acre—terms reasonable. For further particulars write **OGLESBY REAL ESTATE AGENCY, Inc.,** Lynchburg, Va.

#### High Class Dairy Farm For Rent

160 acres fertile land within one mile of town. Good buildings, barns to house, 100 head of stock and feed for dairy. Will rent on share for term of years to good dairyman or stock man who can finance one-half of herd of 20 to 30 cows and furnish teams and tools. Address Box 115, care of Michigan Farmer, stating experience and financial ability in first letter.

**Choice farm,** 243 A. Jackson Co. on main gravel road; 2 miles to market; 10 room brick house; gas lights; furnace; water pressure system; complete bath; hip-roof horse barn; hip-roof basement barn 100 ft. long; 2 silos; other good out buildings; heavy soil; 50 A. alfalfa. All 1st. class condition. \$115 per A. if sold within 30 days.  
**SCHOFIELD & CRAFT,** Jackson, Mich.

#### \$850 Secures 100 Acres

With 8 cows, heifer, horse, bull, poultry, vehicles, machinery; 2 mile, mfg. town; 800,000 ft. timber, 800 cords wood, 300 barrel apple orchard, 800 sugar maples; good 8-room house, basement barn; all \$2200, easy terms. See page 13 FREE Ills. Catalog 1200 Bargains.  
**STROUT AGENCY,** 84 BC Ford Bldg., Detroit, Mich.

**FOR SALE** Choice heavy clay loam old cut over hard wood land in live farm settlement near Millersburg and Onaway. Let Clover Seed Crops pay for your land. It is doing it for others in this Wonderful Clover Seed Belt—Why not for you. **JOHN G. KRAUTH,** Millersburg, Mich. Direct Dealer.

**For Sale** 90 acre farm, Montcalm County Michigan near market, good buildings, apple and small fruit orchard, soil number one clay loam. Farmed by owner for over fifty years. Particulars upon request. **M. R. Newell,** East Lansing, Mich.

**160 acre** farm for sale, good land and buildings fine stock farm, living water in pasture 5 1/2 miles from Lansing 2 from Dewitt. 2 1/2 miles from Bath, on rural and milk route. Address **A. B. STANTON, R. 1, Bath, Mich.**

**120 ACRES** good land fair buildings and good markets private lake of about 8 acres rest nearly all hard land. Address Box 251, Linden, Mich.

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**FOR SALE** 122 acres best of improved land, good building fine location 3 miles from Lansing \$152. With 14 A. wheat. **S. W. HEMPEY, R. 1, Lansing, Mich.**

**For Sale** A good 135 acre farm in Hillsdale Co. all or description. **A. G. WELLS,** Jonesville, Mich.

### WOOL

Although the volume of buying has not been quite so large during the past week prices both at Boston and Chicago are reported as firm, with a slight upward tendency in evidence. Woolen goods markets have lost some of their recent activity, but there is a growing belief that values in this division of the trade have been crystallized on the basis of recent quotations of some of the larger mills. The Boston market is quoted as follows: Ohio and Pennsylvania fleeces, delaine unwashed 45@48c; fine unwashed 30@31c; half-blood 33@35c; three-eighths-blood combing 28@30c. Michigan and New York fleeces, delaine unwashed 44@45c; fine unwashed 29@30c; half-blood unwashed 32@34c; three-eighths-blood unwashed 27@29c.

### MORE "READJUSTMENT" NEEDED.

MUCH more "readjustment" will be necessary before the various elements of our economic and social machinery will again mesh together as they should. Thus far readjustment has been most effective in putting things out of joint. The products of the farmer and only a few others have returned practically to the pre-war level. Freight rates represent a larger fraction of market prices in the case of farm products than they do in most manufactured articles so that the full extent of the decline in returns to the farmer is not fully indicated by the reduction in central market prices.

During the past week there has been but little improvement in this condition from the farmer's point of view. Declines in a few articles which he buys have been offset by declines in the prices for farm products. Prices for farm products must advance or values upon the products of labor and factories must decline until they are once more brought into the proper balance. The whole process is likely to be a slow one and require a long period of time for its completion. The farmer has been at the worst disadvantage during the last few weeks. Changes in the future are more likely on the whole to benefit than to harm him.

Representatives of industrial and financial interests have been endeavoring to show that the present troubles of the farmer were due primarily to capitalization of land above its actual earning power. It is true that farm land values advanced about eighty per cent from 1914 to 1920, but if the element of rent were ignored altogether, present farm prices in many cases would not pay this year's cost of production. The experience of many tenants upholds that statement. Also the farmer is given sole blame for this increase in land values, whereas other members of the local community were probably equal in responsibility. It is asserted by some of these critics, who are endeavoring to speed the process of "deflating" land values now that crop prices have been "deflated," that the business man considers only his actual investment in determining the value of his business. This point of view is in flat contradiction to the increased capitalization of many industrial concerns during the last two years which was merely an effort to make permanent their temporarily high earning power. Railroads wished to have replacement cost considered in appraising their value in the recent rate case. Rents upon city real estate have advanced even more sharply than upon farm lands. Furthermore, a part of the annual increase in farm land value represents buildings, fencing, drainage and other permanent improvements.

It is a well known fact that in the past land has paid in the form of rent, only a small rate of interest on its valuation. This has been offset to some extent by the gradual increase in its value per acre, and by the safety of the original investment. Apparently the proponents of deflated land values would deny to the farmer both security of the principal and a fair rate of interest.

If farm lands are to come down in price, there are a lot of other things in the form of fixed wealth which also must come down.

There is a general opinion that all varieties of small fruit, such as peaches, pears, plums, cherries, etc., will thrive better when set out on land that has a north or northeastern exposure. The reason for this being so is that the buds will not start as early in the spring and get caught by the first frost after warm weather comes for a few days.

The grass-grown pigs are the ones that make the best breeding animals.

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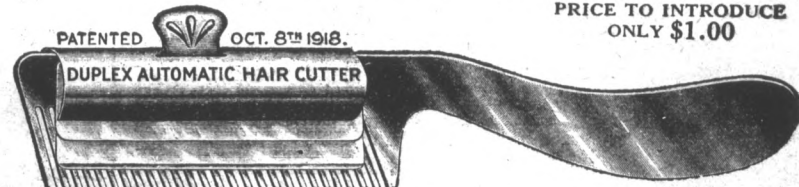
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The **DUPLEX** will cut as closely or trim as long as you wish it to. No clippers or scissors are needed with the **DUPLEX**; it finishes the work completely. It cuts the front hair long and the back hair short. Trims around the ears, etc.

Inside of a very short time you will have to pay \$2.00 for the **DUPLEX**. The price today is \$2.00, but while our present stock lasts we will accept this advertisement the same as \$1.00 cash. Cut it out and send it with ONLY \$1.00 and we will send you the **DUPLEX AUTOMATIC HAIR CUTTER** ready for instant use, postage paid, to any address. **SEND TODAY.**

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OFFER No. 112.

The Michigan Farmer, one year..\$1.00 The Michigan Farmer, one year..\$1.00

Woman's Home Companion, 1 yr. 2.00 National Sportsman, one year.... 1.00

McCall's Magazine, one year..... 1.50 Game Breeder, one year ..... 1.00

Total value .....\$4.50

Total value .....\$3.00

All for \$3.25.

All for \$2.25.



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## Army Camp Material

We are now conducting the sale of complete buildings from our purchases at Camp Merritt, Tenny, New Jersey and Camp Shelby, Hattiesburg, Miss. Millions of feet of high grade lumber, complete buildings—plumbing material and general building supplies. Mail coupon for complete lists today.

## Rawhide Guaranteed Roofing

**Smash Go Roofing Prices**  
**GOLD MEDAL ROOFING**  
No. LS4—Rawhide stone faced gold medal roofing guaranteed fifteen years. Fire resisting special coating. Full rolls of 108 sq. ft. complete with nails and cement. High grade stock, per roll... **\$3.25**

**FAMOUS RAWHIDE ROOFING**  
No. LS5—Rawhide roofing in three weights—a high grade covering in rolls 108 sq. ft. with nails and cement. Heavy weight guaranteed 12 yrs., roll, **\$2.55**; medium weight per roll **\$2.35**; light weight per roll **\$1.95**.

**CORRUGATED METAL ROOFING**  
**Ask for Freight Paid Prices!**  
We can furnish 100 sq. ft. of corrugated metal sheets as low as... **\$2.75**  
**100 SQ. FT. WALLBOARD, \$3.00**  
New serviceable wallboard. Ask for sample.

**Guaranteed Paint**  
**\$2.35** No. LS29—Won't peel, blister, fade or rub off. White, black and 26 non-fading colors. Put up in containers from 1 gal. to 50 gals. Per gal. .... **\$2.35**  
Guaranteed barn paint, red, yellow or maroon, per gal. .... **\$1.60**  
Green, slate or red, per gal. .... **\$1.80**

**Ford Radiator**  
Latest pattern **\$21.00**  
honeycomb radiator with brass core for Ford automobiles. Large capacity and cooling surface. Black wrought steel casing. No. LS30 for old or new models; war tax paid, **\$21.**

**GASOLINE ENGINE BARGAIN**  
No. LS26—A splendid engine with Webster oscillating magneto. Develops full rated horse power. A sure starter and steady worker under all conditions.

Gasoline	Kerosene
1 1/2 H. P. \$49.50	3 H. P. \$96.00
2 1/2 H. P. 83.00	5 H. P. 126.00
4 1/2 H. P. 110.00	7 H. P. 150.00
6 H. P. 170.00	10 H. P. 320.00

## Free Plan Book of 100 Houses—Reduced Prices!

**ACT NOW!** The time is here to start planning your home. Prices are smashed to "smithereens," but the high quality remains. Guaranteed new, clean stock from beginning to end. Practical, substantial and beautiful inside and outside. Can be bought under our simplified Ready Cut System, or not Ready Cut just as you like.



**\$2883** buys material to build this beautiful farm home. No. LS2015 size 25x32 ft. 8 rooms, bath Bedroom on first floor.

**Our Ready Cut System** is so simple, that a handy man can build a Harris Home. Our new free 1921 Plan Book tells all about it with illustrations, floor plans, specifications, liberal terms. Know all about our free plan offer and the numerous designs ready now for you. No lost time, material or money. Mark coupon for catalogue.

## LUMBER AND MILLWORK PRICES SMASHED!

**BELOW COST NOW**  
Lumber. For the Spring of 1921 we are going to sell many items of Lumber below our wholesale cost of last year. Practically no restriction, everything goes, large or small quantities, all BRAND NEW guaranteed stock right here in Chicago, ready for immediate shipment on your order. Prices will be as low per thousand as **\$25.00** or less.

**\$3.98**  
**DOORS:** Typical of many remarkable savings is this beautiful 5 Panel, 13-8 inch thick, Clear Oregon Fir Door. Hundreds of other different styles, sizes and woods to choose from. Guaranteed quality. Carefully packed and crated. 2 ft. 6 in. x 6 ft. 6 in. **\$3.98**

**\$2.82**  
**WINDOWS:** All kinds and sizes, including fancy plate and leaded glass, also storm sash. Clear White Pine Lumber, standard thickness, perfectly dressed and puttied. No. LS22—This fancy top two light window in 34 in. x 24 in. glass size is **\$3.54**. Windows in plain glass, same size, as low as **\$2.82**.

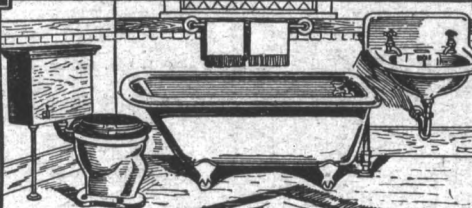
**\$1.68**  
**SCREENS:** Yes, right now is the time to begin ordering your screens or screen stock. Black galvanized or Copper Wire. Lumber used. Clear Soft Pine or Oregon Fir. Our KD screen stock will save you 50 per cent. Full size black wire screen to fit window shown. LS23, **\$1.68**.

## Chemical Toilet



Steel blue enamel finish with mahogany finish seat and cover. Exhaust pipe and one gallon of chemical.

## BATHROOM OUTFIT \$83.00



No. LS10—Consists of white porcelain enameled bath tub 5 ft. long, 30 in. wide, fitted with nickel plated connected waste and overflow and nickel plated double bath cock. White porcelain enameled lavatory, size 17x19 in. with nickel plated trap and faucets. Closet outfit includes white vitreous earthenware wash down bowl with highly finished golden oak tank, copper lined, golden oak seat and cover. Price **\$83.00**

## Kitchen Sinks



**\$37**  
**White Porcelain** sinks. Back drain board and sink cast in one piece. Furnished complete with two faucets, strainer and lead "P" trap to wall. Right or left drainboard.  
44 inches long, **\$37.00**  
48 inches long, **\$39.00**  
52 inches long, **\$40.00**

## Every Needed Plumbing Item

We furnish plumbing material for every purpose at big savings. Ask for our prices on complete air pressure water systems and equipment for your land and buildings. Mail coupon.

## WIRE NAILS

**100 \$3.95**  
No. LS24—New wire nails including all sizes from 2 to 6d. Put up in 100 lb. kegs; a handy assortment for general use—indestructible on the farm. Plenty of all sizes. Sale price per 100 lbs. **\$3.95**

## SPLENDID HOG TROUGHS

**\$1.00**  
No. LS27—The trough you have hoped and waited for. Can't tip—flared legs. Ideal individual trough for hogs and sheep. Capacity 3 gal. Size 30 in. long and 7 in. wide. Built of heavy indestructible steel. Won't rust or cave in. Painted black. Lots of 12, each **\$90c**. Lots of 6, each **\$95c**. Sale price each **\$1.** Ask for prices on large sizes.

## IRON PIPE SAVINGS

**8c per foot**  
No. LS27—Our big complete stock of pipe offers wonderful values. Pipe in random lengths complete with couplings; all sizes now offered at unusual money savings. Suitable for the conveyance of water and all liquids. Order now. 1 in. **8c** pipe, per foot.....  
Pipe in all other sizes, valves and fittings of every kind—world's largest stock at lowest prices.

## GOVERNMENT BARBED WIRE

### Greatest Offers Ever Made

A large quantity bought by us at less than the actual cost of manufacture. Fine barbed wire, made under rigid government supervision. 12 gauge open hearth steel wire with four point barbs 5/8 in. long, spaced 3 in. apart. Order quickly from special lots below.

### Extra Heavy and Durable

Coated with special weather resisting paint and put up in 58 pound reels containing about 700 ft. Also quadruple galvanized barbed wire, galvanized after being made which means much to the life of the wire. Reels weigh 60 lbs. and contain about 700 ft.

No. LS24	Painted	Galvanized
625 reels or more per reel	\$1.65	\$3.30
100 reels or more per reel	\$1.70	\$3.35
50 reels or more per reel	\$1.75	\$3.40
25 reels or more per reel	\$1.80	\$3.45
Less than 25 reels per reel	\$1.85	\$3.50

### Galvanized Wire

Smooth galvanized wire, handy and necessary about the farm. Suitable for fences, stay wires, grape vines and all purposes where enduring wire is needed. Put up in rolls of irregular lengths of from 50 to 200 ft. 9 gauge per 100 lbs., **\$4.25**, 10 gauge, **\$4.35**, 12 gauge, **\$4.45**, 13 gauge, **\$4.60**.

## Barbed Bottom Hog Fence

**26 in. High Per Rod 32c**

No. LS8—Special barbed bottom galvanized hog fencing made of No. 11 top wire and No. 14 intermediate line and stay wires. Stays spaced 6 in. apart. Space between line wires from bottom upwards are: 3, 4, 4 1/2, 5 1/2 and 6 in. 100 rods weigh 425 lbs. 26 in. high, rod, **32c**. 32 in. high, rod, **35c**. By using two strands of barbed wire above this fence you can make a general purpose farm fence at very low cost.

## Porcelain Top Cabinet

Typical of thousands **\$29.95**  
our complete catalogue of furniture, rugs and home furnishings. This is a splendid cabinet built throughout of figured light oak, nicely finished. White enameled canopy interior and white porcelain enamel metal sliding work top. Handy drawers, roomy cupboard—all latest time and step saving conveniences.  
No. LS25. Price ..... **\$29.95**

## POWER ATTACHMENT FOR FORD CARS

For Saws, Grinders, Shellers, etc. **\$15.75**  
Use Ford Power for all your farm work. Most simple attachment designed for Ford machines. Slips into place—put on or taken off in a moment—requires no tools. Operates any machine from 1 to 15 H. P. All steel. **\$15.75** Fully guaranteed. LS26, price.....

## Famous Watts Corn Sheller

**\$99.50**

The world's best corn sheller now offered at big reduced prices. Most liberal terms and a 30-day free trial with a guarantee of positive satisfaction. Order now from this ad or get full particulars without delay.

**Watts No. 1—\$34.50**  
No. LS14—For the man who shells corn for his own use. Capacity 50 to 75 bushels per hour with a 3 h.p. engine.

**Watts No. 4—\$79.50**  
No. LS15—With cleaning system, cob stacker and grain elevator. Shell for yourself and a few neighbors.  
No. LS16—Watts No. 4 Corn Sheller with cleaning system, cob stacker, grain elevator and automatic feeder as shown. Sale price now **\$99.50**.

**Watts No. 7—\$266.00**  
No. LS16—With standard equipment including wagon box, grain elevator, cob stacker, type "R" feeder on steel trucks; 200 bushels per hour.  
**3% Cash Discount on Corn Shellers if ordered direct from this advertisement.**

## Harris Cream Getter Separator

**Time to Pay If You Wish**  
LS12—These splendid machines have made a wonderful record in all sizes—all seasons of the year in all parts of the country. Newest model cream separators, easy to clean, easy to turn, easy to oil and now—easy to own.

Patented exclusive improvements everywhere—found only in these excellent separators. Fully guaranteed to get all the cream—the best cream separator you can buy regardless of name, make or price. We'll take your old separator off your hands allowing you liberally for it toward the purchase of your new cream getter.

**SPECIAL**  
LS13—Improved Cream Getter Junior Separator capacity 300 lbs. **\$33.50** an hr. on metal stand, each

Size	Cap. lbs. per hr.	Sale Price
* 1	* 175	* \$34.95
* 2	* 250	* 39.90
* 3	* 375	* 55.50
* 5	* 500	* 59.95
* 7	* 750	* 68.00
* 9	* 950	* 75.00

\* Indicates table sizes. All machines ready for shipment from Miami, Pa. and Chicago. 3 per cent discount allowed if cash is sent with order.

## Big Capacity Concrete Mixer

**\$68.00** Special! We will furnish this concrete mixer and the 1 1/2 H. P. gasoline **\$115.00** engine above for.....  
Mixes a batch every minute. Capacity 3 1/2 cubic feet. A fast, efficient, concrete mixer furnished for hand or engine power. Specially designed for farm work. No. LS31, each... **\$68.00**

## 70 Egg Incubator, \$54.50

Round like a nest—no cold corners or stagnant air pockets. Practically all metal construction. Complete glass damper. Uniform heat distribution. Water thermostat, simple regulator. Automatic ventilation. Everyone gets big results.

No. LS32 **\$54.50**

I am also interested in the following:  
☐ Roofing ☐ Wire ☐ Painting ☐ Plumbing  
☐ Wallboard ☐ Fencing ☐ Supplies ☐ Material  
☐ Pipe and Fittings ☐ Cream Separators ☐ Corn Shellers ☐ Belting & Hose ☐ Heating Material

Name.....  
Address.....

**READER NOTE** If you do not wish to use the coupon just drop us a postal card.

**HARRIS BROTHERS CO. 35th and Iron St. CHICAGO.**