

MICHIGAN FARMER

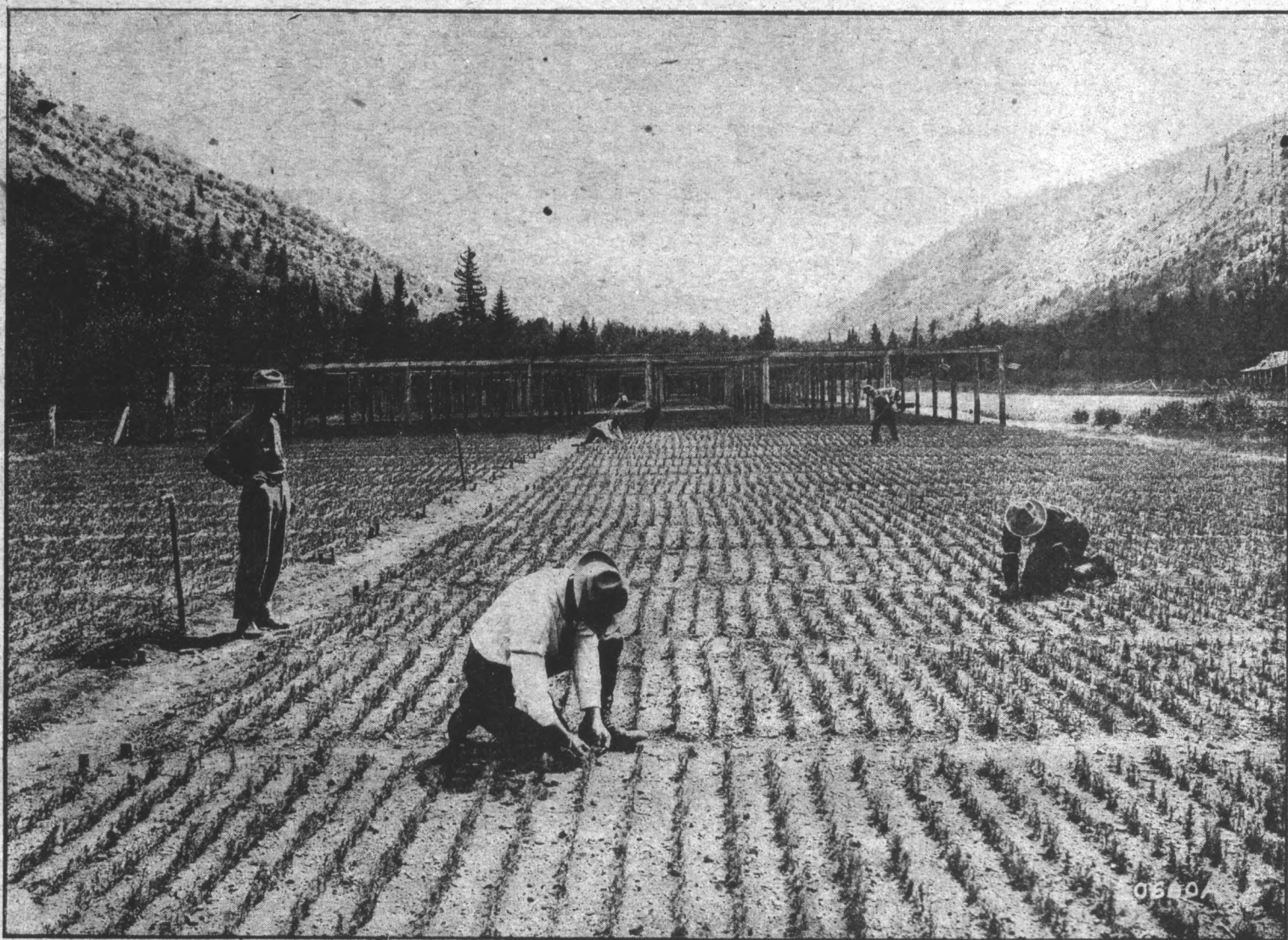
AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL
ESTABLISHED 1843.

VOL. CLVI. No. 14
Whole Number 4142

DETROIT, MICH., SATURDAY, APRIL 2, 1921

ONE YEAR \$1.00
FIVE YEARS \$3.00



How the Young Trees Are Propagated in the Reforestation Work of the United States Forest Service

Native Trees --- An Asset to the Farm

IF a man values the pleasure and comfort of his family he should make every possible effort to enrich, beautify and broaden country life and in achieving these ends he shall increase his own health and happiness many fold. If boys and girls are to be kept on the farm their impressionable years should be filled with ennobling pictures thrown upon nature's canvas—the earth. Country life can be made infinitely more charming and satisfying by the presence of trees.

Comparatively few farmers appreciate the economic value of trees growing on their farms. They prevent the surface soil from washing away, protect his herds and flocks from rains and storms, and temper the chilling winds that sweep across the home grounds. Why not begin planting trees to take the place of the forests that had such a modifying influence on the climate? Some of the old timber lots were really not well placed; they did not shelter economically. Now, why not begin plant-

ing trees to take their place? Why not put out small timber lots that will break the winds of winter and some day make good timber for use on the farm?

In past years planting trees has been looked upon as a rich man's fad—that costs a mint of money to maintain and which is slow to yield any financial return. But, we are beginning to appreciate more and more what it is to combine the beautiful with the useful, and that we can make it profitable in our present systems of farming. Practical farmers are slow to be influenced by artistic values. Therefore, it requires authoritative articles about the success of farm forestry to appeal to their business instinct. In the near future this paper will publish a series of practical farm forestry articles from a writer who has proven beyond a doubt that the farm woodlot can be made to increase in value annually sufficient to yield a profit on one hundred dollar per acre land.

Special Farm Bureau Service Starts with This Issue



Published Weekly Established 1843 Copyright 1921

The Lawrence Publishing Co.

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TERMS OF SUBSCRIPTION

One Year, 52 issues	\$1.00
Two Years, 104 issues	\$1.50
Three Years, 156 issues	\$2.00
Five Years, 260 issues	\$3.00

All sent postpaid
Canadian subscription 50c a year extra for postage

RATES OF ADVERTISING

55 cents per line agate type measurement, or \$7.70 per inch (14 agate lines or inch) per insertion. No advertisement inserted for less than \$1.65 each insertion. No objectionable advertisements inserted at any time.

Member Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as Second Class Matter at the Post Office at Detroit, Michigan, Under the Act of March 3, 1879

VOLUME CLVI. NUMBER FOURTEEN

DETROIT, APRIL 2, 1921

CURRENT COMMENT

Clearing
Commodity
Sales

THE policy to be pursued by Michigan State Farm Bureau in the development of economic cooperation among the farmers of the state was made the point of issue between the adherents to two different schools of thought on this important subject at the recent annual meeting of that organization. The central idea held by the adherents to one of these schools was that the farm bureau should build up an entirely new and comprehensive cooperative service, with centralized control of all branches, which service would be available to all farm bureau members, without affiliation with any local cooperative enterprise, other than the County Farm Bureau or a local branch of same. The adherents to the other and prevailing school of thought held to the principle that better economic results could be secured by affiliating the strong commodity cooperative sales organizations already firmly established in the state with the State Farm Bureau and further promoting the commodity idea in cooperation, with the central or state organization acting as a clearing house between them and in rendering to all such service as could be better accomplished by the central or state organization than by its various commodity units.

Since the settlement of this controversy by the delegates at the annual meeting of the Michigan State Farm Bureau, the officials of that organization have been working out plans for putting the last mentioned policy into effect. The first practical result is the affiliation of the Michigan Potato Growers' Exchange with the farm bureau, which has been accomplished by an interchange of memberships between the elevator exchange and the potato exchange, whereby member units of either organization will be given the specialized sales service of the other, as indicated in the news item published in another column of this issue. Under this arrangement, the members of every cooperative unit affiliated with the Farm Bureau Elevator Exchange will get the same service from the potato exchange as do the members of the latter's local units, in the selling of their potatoes, while the members of the potato exchange units will similarly profit by getting the same service from the elevator exchange in the marketing of other products as do the members of its locals.

This is an illustration of the clear-

ing house idea in commodity sales, which initial movement in that direction will be of great economic interest to very many Michigan farmers, particularly those of the heavy potato-producing sections of the state. The idea is capable of expansion to cover all sorts of commodity selling projects. Through the medium of affiliation with a common central organization, this economic clearing of cooperative sales will be accomplished, leaving the development of specialized sales service in each commodity to the several commodity organizations whose members are most familiar with the problems involved and who have the greatest fund of knowledge and experience upon which to draw in working them out. This will leave to the central organization the development of a general service along many lines which can be most economically performed by it in common for all commodity units.

This plan, carried to its ultimate consummation would seem to promise an optimum of economic results, and at the same time insure a maximum of local control of cooperative enterprises within the state. In simple terms, it means cooperation between cooperative units, through which the members of every unit would enjoy a maximum of service with a minimum of complications and at a minimum of cost which would be equitably distributed.

This, it would appear, is what the average farmer wants, and if he can secure it under this apparently feasible plan, it will be a quicker, more direct and more certain method than would have been the building of an entirely separate organization along new and untried lines.

Improving
Quality
of Cream

THE efforts of the various creamery companies and the dairy organizations to improve the quality of the cream used for butter-making in Michigan is a step in the right direction. Improving the quality of the cream used in the manufacture of butter is the most vital problem confronting the dairy industry today. Bad flavored, salty butter is usually the result of faulty methods of handling the milk and cream. Inferior butter not only means a direct loss of millions of dollars to dairy farmers, but it encourages the use of butter substitutes and gives foreign butter a better chance to compete successfully in our markets. When we stop to consider that American creameries have every facility for making the best grades of butter, it shows a woeful waste of opportunity to persist in accepting poor cream and flooding our markets with inferior butter.

How to encourage dairy farmers to take more pains in handling their milk and cream is a perplexing problem. Writing circular letters and sending them around will never solve it because half of the dairy farmers seldom read them. If creamery owners could open their eyes and show them that it is to their financial interest to produce better cream and pay a premium for that kind of cream it would result in improvement. No dairy farmer can afford to throw everything he now has away and build all new, but there is no dairy farmer who cannot begin in a small way and improve his surroundings so that he can produce a satisfactory grade of cream. If we are to furnish cream that will make good butter and get good prices for it, we must be progressive and keep our stock so that people will not be afraid to eat butter. Some creamery owners tell us that they cannot reach the dairy farmers who fail to fall into line. Perhaps they could if they would pay a premium for quality and refuse to accept cream from those who neglect sanitary conditions in its production. It is un-

fair to the dairy farmer who produces clean milk and cream to have his product mixed with that of those who are filthy in their work. His cream is then no better than the average and he is forced to accept the lower price. Under the present system of paying for cream in most localities it is the man who is doing absolutely nothing to improve his sanitary surroundings who is profiting by those who are trying to do something worth while. It is time that the creamery owners paid for their cream on the basis of quality. If one of their patrons persists in delivering poor cream send it back or cut him down in price until he changes his methods. If the dairy industry is to prosper the manufacturers must produce a quality of goods that the people want, and then they can get a price for them that will pay the painstaking producers to continue in the business. Good butter always commands a premium, even when the market is flooded with inferior grades. If the creamery is forced to sell at a lower price, owing to the poor grade of its product, the dairy farmer is the one who pockets the loss.

Every creamery owner should insist on his patrons delivering their cream in good condition, and it should be delivered to his plant in the original containers as often as necessary to insure it arriving in good condition. The practice of having haulers gather cream and dump the different farmer's product in large containers causes a vast amount of inferior cream to arrive at the creamery, and no amount of manipulating can restore it to its proper condition for churning. Such a state of affairs is very discouraging to the man who is trying to deliver good cream. The move on the part of the dairy interests of the state to improve the quality of the cream delivered at creameries is sure to result in better prices for Michigan butter. Of course, there are many things to overcome before all the farmers will care for their cream properly, but with a scale of prices which will insure a premium to the careful worker and a little cooperation in each community there should be no difficulty in bringing about conditions which will improve the dairy industry of the state. Such a program would gradually foster the dairy farmer who performs his work cleanly and gradually eliminate the careless worker, who will not clean up his premises and produce clean, properly cooled cream.

DETROIT MILK AREA.

LAST week a meeting of a large committee, composed of representatives of the milk producers of all the counties contributing to the Detroit market milk supply, was held at the Board of Commerce in Detroit. This committee met to consider plans for organizing and financing the proposed model plant for the manufacture of high-grade dairy products, which would supply the demand now demanding imported products, such as Swiss and Italian cheese, and at the same time provide facilities for the handling of the seasonal surplus of market milk produced in this area.

A full discussion of several plans of organization occupied the committee for the major portion of the day. Considerable difference of opinion developed as to the best type of organization and after full discussion of the plans proposed it was unanimously voted to make the board of directors of the Michigan Milk Producers' Association a committee to work out these details, with authority to call in any others whom it might desire to counsel with it in the matter. There was unanimous expression of approval of the general plan and it was the consensus of opinion that the conflicting views as to the method of financing and operating it could be easily har-

monized by working through the smaller committee.

After full discussion the members of the larger committee indorsed the views of President Hull that the control of the enterprise should not be vested in the Milk Producers' Association, but in the individual producers who finance the proposition, with the association holding about forty per cent of the voting power. The smaller committee will proceed with its work and report to the larger body at a later date.

News of the Week

Wednesday, March 23.

A FORMAL call for an extra session of congress to meet April 11 is made by President Harding.—The soviet government of Russia appeals to the United States for the adoption of a trade treaty.—While the first reports of the plebiscite in upper Silesia indicated a substantial majority favorable to Germany, later returns seem to show that a majority of the communes voted in favor of the Poles.—An oil boom is on in Seul Choix, an upper peninsula fishing village, where geologists recently reported that the fluid was to be found.

Thursday, March 24.

THE Michigan state senate votes to abolish the state constabulary.—President Harding's reappointment of Mr. Gardner, of Maine, as chairman of the joint international waterways commission, is gladly received by those who favor this great movement.—Representatives of the Chicago packers and their employees sign an agreement providing for wage reductions of approximately twelve and a half to fifteen per cent.—New York state enacts three laws putting the police power of the state behind the federal government in enforcing prohibition.

Friday, March 25.

GREEK troops start an offensive against the Turks in Asia Minor on two fronts, making long advances toward the capture of the Bagdad railway.—Government income and profits tax collections for March will approximate \$675,000,000.—Japan has decided to station troops at strategic points on the mainland in the province of Saghalien.—The National Geographic Society is publishing the boundary changes in Europe and is now working on Asia.—President Harding's cabinet will take time in answering Russia's appeal for the reestablishment of trade relations.

Saturday, March 26.

FIGHTING between communists and security police for the possession of Eisleben, Germany, has resulted in heavy casualties.—A special session of the Panama congress has been called to consider the boundary award made by the American government.—As a result of federal investigation fifty-three Mexicans are deported from Saginaw to Mexico.—Secretary of State Hughes tells the Russian soviet government that the United States is not ready to negotiate a trade agreement. The interstate commerce commission permits the railroads to revise grain rates, making them uniform throughout the country.

Sunday, March 27.

EASTER DAY exercises appeared to be unusually well attended throughout the country.—Secretary of Commerce Hoover will name a committee to consider the housing conditions of the country and work out a building code.—Former President Wilson suffers from an acute attack of indigestion.—The Mexican import duty on cotton goods will be increased ten per cent after April 30.—Twenty-four miners are reported killed by an explosion in Kukla, a Moravian mining town.—Several deaths and much property loss are reported in wake of tornadoes in Iowa, Minnesota, and the Dakotas.

Monday, March 28.

THE communist outbreak in central Germany which resulted in bloodshed in many places, is viewed by the German authorities as an attempt to establish a German soviet republic.—Greek troops advance eight miles towards Eski-Shehr and Afun-Karahisar in Asia Minor, taking many prisoners and much war material.—Recent earth disturbances in northwest China are ranked with the most destructive in history, having killed about ten thousand people, wiped out whole cities and nearly filled many valleys with debris.

EMERGENCY FORAGE CROPS

Consider Wisely Before Sowing—By A. L. Bibbins-M. A. C.

THE time is not far distant when thousands of Michigan farmers will be looking over last year's clover catch to see if it promises to provide a bountiful crop of hay for this year. Without a doubt there will be many, as is usually the case, who will find that they are going to be short on forage crops. Those who are confronted with this situation are faced with the problem of either turning off part of the dairy herd or putting in some crop to make up in part for the clover failure.

The Foxtail Millets.

Millet is an annual crop and not one to use regularly in the rotation. However, it may serve as a supplementary or a "catch crop," when there is a shortage of hay or when the corn crop fails.

Foxtail millets are far better suited for this purpose than the other type known as the Proso type, commonly called Broom Corn or Hog Millet. There are three leading varieties of the foxtail group, namely, Golden, Common and Hungarian. Professor C. R. Megee, of the Farm Crops Department, M. A. C., has conducted quite extensive tests with these varieties and found that the Golden Millet gave a yield of two and one-quarter tons of air-dry hay to the acre. The Hungarian yielded a little less and the yield of Common Millet was less than that of the Hungarian.

Truth Concerning Billion-Dollar Grass.

Some seed companies have circulated in Michigan advertising matter praising the value of Billion-Dollar Grass. One company in particular has made claims for this crop which are rather misleading and in some cases false. Such statements as "Better than corn for silo," "When fed Billion-Dollar Grass cows increase in milk and fall off when feed is changed to corn," etc., tend to encourage not a few to grow this crop, often to their sorrow.

Billion-Dollar Grass is Japanese barnyard millet. In Professor Megee's experiments he found Billion-Dollar Grass to be coarser and not as palatable as the Golden and Common Millets. It is a very coarse, woody and unpalatable forage crop. When cut in the early stages of its growth it may

not be woody but at that time it does not produce a satisfactory growth. Billion-Dollar Grass is not recommended for the use of Michigan farmers.

How to Grow Millet.

There is a place for millet in Michigan agriculture; but why not use those varieties which experimenters of the college and farmers of Michigan have demonstrated to be most satisfactory?

The millet crop is not adapted to the sands, being best adapted to the fertile mellow loams. It is a shallow feeding crop so belongs on a soil the surface of which is rich and well sup-

plied with organic matter and moisture. If hay is cut too early it may have a more or less laxative effect upon the animals. A good rule to go by is to cut when the majority of the heads are formed. The best quality of the hay will be had if the crop is cut during blooming period, curing much the same as alfalfa.

Sudan Grass.

In the southern states two and three crops of Sudan Grass are harvested in a single season; however, one crop with a little aftermath is about all that may be expected in Michigan.

Yields of Sudan Grass compare very

favorably with those of millet but the quality is not usually as good in that Sudan Grass tends to be coarser.

Sudan Grass matures from one to two weeks later than millet, hence should be sown that much earlier. If one is in need of an emergency hay crop and can sow from May 20 to June 1, Sudan Grass sown at the rate of about twenty-five pounds to the acre may be better than millet, but for the later seedings it probably will be wiser to use one of the leading varieties of foxtail millet.

Other Forage Crops. One of the most widely grown emergency forage feeds is a mixture of oats and peas which does very well on the fertile loam soils. Mixing one bushel of each and drilling at the rate of two and one-fourth bushels per acre early in the spring on a firm seed bed should provide a ton and a half to two tons of good hay.

For soils more sandy in nature it will probably be better to substitute twenty pounds of vetch for the peas and mix with two bushels of oats. The vetch will do better on sandy loams while the peas are better suited to the heavier loams.

Soy beans are rapidly coming into the favor of Michigan farmers, and properly handled, are yielding two to three tons of hay to the acre.

The Manchu and Ito San varieties are very well adapted for this purpose.

The Hollybrook may do in the southern and southwestern sections of the state for forage purposes, but are too late in maturing for the central and north central regions of Michigan.

The soys may be drilled in very shallow at the rate of six to eight pecks to the acre on a firm and clean seedbed. Soys are planted from the middle of May to June 10, with quite good prospects for a successful crop.

While considering forage crops let us not forget our old stand-by, "king-corn." Yields of six to eight tons per acre of nutritious forage are to be had by putting the corn in thick in thirty-two-inch rows. The time of drilling may be delayed until the middle of the latter part of June and the crop harvested in August. Of course, one cannot expect much grain from such a planting; however, the stalks should be tender and very palatable.

If one is in need of an emergency forage crop it will be well to wisely study the soil conditions and to know the seed that is to be sown.

It is usually well to beware of new crops and varieties for which sensational claims are made. The experiment station at M. A. C. is continually working with several varieties of various crops, and always with the farmer's best interests at heart; hence, it should be consulted before entering into such a venture as growing one of these so-called "miraculous crops."

A Real Hill of Potatoes



ON his farm near Marquette, Robert Blemhuber has grown some remarkable yields of potatoes. Here is a hill from his 1920 field which has every appearance of being a record-breaker. The hill produced a total of thirty-three pounds of tubers. After sorting there were thirty and one-fourth pounds of marketable specimens. In all, the hill yielded sixty-five potatoes, of which fifty were of marketable size. Had Mr. Blemhuber produced a full acre of such hills the yield would have run into the thousands of bushels.

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FERTILIZER FOR POTATOES

I have a light clover sod which I wish to plant to part early and part late potatoes, and wish to put fertilizer on same. The ground is sandy loam. What kind is best, and what is least amount per acre that should be used? If I waited until the potatoes were planted and put a couple of handfuls on each hill and covered with the cultivator, would the results be as good as if the fertilizer were broadcast? I have no fertilizer drill. How much fertilizer would it take to equal ten tons of manure per acre?—B. H.

It is not an easy matter to give positive recommendations as to the quantity of fertilizer and kind to use for a potato or any similar crop. So much depends upon the previous treatment and the character of the soil. Every grower, in order to secure dependable information, should make comparative tests on his own farm. However, we can give recommendations of a general nature which can be modified to suit various conditions.

Generally speaking, fertilizers used for the early crop are applied earlier in the season than is necessary for the late crop. For this reason it is often an advantage to have some nitrogen in the fertilizer used on the early crop

in order to start the plants off promptly. It may not be so essential for the late crop, particularly if a clover sod has been plowed under. The suggestions which you make of two hundred pounds of potash and one hundred pounds of phosphoric acid, per acre seems to me is too large a percentage of potash, both from the standpoint of need and cost.

Phosphoric acid is more economical to buy than potash or nitrogen and it is usually more certain to be needed on Michigan soils. Then, too, the phosphoric acid is not leachable to any extent while the nitrogen easily leaches out. When the potatoes are planted on a sod which has little or no clover or alfalfa in it, we would recommend two to four per cent nitrogen, eight to twelve per cent phosphoric acid and four to five per cent potash. When a clover sod has been plowed under the nitrogen can be reduced or eliminated. If manure has been used in fairly liberal quantity, acid phosphate alone may be sufficient, used at the rate of two hundred to three hundred pounds per acre.

When you come to compare commercial fertilizer with manure it is difficult to make a fair comparison. From the standpoint of plant food carried, manure varies considerably. According to Voorhees, a ton of manure contains, not including the lime, about twenty-eight pounds of actual fertilizer constituents. Most manures are deficient in phosphoric acid. There is an additional advantage of manures over commercial fertilizers which is equal to and sometimes exceed the value of the plant food elements, that is the organic matter. Commercial fertilizer cannot be made to entirely take the place of stable manure unless there is much vegetable fibre in the soil.

Commercial fertilizers usually give best returns when they are used in combination with stable manure. It is not usually profitable to apply less than two hundred pounds of commercial fertilizer containing phosphoric acid and one or both of the other elements per acre. It is not infrequent to use two hundred to three hundred pounds of acid phosphate per acre. When a combined fertilizer, either two

or three elements, is used, the quantity is usually increased to four hundred or five hundred pounds.

The most economical way of applying commercial fertilizers on potatoes is to sow the fertilizer through a fertilizer attachment to a planter or through a fertilizer attachment to a grain drill or if neither of these tools are available sow the fertilizer broadcast during the process of preparing the soil for the crop and thoroughly work the fertilizer into the moist soil with a disc or harrow. It is not usually a good practice in the sections of the country where drought is quite likely to occur during August or September to sow fertilizer on the surface of the soil after the potatoes are up. This practice is followed to some extent in certain regions where an abundance of rainfall occurs throughout the growing season; but sowing fertilizer on the surface of the soil in a climate subject to drought frequently results in the fertilizer not being made use of by the plants because of lack of proper dissolving of the fertilizer.—C. W. Ward, Extension Specialist.

LATE AGRICULTURAL NEWS

FARM LOAN BONDS DELAYED.

ON account of changes in the plates for engraving the federal farm loan bonds, deliveries cannot be made before April 15. The bonds will be marketed through the federal land banks, the farm loan associations, and distributing houses which have handled other issues, and the proceeds of the bonds should be available so that the banks may begin making loans to farmers by May 1, according to federal farm loan board officials. Applications have already been made for upwards of \$100,000,000 of loans, so that the \$75,000,000 bond issue will not cover all the applications now approved.

EMERGENCY TARIFF TO BE REENACTED.

IT is now definitely settled that the emergency tariff bill vetoed by President Wilson will be reenacted by congress just as soon as possible, if the administration leaders have their way. The only change agreed upon is a reduction of the time it will run from ten to six months. This change is made for the reason that a permanent tariff law will go into effect before the end of the six months. In order to get the emergency tariff through without delay, senate leaders have agreed to limit debate.

FARMER ORGANIZATIONS TO DO TEAM WORK.

AS a result of the get-together movement that has been promoted in Washington, the executive committees of seven leading farmers' organizations will hold a conference at the Harrington Hotel in that city on April 14, for the purpose of formulating a legislative program to which all of these organizations can subscribe. It is believed that all seven associations can agree in support of the truth-in-fabric, cold storage, Muscle Shoals nitrate plant development, farmers' collective bargaining, and packer control legislation, and on the more important items in the tariff schedules.

After the various items have been unanimously agreed upon an affirmative statement will be issued declaring that the seven organizations are in complete accord on these points and a united presentation of the legislative program will be made in congress. The National Grange, American Farm Bureau Federation and National Milk Producers' Federation are among the seven cooperating organizations. Heretofore there has been some team work along general lines among the various organizations in the congressional hearings, yet differences in views and minor points have had a tendency to weaken the farmer's case. This move is believed to be the most important advance step taken by the farmers' organizations in a long time.

FOREST PRODUCERS ORGANIZE.

THE State Farm Bureau Forestry Department's service to timber producing and consuming members of the state has attracted national attention and the organization has been asked to join efforts with the Central Logmen's Bureau, a producers' organization in Ohio which claims to do business in twenty-seven states on behalf of log men of those states.

Both organizations, declares the log men's bureau, are non-profit organizations and working along the same lines. They are fundamentally opposed to waste in lumbering operations

and the sale of timber, particularly in buyers throwing out merchantable timber because it would not bring a top margin of profit. The log men's bureau charges that in the past millions of feet of merchantable timber have been thrown out ruthlessly and left to rot, causing the producer and the nation a loss of millions of dollars.

The timber-marketing bodies are also concerned with assisting the log man to market his logs on a quality basis, and in the formation of pools which will lower his handling costs.

Bearing in mind that the end of Michigan's timber supply is in sight, F. H. Sanford, head of the Farm Bureau Forestry Department, is studying the aims and principles of the Central Log Men's Bureau to determine whether or not such affiliation of efforts would be of interest to Michigan Farm Bureau members.

DR. THATCHER SUCCEEDS DR. JORDON AT GENEVA STATION.

THE board of control of the New York Experiment Station has appointed Dr. Roscoe W. Thatcher, dean of agriculture of the University of Minnesota, to succeed Dr. Whitman H. Jordon, whose resignation does into effect the first of July. Dr. U. P. Hedrick was appointed vice-director.

THINKS TARIFF PREFERABLE TO AN EMBARGO.

A TEMPORARY embargo on wool and several other products has been proposed by Senator Smoot and other senators, but Secretary of Commerce Herbert Hoover declares that an embargo to prevent dumping of foreign products would be difficult to put into operation. He favors a tariff rather than an embargo as a protective measure. Secretary of Agriculture Wallace has also stated that he is in favor of an emergency tariff law such as the one recently vetoed by Mr. Wilson. Mr. Hoover maintains that the most urgent need just now is credit to revive the movement of exports as an aid to business revival. He announces that the departments of commerce and agriculture are cooperating with the War Finance Corporation in an effort to stimulate exports.

The active cooperation of Secretary Hoover with Eugene Meyer, Jr., of New York, who has recently been reinstated as managing director of the War Finance Corporation, it is expected, will result in a forward export movement. The War Finance Corporation has already granted a loan to southern banks for the purpose of financing a large shipment of cotton to Germany and Czechoslovakia. Many applications for loans are being received by the War Finance Corporation, and Secretary of the Treasury Mellon is showing a disposition to aid in the development of the finance corporation's activities. How much benefit the farmers will receive from these loans to exporting companies remains to be seen.

LOBBYISTS ARE CONGREGATING.

AS the date approaches for the opening of the sixty-seventh congress in extraordinary session, the lobbies in Washington are strengthening their forces and laying plans for enlarging their spheres of influence in congress. It is claimed that one hundred and twenty organized lobbies maintain headquarters in Washington, some of them with high-sounding names evidently chosen to disguise their real purpose. The total number of organized and independent, free-

lance lobbyists there, swarming about the house and senate office buildings, the Capitol, and various executive departments, is undoubtedly several times one hundred and twenty.

ANNUAL SWEET CLOVER.

INFORMATION regarding the culture of Hubam clover, a new crop commonly known as Annual White Sweet Clover, is being distributed to Michigan farmers in a circular just issued at the Michigan Agricultural College. Small seed samples—enough to plant a short single row in the garden for increase purposes—are also being sent out to interested growers.

Hubam clover has attracted widespread interest in the State during the last year, the crop holding great prospects for the future. It is an annual spring-planted sweet clover, making hay by mid-summer, and seed by fall. The new clover is of recent origin, but gives promise of filling an important place in the crop list of Michigan agriculture.

The bulletin giving information on handling and cultural methods for the crop has been edited by Professors Cox, Spragg, and Down, of the M. A. C. Farm Crops Department, and is known as Experiment Station Circular, No. 45. It can be had on request, as can the small increase seed samples. Large increases of the seed are being made through the Michigan Crop Improvement Association.

TO SELL MILK DIRECT.

THE Delta County Milk Producers' Association is a new organization of farmers in that county for the purpose of marketing milk directly to the consumer. In a building in Escanaba, on which an option has been secured, it is planned to install facilities for pasteurization, and for making butter, cheese and ice cream. It is planned to cut the margin between the price paid by the consumer and that received by the producer of milk, to stabilize the local milk market, and to promote dairying and the size of dairy herds in Delta county. The local price for milk paid producers is said to be four to seven cents per quart, which it is hoped the new scheme will raise without enhancing the milk price to the consumer. It is said that the local farm bureau membership is enthusiastic for the new venture. The stock subscription calls for one share of ten dollar stock per each cow owned by the subscriber, and an aggregate sale of fifteen hundred shares is required to inaugurate the project. Meetings are now being held to interest farmers in the proposition. The final meeting of stockholders will occur at Escanaba, March 31, to complete organization. The adjacent county of Menominee, and also Marinette county across the river in Wisconsin are stated to be organizing along similar lines.—L. A. C.

CONDEMNS PRESENT METHOD OF CONDUCTING INVESTIGATIONS.

IN line with their established policy of urging greater economy and efficiency in the conduct of state business, the federated legislative committee of the farmers' organizations of Michigan recently went on record as opposing the present practice of conducting legislative investigations of various state institutions and organizations and urged that in the future all such investigations be directed by the state administrative board and that this body be empowered to summon a

grand jury to make a complete and unbiased investigation when conditions warranted such action.

These representative farmers were of the opinion that the law-makers were not by training or experience qualified to make impartial investigations, that they should stay on the job at Lansing and confine their attention to the many perplexing legislative problems confronting them, rather than assuming duties of a judicial character.

SMALL MEAT PACKERS CLOSE PLANTS.

A STATEMENT issued by the Institute of American Meat Packers contains the information that a large number of small packers in Chicago whose business aggregates many millions of dollars annually, have shut down their plants because they could not operate at a profit with their products selling at present prices. One packer is quoted as saying that the small packers suspended operations because they were facing an inevitable loss on every hog dressed.

SHORT-COURSE MEN JUDGE STOCK.

LE ROY EMMONS, of Hastings, Roy Manley, of Sandusky, and John Muir, of Valley Center, formed the team of students in the second-year eight-weeks class who proved themselves the best stock judges among all the short-course men at M. A. C. recently when they amassed a total of 2,606 points out of a possible 3,000, more than 200 ahead of their nearest competitors, the second-year, sixteen-weeks men. Horses, beef and dairy cattle, sheep and hogs were included in the animals judged.

John Muir was high man in all classes, with 900 points. W. I. Wood, of Birmingham, 863, was second; Manley, 862, was third; Emmons, 844, was fourth, and W. G. Inglis, of Millersburg, 777, was fifth.

Manley also was second in horse judging and third in dairy cattle. Muir was tied for first in beef cattle, tied for second in dairy cattle, third in sheep and second in hogs. Emmons was second in beef cattle. Wood was third in horses, third in beef cattle, first in dairy cattle and third in hogs. Other individual leaders were: R. M. Holder, Bellevue, first in horses and second in sheep; W. H. Wright, Galien, third in horses; G. A. McLaughlin, tied for first in beef cattle and first in hogs; L. A. Gunneman, Holland, second in dairy cattle; A. C. Miller, Saline, fifth in dairy cattle; N. F. Gale, Shelby, first in sheep.

Emmons, a member of the winning team, was offered a pure-bred Duroc Jersey gilt as first prize for next year. The winning team this year won Dean Shaw's cup, while individual high men were given agricultural books and magazine subscriptions donated by Wayland Stearns, of Detroit, who was a short-course student last year.

MICHIGAN LEADS IN VALUE OF FARM BUILDINGS.

For every thousand dollars of land value in Michigan there is \$460 in farm building values, says the State Farm Bureau. This high proportion between farm and building values places Michigan well in the lead over other middle western states. Wisconsin ranks second, with \$320 farm building valuation for each thousand dollars of farm land valuation.

With Central Michigan Farmers

Mid-State Activities Show Farmers are Planning Ahead to Economize in Use of Labor

THE bog and peat lands near Standish, as well as in other parts of Michigan, hitherto held of little value to the farmer, are now being exploited for real profit. They are attracting a good deal of attention because the lowly cranberry thrives in just such soil; and in a period of long and lean years the cranberry industry of the state has grown from a hazardous undertaking into a business as stable as raising corn or wheat.

Michigan is now competing with New Jersey, Wisconsin, Massachusetts, Washington and Oregon for the distinction of being the greatest cranberry producing state in the Union, with an output in 1920 said to have exceeded a million barrels.

By improvements in the condition of growth, by careful selection and propagation of the best wild types and by control of the enemies of the vines, has the industry reached the point where it now is a profit-yielding one. But all this was not done with one full swing; much time and labor were consumed and there were years when the growers lived from day to day, not knowing where money for food was coming from. It was rather an uncertain occupation until recently, because a peculiar combination of factors enters into the growing. The cranberry demands a peat soil; a constant water supply which offers adequate protection from frost; drainage to a depth of two feet, and plenty of sand. For these reasons the seat of the industry has come to be centered in Standish.

Plantings are begun as early in the spring as possible and never later than July. Insect pests and fungus growth are common, but a way to lessen their damage has been found by the use of sprays and the pulling out of weeds. Cranberries are usually gathered by rakes or scoops in the hands of experienced "rakers." The fourth year after planting a good cranberry bog will produce from forty to sixty barrels.

Northern Michigan soil is especially adapted to the needs of the cranberry; and it is estimated that of the twenty-five thousand acres of cranberry land in the United States, Michigan has at least five thousand.

Certified Seed Potatoes.

Increase per acre production and generally higher standards are prospects for the future of central Michigan's potato industry, if seed certification work now carried on by the Michigan Potato Producers' Association gains the results confidently expected.

More than twenty-five thousand bushels of potatoes were certified by the association for seed purposes last

season, in spite of the fact that the work was started only a year ago, and the success of the movement to date indicates a great increase in certification in 1921. Certification of grain seed has been carried on in the state for several years by the Michigan Crop Association, and the potato men expect to develop parallel advantages.

Pedigreed Seeds.

About one hundred farmers of Hemlock and vicinity attended the March meeting of the Hemlock Farm Bureau local on March 16. Much interest was manifested in the state plan of providing home-grown Michigan pedigreed seeds and about \$2,000 worth of farm bureau seeds were ordered for spring planting.

Large orders for cooperative purchase of seeds and fertilizer were planned by the seventy farmers who attended the March meeting of the Bridgeport Farm Bureau Association on Thursday afternoon, March 17.

Horse Breeders Meet.

Horse breeders and others interested in promoting better horse stock in Saginaw county, were invited to attend a meeting of the executive board of the farm bureau at the court house on Saturday, March 12. The board took up consideration of the stock promotion methods that are being tried out in Freeland and Reese communities; and friends and objectors of the plans presented their arguments to the board. In the afternoon the executive board conducted its regular March work.

1921 Beet Contracts.

Some progress is being made by field men of the sugar companies in signing contracts with farmers for the 1921 sugar beet crop. Contracts are signed on the basis of a \$6.00 ton guarantee to the farmer, with a sliding scale which provides that if the price of sugar during October, November, December and January is \$6.00 a hundred, the beet price will be \$6.25 per ton. Seven-cent sugar price will bring \$7.75 a ton for beets, ten-cent sugar will bring \$11 for beets, and eleven-cent sugar \$12 per ton.

Large Alfalfa Acreage.

Five hundred acres of Grimm alfalfa, representing an increase of about \$20,000 over the value of hay crops that had been grown on the same acreage, will be grown in Saginaw county this year, according to County

Agent Arthur G. Bovay, who has been urging the raising of alfalfa in this community, in place of other kinds of hay.

About fifty acres of Grimm alfalfa was grown by Saginaw county Farm Bureau members last year, principally as an experiment, but with such gratifying results that it is believed Grimm alfalfa is destined to become an important crop in this county. The yield per acre of alfalfa is twice that of clover, and the value of alfalfa per ton is about twenty-five per cent greater. There is a great market for alfalfa in the east, which now gets its supply from Kansas and the Dakotas. Michigan, because of its location, can easily compete with these sources.

To Unionize Farm Owners.

C. E. Munson has been appointed by the Saginaw Federation of Labor as special organizer, to have charge of a campaign to establish a union organization among the farmers of Saginaw county. If the effort to unionize the farmers is successful the federation plans to effect an agreement between the city and rural unions, whereby the members of the former may purchase part of their food supplies direct from the farms.

Want Extension of M. C. R. R.

Extension of the branch line of the Michigan Central Railroad between Bay City and Midland to Mt. Pleasant was enthusiastically indorsed Thursday afternoon, March 10, by the Bay City Board of Commerce, the Midland Chamber of Commerce and the Mt. Pleasant Board of Trade. The line of railroad as tentatively mapped out would extend due west from Midland, crossing the Tittabawassee river at that place. The road would be about twenty-six miles in length and would touch several small villages and develop a part of the county in need of railroad transportation.—J. C. MILLS.

MUST CONTROL PREDATORY ANIMALS.

CLOSELY connected with the question of development of cut-over and forested lands, is the problem of controlling predatory animals. Michigan has its share of these—probably no more than its sister states, but enough of them to call for earnest efforts at their eradication.

It is a difficult problem to deal with,

and one state cannot deal with it effectively. We get our coyotes from Wisconsin and Minnesota, and our wolves from Canada, in part, at least. Although the recently published report on bounties, issued from the office of Auditor-general O. B. Fuller, at Lansing, shows that most counties of the state are paying out thousands of dollars for the destruction of predacious animals, it is clear that the bounty system is not effective.

Our unimproved lands in the north country make the problem especially acute there. An expert investigator for the United States Biological Survey who went over the district this winter, recommends a regularly maintained patrol by hunters deputized for the purpose by the state game, fish and forest fire commissioner, whose present force of wardens is inadequate for this work. I note that Mr. St. Clair Wilson, game warden for Houghton county, takes very much the same view. He points out that trappers cannot be relied on to exterminate these varmints.

At present we are employing only half-measures. It is up to the state to do something effective in cooperation apparently with the United States Biological Survey. It is a state, and a national and international problem, and seems to be more serious now than it ever was.

Our farmers have a particular concern in its solution. Lower peninsula farmers should understand that there is evidence that some of the more destructive species are gradually migrating eastward and that they will eventually pass over into the southern peninsula on the ice, especially near the straits, and become destructive of live stock, deer, partridge and other useful wild game beyond anything known in the past. This is expert, and not my own personal opinion.—L. A. CHASE.

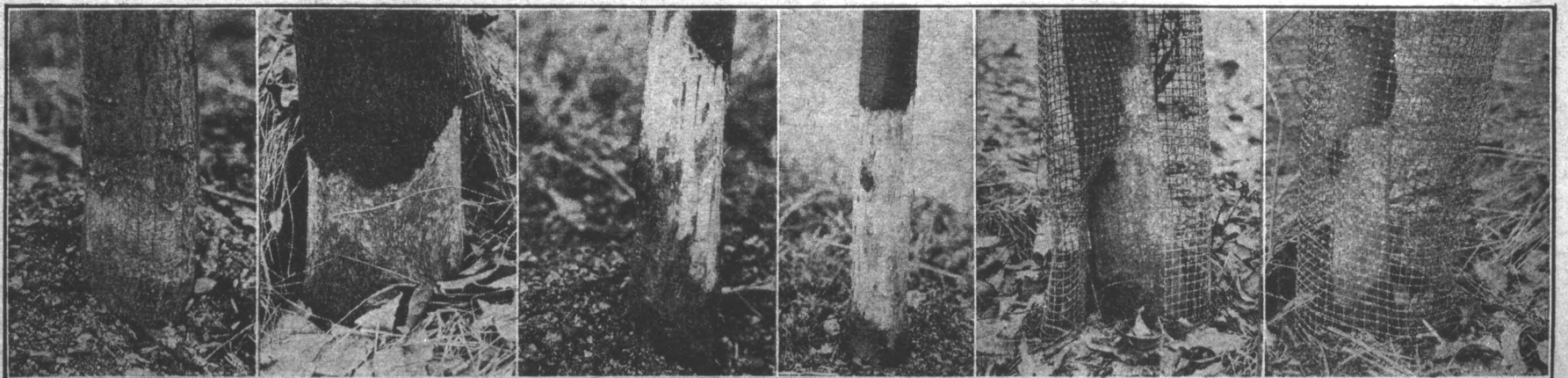
CONTROLLING CUTWORMS.

In the past we have been troubled with cutworms. Would you not give us some method of handling these destructive pests?

Poisoned bran bait makes a satisfactory remedy for cutworms. The accepted formula is wheat bran, fifty pounds; Paris green or crude arsenic, two pounds; blackstrap molasses, two quarts; water, two to four quarts or more as needed. Mix the bran and poison thoroughly in a dry state, then add the diluted molasses, and stir vigorously until thoroughly mixed. Distribute the bran over the infested field broadcast, taking care to sprinkle it sparingly around each hill. Middlings may be substituted for bran.



How Rodents Injure Fruit Trees



Reading from left to right pictures one and two show fifteen-year-old apple trees girdled by mice. Pictures three and four illustrate what woodchucks did to a seven-year-old apple tree. The next illustration shows how careful one must be in fitting the protector about the tree, for here mice found a crack through which they entered and girdled the young tree. In the last picture the mice crawled under the protector and committed their damaging work.

ACTIVITIES OF FARM BUREAUS

Latest News From Local, State and National Organizations

POTATO GROWERS' EXCHANGE JOINS FARM BUREAU.

TEMPORARY reciprocal business arrangements have been concluded between the Michigan Potato Growers' Exchange and the Michigan State Farm Bureau, which officials of both organizations declare will be of considerable economic benefit to local members of the two great cooperative marketing associations.

The arrangement provides for an interchange of marketing facilities through the Potato Growers' Exchange taking a membership in the State Farm Bureau Elevator Exchange and the latter organization taking a membership in the Cadillac exchange. Thus the highly specialized potato and other commodities marketing machinery of the Potato Growers' Exchange will be available to farm bureau locals and cooperative associations of farm bureau members now affiliated with the Farm Bureau Elevator Exchange. Grain and hay services of the Farm Bureau and Elevator Exchange will be open to marketing associations of the Potato Growers' Exchange. Locals will abide by the rules and charges of the other exchange when dealing through it, says the agreement.

High-class salesmen handle the major commodities of each marketing organization. A. B. Lorge, for the Potato Growers' Exchange is the recognized expert in his line; J. S. Bateman of the Farm Bureau Elevator Exchange is an acknowledged authority on grain and hay markets and an expert salesman. L. E. Osmer, perhaps the best known grain salesman in the state, will soon join the Farm Bureau Elevator Exchange.

Members of both exchanges will profit in that they may secure the services of the high-class men of both organizations through membership in only the organization marketing their major crop.

It is pointed out by farm bureau officials that the prospects of widespread utilization of the marketing channels just opened are very likely. It is estimated that the marketing associations of the Cadillac exchange market from five hundred to seven hundred carloads of grain annually, mostly rye. Many farm bureau elevator exchange locals have carload shipments of potatoes each year.

All marketing of potatoes and other commodities handled by the potato growers would be done from Cadillac. Grain and hay would be sold from elevator exchange headquarters in Lansing.

The closer cooperation of the two exchanges is viewed by their officials as a step toward even more comprehensive business relations under the State Farm Bureau's new plan of commodity control. It is not unlikely that similar temporary arrangements will be sought with the live stock, fruit growers and other commodity organizations of the state.

The foregoing interpretation of commodity control recognizes the commodity organizations as separately incorporated business institutions. Their dealings with other commodity organizations are purely cooperative. Complete realization of the plan would see the various commodity organizations working together, emphasizing the marketing of the major crops of their respective clientele, and cooperating with other commodity organizations for the best marketing of their respective minor crops. All organizations would be served by common service

departments, such as seed, wool, legal, transportation, etc.

The meeting at Cadillac was between the board of directors of the Michigan Potato Growers' Exchange and a special committee from the Farm Bureau, composed of President James Nicol, Hale Tennant, agent in marketing for Michigan, and Clark L. Brody, secretary.

AGRICULTURAL STATISTICS.

COLLECTIONS of agricultural statistics by the township supervisors at the time of making the annual assessment of property, is proposed in a bill introduced in the house by Representative Hopkins, of Manistee.

This measure has been prepared by the Michigan State Farm Bureau in cooperation with Mr. Verne E. Church, federal statistician with the Bureau of Crop Estimates. Ninety-five and four-tenths per cent of the replies to a state-wide questionnaire conducted by the State Farm Bureau were favorable to such a proposition.

GRAIN MARKETING PLAN INDORSED BY NINE STATES.

NINE states have indorsed the national plan of grain marketing at meetings held by the grain marketing committee of seventeen. Each of these states have elected delegates to the national ratification meeting at Chicago, April 5. There are two delegates for every \$15,000,000 worth of grain marketed per year on the average of the last ten years. Michigan has three delegates.

Tennessee is preparing to join the list of farm bureau states. A number of strong county farm bureaus have been organized in the western part of the state. The state federation will soon be formed.

AMOUNT OF SEED SOLD.

ONE and a half million pounds of alfalfa, clover, sweet clover and timothy seed have been sold to farmers of Michigan alone since December 1 by the seed department of the State Farm Bureau. This does not include another half million pounds sold outside of the state nor a large amount of those seeds used in less quantities, such as seed grain, corn, grass, rape, vetch and soy beans.

It took fifty cars to carry this seed to consignees. The actual amounts delivered by the department up until February 20, were: Grimm alfalfa 147,526; common alfalfa 150,283; medium clover 543,045; mammoth clover 141,870; alsike 130,528; timothy 329,393; sweet clover 54,669 pounds.

WOOL IS BEING MANUFACTURED INTO GOODS.

DESPITE the great slump in the wool market, the Michigan State Farm Bureau continues to find additional outlets for wool in its gigantic pool at Lansing. First it was by diversion of a part of the wool into blanket manufacture, which was an unprecedented success. Blankets continue to move at the rate of one hundred a day, and the demand keeps growing. Now in addition a portion of the growers' wool is being made into ladies' and men's suitings for sale at production cost, and arrangements have been made with a Michigan mill for that purpose.

The plan, as contemplated, will give the wool grower an additional return

on his fleeces through their sale as a manufactured product, and will give the consumer the finest virgin wool suitings obtainable at cost of production.

The farm bureau is also making arrangements with a Michigan house for tailoring service which, with high-grade lining and trimmings, may not exceed \$20 on a suit. Three and one-half yards of farm bureau suiting, production cost of which will range from \$2.50 to \$3.00 a yard, will make an average man a suit. Estimates indicate that the two services will enable the farm bureau to go a long ways in clearing away the 1920 wool pool and the consumer can buy virgin wool clothing at a cost far below that paid for the best commercial grades of clothing. Farm bureau virgin wool suitings will be absolutely free of shoddy and worked-over wool. An initial sample book is being sent out to county agents, containing twenty-five samples of suitings. Charts for prospective buyers make the measurements for a suit a simple matter.

Wool department representatives are now in the field, making arrangements for the 1921 wool pool. Twenty-five warehouses located in as many sections of the state will be ready for business April 1. Dates will be set in the respective localities for wool pooling and on those days wool will be graded and weighed before the grower. He will receive his warehouse certificate on the spot. The Michigan Agricultural College Extension Department is planning a series of exhibits which will fit in with the wool grading work.

More than three thousand blankets have been sold and a woolen mill is kept busy in keeping up with the growing demand. With blankets and suitings as adjuncts to the world market for wool, the department is looking forward to a prosperous 1921 for Michigan wool growers.

MAY RECONSIDER INCOME TAX BILL.

REPRESENTATIVE MOSIER'S resolution providing for the submission to the voters of a constitutional amendment allowing for legislative enactment of a state income tax law fell three votes short of the necessary sixty-seven when the measure came up for final passage in the house. Representative Mosier, father of the resolution, believing that he could count four or five staunch supporters of an income tax among the absentees, moved to reconsider the vote by which his resolution had lost. His motion prevailed and the resolution was laid on the table. He will move to take it from the table and bring it up again for final passage whenever there is a full attendance.

CONSERVATION DEPARTMENT ASSURED.

CREATION of a State Department of Conservation, as urgently proposed by the State Farm Bureau, was assured when the senate on March 24 passed the bill providing for the new department. The house had previously passed the bill. It now merely requires the governor's signature to become a law. The bill provides for a commission of conservation consisting of six members appointed by the governor, "with special reference to their training and experience."

The new department will take over the work of five existing boards and will have as its duties, "to protect and

conserve the natural resources of the state of Michigan; to prevent the destruction of timber by fire or otherwise; to promote the re-forestation of non-agricultural lands belonging to the state; to guard against the pollution of lakes and streams within the state; and to foster and encourage the protecting and propagation of game and fish."

OTHER STATE FARM BUREAUS.

NEBRASKA has secured 30,000 farm bureau members to date, 2,000 of whom were obtained in one week.

Cook county, Illinois, grows about ninety per cent of the onion sets of the nation, and is in a position to control the onion crop through organization. Mr. C. E. Durst, director of the fruit and vegetable marketing department of the Illinois Agricultural Association, who is organizing the onion set growers, commented favorably on the work that Michigan is doing through organization.

Gift corn for the starving Europeans is moving along nicely. Farmers are giving wholeheartedly and are impatient to get the corn started. Several railroads are hauling it free of charge. Carl Vrooman, director of the project, commented on the fine spirit and cooperation of all connected with this humanitarian project.

The Ohio Federation is planning a big "State Corn Day" on which they will load one-half million bushels for The Near East Relief, requiring three hundred and fifty cars. Up to this time Illinois has loaded more than any other two states.

Eighty-three per cent of the Iowa membership have paid their membership dues for 1921 already. An increase in the membership is also reported.

The tomato growers and canning companies of New Jersey held a joint meeting recently to cooperate in solving their mutual problems. The state federation plans to send out data on quantities of goods in the hands of canners, the cost of producing tomatoes, yields to be expected, and costs of harvesting to the grower.

H. C. McKenzie, who has been investigating federal taxes for the American Farm Bureau Federation, says that farmers should protest against the abolition of the excess profits tax as it means that the corporations will escape the tax and the farmers will be paying an income tax, a sales tax and all the consumption tax that could be given to them.

The potato growers of the United States are planning a conference and a committee to work out a plan for national marketing.

Charles R. Weeks, secretary of the Kansas State Farm Bureau, intimated that the farm bureau intends organizing the cooperative live stock shipping associations on a nation-wide basis, during the coming year. He believes that the farmer can get better prices for his live stock this way than by selling to local shippers.

NATIONAL FARM BUREAU MEETINGS.

Mid-west conference of secretaries, Chicago, April 4-5.

National fruit marketing conference, Chicago, April 4-5.

Ratification meeting of Farmers' Grain Marketing Committee of Seventeen, Chicago, April 6.

Second meeting of National Farmers' Live Stock Marketing Committee of Fifteen, Chicago, April 7.

Muck Farming Problems

By Ezra Levin

Sweet Potatoes and Strawberries on Muck.

Can sweet potatoes be grown successfully on swamp muck land that has been well tilled and drained? The soil seems very loose and is easily worked and raises good corn, pumpkins, squash, etc. Would this soil be good for strawberries?

Eaton Co.

L. W.

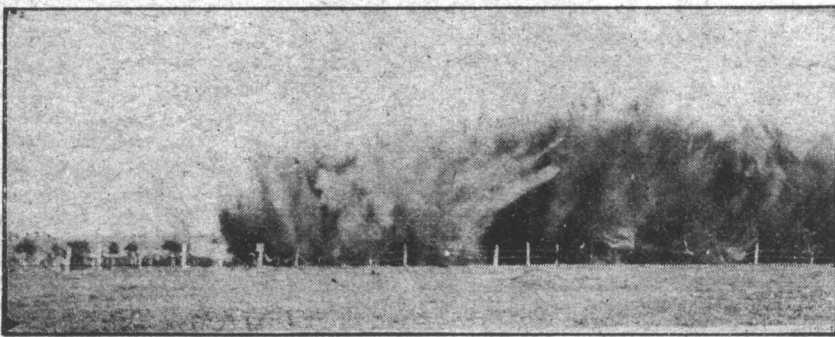
I have known of several men who have tried to grow sweet potatoes on muck land in their gardens. These men have not been successful because, they claim, the sweet potato was not of high quality. The sweet potato is not generally grown on muck soil and it can be said it is similar to the Irish potato in this respect. However, good quality potatoes may be raised on muck well drained and properly fertilized.

Strawberry plants can be raised on muck land successfully but the limiting factor to growing the berries on muck, is frost. It is a fact that the frost may damage seriously at the time when the strawberries are blossoming and fruit is forming. My limited observation seems to indicate that this condition can be largely eliminated by balancing up the muck with mineral fertilizers. It must be remembered that potash and phosphorus are important elements in making good fruit.

benefits from its use. On the other hand, experiments that have been carried on do not show some of the benefits that have been claimed for it. This is probably due to a great extent to the kind of muck, to the lack of composting and other factors. A test on sweet clover was called to my attention some time ago on an Allegan county farm, where marl had been applied and where some of the muck which covered the marl had been spread over part of the area. To anyone who saw this, there could be no question as to the difference which the muck showed. The white sweet clover showed a much heavier growth. It might be shown that muck applied to a soil which is deficient in lime, will not produce as good results as when applied to a soil which is high in lime. This may be due directly to the influence of the lime on the chemical changes taking place, or indirectly to the influence of the lime on the germs which make the muck available.

If the subscriber will advise me, we will be pleased to outline a test. This can be shown by comparing manure, muck and composts of muck and manure.

Work that was carried on in this state has been verified in New York



Blasting an Acre of Stumps at a Single Shot.

If one is growing strawberries on muck he would want a thoroughly packed soil to keep down the excessive leaf growth due to too much available nitrogen and balance this with an adequate amount of fertilizer which contains phosphoric acid and potash.

Muck as a Fertilizer.

I would like some information with regard to muck as a fertilizer. We have a ditch across our farm dug last fall. Big piles of fine muck with some marl mixed through it were thrown along the edge of this ditch. How would it be to load some of this into the spreader and spread it direct on the land at the rate of about ten loads per acre and cover same with about ten loads of barnyard manure? The land is somewhat sandy.

Jackson Co.

M. P.

The use of muck as a fertilizer has been given considerable attention, not only in this state, but in New York, Minnesota and Ontario. There are several points which might be made clear to one contemplating this use.

First.—That the nitrogenous content of the muck does not indicate how much nitrogen is available. When muck is used directly on the land the fertilizing value may be variable, depending upon the conditions and materials concerned in forming the deposit and conditions of the upland to which it is applied.

Second.—That a large part of this nitrogen does become available when mixed with manure and composted; that the organic matter of the muck does not act like the natural organic matter in the soil until it has been further changed.

There are differences of opinion in the state as to the value of muck as a fertilizer. There can be no question that many farmers have received great

by many who have used muck. It has been used on various types of land and under various conditions in orchards and for general crops. One orchardist who has worked this out made the statement that the value of a yard of muck can be placed as one dollar above cost of handling if the muck deposits are on the man's place or near it. We can not make any definite statement except that in every case where composts of manure have been called to our attention in the field and where comparisons have been kept between the use of manure and muck and the composts, it has been shown that a mixture of equal quantities of manure and muck composted several months, is equal to the same quantity of manure.

ESTABLISHING DRAINS.

I have a sag on my place where water stands in the spring so late that I can't tend it, and the only way to drain it is across my neighbor's place to the river. Can I make him put in a ditch to drain it, and how will I go about it?—W. S.

The statute declares that drains may be established whenever the public health, convenience or welfare demand it, and gives jurisdiction to the drain commissioner to establish the drain; but before he can act a petition signed by one-half of the freeholders whose land is crossed by the proposed drain must be filed with him. (Comp. Laws Sec. 4870). The fact that the pond to be drained lies wholly on the land of one person does not prevent the drain being a matter of public welfare. Apply to your local drain commissioner for detailed information as to the statutory provisions.—J. R. R.

WOOD PRESERVATION

A timely talk in the interests of timber conservation on the farm

Former Secretary of Agriculture Meredith Alarmed at Forest Waste

In his recent report to the President of the Senate, he said, among other things, that—

"Three-fifths of the original timber of the United States is gone.....The total yearly consumption of all classes of timber is about 26 billion cubic feet. Our depleted forests are growing less than one-fourth of this amount. The United States is not only cutting heavily into its remaining virgin forests every year—but it is also using up the smaller material, upon which our future supply of saw timber depends, much more rapidly than it is being replaced."



© Brown Bros.
Hon. E. T. Meredith

What Does Wood Decay Cost YOU?

How much lumber do you buy every year to replace rotted timber in your farm buildings and other structures?

How much do you pay for labor? How much of your own time do you spend in making repairs necessitated by wood decay?

Figure up these items and you'll know what your share is of the \$350,000,000 annual loss from wood decay suffered by the farmers of America.

Carbosota—The Available Remedy

Preservative treatment with Carbosota is an immediately available and very practical means of reducing the loss from wood decay, which may easily be employed on every farm, wherever situated.

Of the non-pressure carbosoting processes, Open Tank treatment (alternate hot and cold bath, or hot and cooling bath) is the most effective. Where the quantity of timber to be treated warrants the moderate expense of tanks, etc., or where a group of farmers can share the expense of a "community" treating plant, this method of treatment should be used. However, simple Surface treatments, applied by brushing or dipping, are a decided economy and increase the life of ordinary species of wood at least 30%—often 50%.

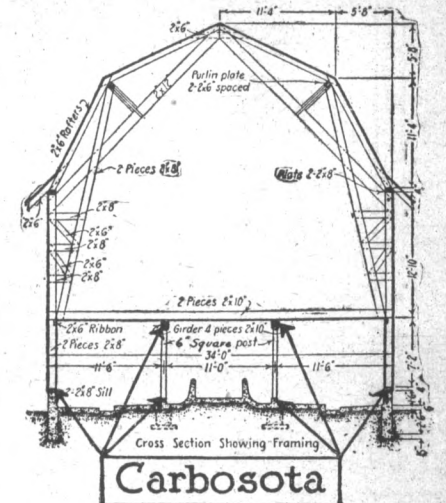
How and Where to Use Carbosota

Two brush coats of Carbosota should be applied to the parts indicated in above cross section of barn after framing and before assembling.

In every structure similar treatment should be given all timber in contact with stone, concrete, earth, steel or other wood. By thus increasing the durability of these

points of contact, which are most susceptible to decay, the life of the various portions of the building is more nearly equalized and repairs materially reduced.

The use of carbosoted lumber in construction of animal shelters, poultry houses and hog houses, aids sanitation by repelling vermin, insects and some of the common rodents. Carbosota treatment makes cheaper grades of shingles durable, largely reduces warping and curling, and, in addition, stains them a pleasing brown.



Cross section of standardized modern type of barn. Parts which should be carbosoted are indicated—entire surfaces of sills, girders and all cut ends of posts resting on metal plates, caps or on concrete. (Diagram courtesy of Nat'l Lumber Mfr's Assoc.)

When thoroughly dry, treated shingles do not taint rain water. Silos, likewise, offer an excellent opportunity for treatment with Carbosota.

Fence Posts

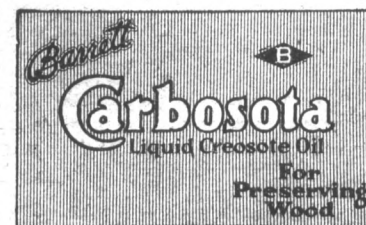
For treating of fence posts, the Open Tank process, which doubles—often triples—the period of service, should be employed. This subject will be discussed in detail in one of our future Talks.

Free Technical Service

To aid farmers in effectively practicing wood preservation, we furnish technical service free of charge; and our booklet, "Long Life for Wood," will be sent free on request to our nearest office.

Free advice on wood preservation can also be had from most Agricultural Colleges, State Experiment Stations and County Agricultural Agents throughout the country.

If your lumber dealer does not carry Carbosota, write us and we will see that you are supplied.



The Barrett Company

New York	Chicago	Philadelphia	Boston	St. Louis	Cleveland	Cincinnati
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Bangor	Washington	Johnstown	Lebanon	Youngstown	Milwaukee	Toledo
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Omaha	Houston	Denver	Jacksonville			

THE BARRETT COMPANY, Limited

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Sold on Merit

NO MATTER how sturdily a cultivator is built, how beautifully it is finished, nor what claims are made for it—the way it **sells** is a sure indication of its worth.

Cultivators that have been marketed successfully year after year in ever increasing numbers **must** do good work, give lasting service and genuine value. This is a fundamental law of business.

International and P & O Cultivators

Years ago these names were introduced to the cultivator users of the world. They were good cultivators then. Since that time every possible improvement has been made. They stand today at the top of the list—light in draft and weight, easy for man or boy to handle, and with a well-earned reputation for lasting dependable service.

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INTERNATIONAL HARVESTER COMPANY
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M. A. C. Drainage Conference

MORE uniform practice in farm drainage operations in Michigan may be expected in the future as a result of ideas exchanged at the first annual drainage conference held at M. A. C. on March 17-18. Hitherto the state drain commission has attacked problems on a large scale, but farmers and small drainage contractors have had nothing to guide them except the notions developed in their own neighborhoods. From now on this latter class will be able to gain a broader view.

The chief speaker at the conference was S. H. McCrory, chief of the bureau of drainage investigations of the United States Department of Agriculture. His first address covered experiences he himself had in the drainage line while his second took up methods of drainage engineering.

Factors to be considered in designing a farm drainage system, said Mr. McCrory, are the size, spacing and depth of the tile, character of the soil, and rainfall in the particular section. It is possible to put tile too deep in some of our clay soils, he declared. About three feet is considered a proper depth to give rapid drainage to prevent destruction of the crop. Four rods is the average distance between tile on clay soil, though sometimes two rods is sufficient. There is need of more investigation in these matters, according to Mr. McCrory, who maintained that many tile might be saved in Michigan if more were known about requirements such as the relation to the water table and other considerations.

E. L. Hunter, secretary of the Michigan Association of County Drain Commissioners, outlined the steps necessary to obtain a county drain. At present much difficulty is experienced in arranging for inter-county drains. He

called attention to the bill now before the legislature to do away with the old cumbersome method, and provide for a state drainage engineer, with authority to act in inter-county situations.

Prof. H. H. Musselman, head of the M. A. C. Farm Mechanics Department, discussing the problem of what size of tile to use, declared that formulas are good, but engineers must use their judgment in application of the formula.

W. Van Haltsma, another member of the M. A. C. department, pointed out the advantage of tractor ditching over hand ditching. Use of the tractor means more speed, better results, and is especially valuable when hand labor is almost unavailable. It is necessary to have a man behind the machine, however, he said. The tractor must give way to hand labor on ground that is soft, stony, or obstructed with stumps.

One of the most significant addresses was given by Dr. M. M. McCool, professor of soils. The problem of the drainage engineer is to decide whether the undrained soil contains the proper elements to grow crops, said Dr. McCool. He urged that drainage engineers familiarize themselves with soils questions. There are five million acres of land in Michigan that can be drained, much of it very rich.

Howard Rather presented the viewpoint of the farm crops department, declaring that high-yielding grains cannot be expected to live up to their reputations if grown on poorly drained soil.

A school in leveling was held during the early part of the week, preceding the conference. One man who attended declared "nothing but a coffin could keep him home next year." It is planned to hold the drainage conference as a part of farmers' week next winter. H.

Potato Exchange A Pattern

The success of the Michigan Potato Growers' Exchange has attracted so much attention in other states that New York, North Dakota and Minnesota have requested the assistance of Hale Tennant, M. A. C. marketing specialist, in the organization of similar potato exchanges. The Extension Service News, published by the College of Agriculture at Cornell, has this to say in its February number:

"Stimulated probably by the activities in other lines, and by the organized potato growers in Michigan, the New York potato growers have practically decided to market their potatoes in two separate classes—certified seed potatoes and table potatoes—and set up marketing organizations to handle each line. This promises tremendous difficulties, but a good start has already been made in the organization of local associations and leaders in the movement expect that a state potato exchange, similar to the Michigan Potato Exchange, will be in operation in time for next fall's crop."

Activities of Mr. Tennant and other M. A. C. marketing specialists in the state during the last several years are now bearing fruit in the widespread cooperative movement which is sweeping Michigan. In fact, the Michigan Potato Growers' Exchange, in the formation of which Mr. Tennant played a leading part, is functioning so well that the college is no longer called upon to furnish even advisory support, and merely keeps in touch by sending representatives at regular intervals to the business meetings of the exchange board of directors. During the last year twenty-five additional locals were organized without the help of the college.

The Michigan Fruit Growers' Ex-

change and the Michigan Live Stock Shippers' Association, both of which came into being largely through the efforts of Mr. Tennant and other college extension workers, also are said to be approaching the point where they will need college assistance as little as the potato growers.

In addition the success of the Michigan State Farm Bureau's marketing activities may be traced to the college extension department. Four M. A. C. men, J. W. Nicolson, R. V. Tanner, Carl Barnum and John Hammes, have blazed the way in seed purchasing and distribution. R. A. Wiley, former county agent of Grand Traverse county, has likewise placed the elevator exchange on a firm basis. It was through the influence of M. A. C. leaders that Mr. Wiley was employed for the elevator organization work.

The "proof of the pudding" in cooperative marketing associations lies in their ability to run themselves after the college has completed its work of assistance in organizing, according to R. J. Baldwin, extension director at M. A. C. The function of the college is to show the way, but it is for the farmers themselves to carry on their own cooperative selling.

DISINFECT DAIRY BARN.

The spring renovation in the dairy barn should include a good spraying with disinfectant after the dust and cobwebs have been removed. As such things are present. Let as much sunshine in as possible as it helps to clean up the stanchions. Dark and damp corners are good disease-breeding places and where the sunshine cannot reach, the spray dope should be used most liberally.

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Fulwood's frost proof, will stand a temperature of fifteen degrees above zero. Plant now and have early cabbage. All leading varieties. Prices by express 1000 to 4000 at \$2.00 per 1000. 5000 and over at \$1.50 per 1000. By parcel post prepaid 100 for 50c; 500 for \$1.50; 1000 for \$2.50. Greater Baltimore Tomato plants same prices as cabbage. Satisfaction guaranteed, or money refunded. P. D. Fulwood, Dept. 1, Tifton, Ga.

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See Pyrox page ad in this paper April 9—By Insecticide Co.—Boston—Baltimore—Chicago.

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SMITH BANNER No. 22 COMPRESSED AIR SPRAYER

for all around farm or garden use.

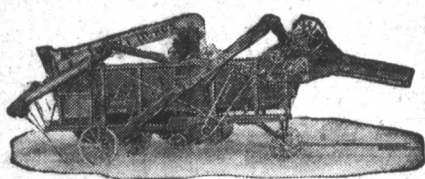
Sprays trees, shrubs, potatoes and field crops for insects and fungus; sprays stables, pig and poultry pens; barn yards for lice and vermin and for disinfecting. Used for whitewashing stables, poultry houses and fences and for washing windows, buggies, autos and for spraying cattle.

Built for work. Heavy brass or galvanized steel, well riveted tank—holds 4 gallons. Seamless brass pump—2 inches diameter; brass castings. **Automatic Brass Non-cloggable Nozzle**, throws long distance fine mist or coarse spray. Easily operated by man or boy.

Be sure and ask your dealer for it by name, if he can't supply you, write

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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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Threshes All Kinds of Grains and Seeds.
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Be Your Own Thresherman

THRESH when the grain is ready—when you are ready—when roads are good—when the market is most favorable to you.

Every farmer who has a tractor of 18 H. P. or over can insure himself against loss of much or all of his yearly harvest—from bad weather and inability to get a machine when his grain is ready—by owning one of these little threshers.

The saving on one crop may be enough to pay for the thresher, which, with proper care, will last nearly allifetime.

Made and guaranteed by a Company that has built grain threshers for 70 consecutive years. For threshing, separating, cleaning and saving the grain it cannot be excelled.

Write for complete description and specifications—sent free upon request.

Port Huron Engine and Thresher Co.,

Port Huron, Mich.

for fruits and vegetables
"even when there is no fungus"

Pyrox
TRADE MARK REGISTERED

See Pyrox page ad in this paper April 9—Bowker Insecticide Co.—Boston—Baltimore—Chicago



Save \$\$ This Year on TWINE

Guaranteed No. 1 Standard Binder Twine

Cash Price \$12.74 Time Price \$13.00
(Per 100 lbs. f.o.b. Jackson, Michigan)

\$10 per ton—50 cents per 100 pounds from above prices allowed on collective orders.

Hundreds of farmers were disappointed last year. Order your twine now while the limited supply lasts—prices will not be lower. A postal will bring the order blank.

GLENER CLEARING HOUSE ASSOCIATION
315 Commercial Bank Bldg., Grand Rapids, Michigan

ing statesmen and economists, is that an essential food supply is a world-wide basic necessity. That a reasonable surplus when not of a perishable nature should be maintained as a safeguard and is of national interest. This reasoning leads up to the prevention of this surplus being used to depress the price of a whole line of foodstuffs which cannot be well separated. For example, dairy products, meats, and grain crops are co-related and when one factor dislocates others, loss ensues. Hoover's ideas of ratios as corn to pork prices, is reasonable only when the starting point is one of correct relations.

Some approach to a remedy is to consider the United States as a nation with equitable relations between producers and its plane as a whole, apart from other countries of lower conceptions of individual welfare. This concretely stated would be met by a tariff schedule with maximum duty levied to equal the cost of production in the United States. For example, wool might be maintained at fifty cents per pound, sugar at nine cents, wheat at \$2.40 per bushel. These maintenance figures should be flexible and determined scientifically by some federal agency but the principle of cost on the American plane be basic. In other words, the tariff schedules should be based on scientifically determined bulk costs and flexible to meet essential changes.

My impression is that this written into the tariff law would advance almost immediately most prices (not all) to fifty points above pre-war.

There then remains twenty points to travel and here the remedy proposed is debatable—viz: to allocate several billion dollars of federal reserve funds on first-class paper to certain agricultural products. For example, cotton, wool, meats, sugar, grains, for a period of one year at a discriminating interest rate as compared to speculation or non-essential productions. The less danger in this program is the straining of relations by issuing of more money to the gold reserve and the greater danger in not doing it is unemployment and decreased production in all lines. The expected benefit that would come to the coordination of industrial planes would be the restoration of purchasing power by agriculture and this would extend along the whole line of industry and break the deadlock now existing. Springtime is the psychological time for action. The ethics of the intent to restore the level of the planes of industry is that it involves raising one and not pulling down another.

It is disheartening that a nation could successfully participate in a great war and coordinate every industry, yet in peace lack the initiative essential to prevent industrial paralysis, and unemployment and threaten a continued food supply. If wages are reduced, strikes may follow. Contention is promised in any plan proposed to reduce the money return. The actual losses entailed by closed factories and unemployment is greater than if the whole proposed federal reserve loan would be lost. The advice of bankers to liquidate by crowding farm products on the market was wise only from a narrow viewpoint—in fact, very unwise from the general standpoint of national safety. The enormous bond issuers of large industries with high interest can only pay those rates on an increased volume of business which means both increasing raw material and consuming power for their products. The increase of urban population is balancing consumption and production to a greater extent than ever before. There is little to commend the argument that we must find markets abroad which fails to see that underemployment and under-consumption at home is too large a price for the United States to pay for what does not exist. Europe is without volume of buying power because of exhausted credit. The difference in exchange is largely the measure of inability to buy. Any proposition that looks like guaranteeing Europe credit must prove an equal or greater strain than is occasioned by credit to producers in the United States to carry present crops and aid in the production of more. The German plan of paying their indemnities in case the allies would make them a loan, is not more preposterous than that of President Wilson's that unless we find a market abroad for agricultural products (and this means at a price below cost) we can never restore trade balances.

An agricultural commission charged with restoration of the price plane of agriculture with other industries is imperatively needed. One of the proofs of the proposed remedies is the paradox of stricken France and agriculturally prosperous France. A popular loan was made in France somewhat similar to our loan drives and 27,000,000,000 francs subscribed in December, 1920, or an average of seven hundred francs to every man, woman and child. The strange feature of this loan was that it came largely from the rural districts. The French minister of finance announcing this fact said, "I congratulate the people of the rural districts on their predominant share in this loan. They have proved by their deeds their determination to resist economically as brilliantly as the soldiers resisted in the war." Prices are high for agricultural products and maintained in that condition by financial and tariff preferences.

COLD STORAGE PLANT AT BENTON HARBOR.

THE fruit growers of Berrien county, especially those in the vicinity of Benton Harbor, will erect a cooperative cold storage plant this spring to care for the local fruit crops. A feature of the plant will be a precooling station. By use of this the company expects to ship berries in carload lots over a wide range of territory and thus do away with the annual glut of the Chicago market.

The proposition is backed by the St. Joseph Fruit Growers' Association, the farm bureau and many prominent growers. It will be officered and manned entirely by fruit growers and any profits will be equitably distributed among stockholders.

The necessity for the plant has been brought forcibly to the attention of fruit growers by the car shortage last year. The canners are now loaded up with last year's pack, so the growers will be able to save much small fruit this year through the aid of cold storage facilities that otherwise would go to waste for lack of a market.

The plant will be erected in time to handle this year's crops. Prospects for an immense fruit crop are very bright at this writing but market conditions are a cause of much concern.

L. B. R.

MORE INTEREST IN FARM BUILDING.

THE Michigan State Farm Forestry Department reports a revival of interest on the part of Michigan farmers in farm building and improvement. Farm bureau members are coming in with many inquiries as to building material prices.

The forestry department attributes this revival of interest to a decline, averaging forty per cent, in lumber prices during the past few months. The department does not predict an immediate return to 1917 prices on this commodity, due to a general curtailment of operations on the part of the large lumber interests.

BLIGHTED SEED POTATOES.

Is potato blight carried over from one year's crop to another in the seed? My potatoes, while a fair crop, were struck with blight rather late, making quite a lot of small potatoes. Can I safely use these potatoes for seed another year? G. E. G.

Scientists claim that the late blight of potatoes is carried through diseased seed. There is sufficient evidence along this line to warrant advising against the use of seed potatoes which show any indications of late blight.

In your inquiry you speak of the blight causing the potatoes to be small in size. You did not mention any decaying of the tubers. If you did not note any decay either at digging time or after they were stored, it is not likely that your potatoes were affected with the late blight as an attack of this disease almost invariably shows a decay of the tubers. In some cases only a few of the potatoes decay while in others practically all of them rot in the field. The disease is carried on the tubers through the winter in the form of dry rot. This can be seen by careful observation with a naked eye. The exterior portion of the potatoes usually shows shrunken areas. When these areas are cut into with a knife the flesh shows brownish discoloration below the surface of the skin. This may extend in for a quarter of an inch or in some cases considerably deeper.

When potatoes show such shrunken areas and are found among the seed stock in any considerable quantity it would be advisable not to use these potatoes for seed. In all probability the trouble which you called blight on your potatoes last season was what is generally known as leaf hopper injury. This trouble causes the margins and tips of the leaves to turn brown and when a considerable portion of the leaves are so destroyed the crop is reduced in quantity and the tubers decrease in size. This trouble will not seriously affect the seed stock although I would much prefer to use seed from plants which have grown vigorously until killed by frosts. In view of the fact that indications point to cheap seed this coming year, I would suggest that you secure at least a few bushels of seed stock from some other source in order that you may compare it with your own and determine which is the most desirable seed.

C. W. WAID.

HOG PASTURE.

I have a piece of ground, about two acres, that is a little wet in the spring but it dries up later on. I want to sow it to some kind of hog pasture. What would you advise? C. J. S.

The accumulative experience of all hog men is that there is nothing better for hog pasture than Dwarf Essex rape. Of course, no crop will grow well on land too wet, but if this field dries up later in the season and does not overflow, it will do just as soon as it is dry enough to work, to sow about six pounds of Dwarf Essex rape to the acre and do not cover it too deep. When it is eight to ten inches high you can turn the pigs in.—C. C. L.



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There's always more fun with a Kodak along. It adds to the joy of every motor trip and keeps for your Kodak album the story of every merry outing.

Picture taking by the Kodak system is very simple now-a-days and less expensive than you think.

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Are you going to Re-roof or Build? If so, you should use our peerless Inlaid Diamond Roofing applied over boards or shingles, laid lengthwise or updown. Made on an extra heavy woolfelt foundation, high-proof asphalt saturation and double coating, unfading crushed rock surfacing, with an unstoned leakproof lap—this Roofing, for permanence, durability and modern design stands supreme. Without a Rival. Fully guaranteed. Inlaid Diamond Roofing Red and Green 32 in. wide in rolls of 108 sq. feet, weight 90 lbs. \$5.00. Plain Red or Green in rolls of 108 sq. feet, weight 80 lbs. \$3.85 including nails and cement, all F. O. B. Detroit. Write for illustrated catalog.

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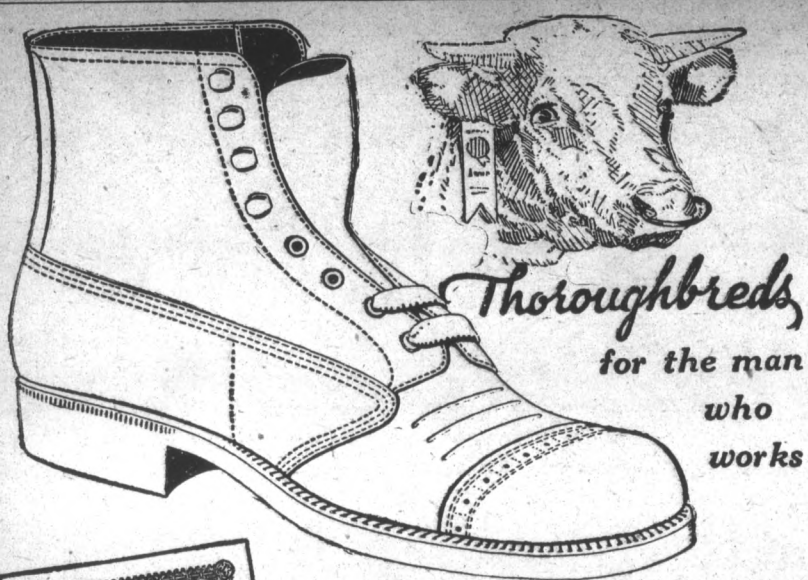


Will pay big money to men with autos. Install Rideegee, the BETTER THAN AIR INNER TIRE. Cheaper than tubes, a light resilient substance guaranteed ten years. Equip your car at agent's price. Sell to friends. The business of the future. RIDEEGEE CO., ST. PAUL, MINN.

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What kind of an Advertisement would you write for such a Shoe?

Try your hand at it. We are going to give \$300.00 in prizes for best answers to this question. First prize \$100.00. Second prize \$25.00. Third prize \$10.00. Next thirty-three prizes, \$5.00 pair of Hirth-Krause More Mileage Shoes.

This contest is open to everybody. All replies must be in not later than midnight April 15.

To help you we have prepared a circular on the contest, giving all the particulars. Write for this free descriptive circular. It will help you win a prize. Write for it today.

HIRTH-KRAUSE

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Bee Hives, Section Boxes

Smokers, Comb Foundation, Etc. Everything for the bees, including Beginner's Outfits. General agents in Michigan for The A. I. Root Co. supplies. Send for catalog. Special booklet for beginners if requested.

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Choice Farm Lands

I have the best proposition on earth for the man who is tired of being a renter, of working for others or who desires a larger farm than he now owns.

I own lands in the famous clover seed belt near Onaway, choice heavy clay loam soil underlaid with limestone at \$10 to \$30 per acre.

The lands were beech and maple lands from which all of the timber has been removed.

A reasonable cash payment is required after which the clover and alfalfa seed will take care of your future payments.

While getting started and your home built I will, if necessary, stand behind you.

This is one of the chances of a life time if you like farming and are a worker.

Raising for a farm in Clover Seed Belt where Seed Crops average \$100.00 per acre, entails no hardship for the dairyman or stockman—as the hay and chaff crops more than pay the expense, leaving the seed Crops as the mortgage lifter.

Write today for full particulars and booklet.

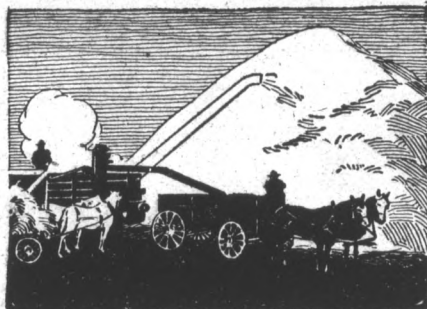
THAD. B. PRESTON
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400 Acres \$4500 with Horses, 13 Cows and

Heifers, bull, machinery, cream separator, equipment; near E. R. town, conveniences; machine-worked fields; 60-cow pasture; 1,800 cords pulp, 2,000 cords wood; good variety fruit; 400 sugar maples; good 10-room house, 70-ft. barn silo, tenant house, horse barn. Owner retiring, easy terms. Details page 16 Spring Catalog 1100 Bargains. STROUT AGENCY, 814 BC Ford Bldg., Detroit, Mich.

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Farms 5 acres and up, \$75 to \$125 per acre. 206 Acres on improved road with stock, crops, tools, grain, only \$23,000. Terms. Good buildings, 8 Good cattle, four extra good horses, all harness, etc. 18 Acres wheat, 60 acres hay, all fruit, 25,000 feet of tile. Three-fourths mile from railroad station. THE CODDING-BAGLEY-CASE CO., Medina, Ohio



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It costs you good money to raise your grain. You can't afford to take chances on having it wasted in threshing. You needn't worry about waste if your threshing is done with a

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It beats out the grain. Its Big Cylinder with the "Man Behind the Gun," its beating shakers, its smooth operation throughout—each means grain saved and money in your pocket.

Ask the Red River Special owner in your neighborhood to do your threshing. Better speak early because he always has a long run—everybody wants him.

If interested in a threshing for your own use, ask about our "Junior" Red River Special.

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Builders exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines.
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CUT-OVER Clay loam land in Presque Isle County's Clover Seed Belt. Ten per cent cash, balance payable with yearly clover seed crops. The cash payment loaned to settler for live stock on long time, 6 per cent.
John G. Krauth, Millersburg, Mich.

Additional Farm Ads. on Page 457

Upper Peninsula News

By L. A. Chase

FOR some years the Duluth, South Shore & Atlantic Railroad has regularly maintained a department for the improvement of agriculture along its line. The department is in charge of Mr. J. A. Jeffery, formerly Professor of Soils at the Michigan Agricultural College. I have just received from Mr. Jeffery a statement of the shipments of farm products from certain points on the line, which may be interesting as indicative of the trend of agriculture in this territory. It should be understood that this railroad is the premier line of the upper peninsula, traversing the whole district from east to west. That portion of its territory which lies in southern Houghton and Ontonagon counties is a developing dairy section, as is indicated by the shipments of cream from various stations there on the railroad. Thus last year, Bruce's Crossing shipped 25 tons; Covington, 48 tons; Pelkie, 59 tons; Herman, 5.6 tons. These are all small way-points with very small population. The hay-producing territory is more extended, as appears from the following record of hay shipments: Bruce's Crossing, 11 cars; Chassell, 71; McMillan, 2; Ewen, 145; Moran, 15; Paynesville, 52; Sault Ste. Marie, 682 cars. There is a variety of other shipments of farm products on the list, comprising 23 carloads of potatoes; one carload of wheat; four of straw; three of oats; 8.25 of peas; 19 of cabbage; one of hogs; 28 of cattle; five of sheep, and 300 carloads unclassified. This is not a complete statement of all shipments outbound on this line, but it illustrates the trend. Equally interesting is the report of shipments of farm products into certain points on the "South Shore" line, illustrating in what respects there is a local shortage of products of the farm. Marquette received shipments of 160 carloads of hay; Negaunee, 180; Ishpeming, 123; Calumet, 3; Houghton, 42; Hancock, 14; Baraga, 22; Newberry, 4 cars of hay, while of oats, Marquette imported 57 cars; Negaunee, 21; Ishpeming, 34; Calumet, 23; Houghton, 103; Hancock, 82; Newberry, 2. It is notable that Calumet imported 17 cars of cabbage while Marquette imported 155 cars of mixed vegetables, and Houghton 52 cars. Of apples, Marquette shipped in on this line 35 cars; Negaunee, 6; Ishpeming, 24; Calumet, 24; Houghton, 56; Hancock, 25. This illustrates what was said in these columns, last fall, regarding the apple market afforded by upper peninsula cities. Although some excellent meat is locally produced, the local supply is far from adequate, as is shown by the figures of rail shipments. Marquette shipped in by the "South Shore" 222 carloads of meat; Ishpeming, 234; Houghton, 244; Hancock, 2. Calumet imported nine carloads of oranges and 12 cars of grapes. Of mixed fruits and vegetables, Ishpeming brought in by this line 38 cars; Calumet, 112; Houghton, 102; Hancock, 54. Of flour and feed, Baraga received 23 cars; Brimley, 10; Bruce's Crossing, 3; McMillan, 4; Moran, 16. It is to be understood that the larger points mentioned have other important rail connections besides the "South Shore," so that the aggregate shipments would appear considerably larger in all likelihood.

Supervisors and Crop Statistics.

The upper peninsula has a peculiar interest in the bill now before the legislature requiring supervisors, when they make their annual assessments, to collect statistics relative to farm products. This section is less well supplied with crop reporters than the southern counties of the state, and in consequence it is less easy to check up on crop conditions and rural development here. Two of our counties are wholly without such correspondents and others are inadequately covered. In a newly developing country, like this, crop returns normally range high per acre, and so there is good reason for wishing a complete reporting service to all who are interested in the agricultural growth of north Michigan. Some of our supervisors may not be keen for this additional labor, but they should be made to understand its utility to Cloverland.

Program for Marquette County.

The Michigan Potato Growers' Exchange purposes a more active publicity campaign in the upper peninsula and desires greatly to extend the subscription list of its publications. In this work it has the hearty support of the Upper Peninsula Development Bureau. Potatoes are our chief export farm crop and the exchange will doubtless receive hearty local cooperation.

In his annual report, recently received, Agricultural Agent L. R. Walker, of Marquette county, recommends as a part of the 1921 program for the farmers of his county, the continuation of standardization and the use of pure, clean seed; the development of a market for seed potatoes, the growing of more barley, clover, more sunflowers and silos. He wishes club-work to be undertaken along the lines of potatoes, live stock and handicrafts where it is not already in operation. He further recommends greater attention to soil improvement, fruit culture and cooperation with other agencies of development. He recommends that the county employ a home demonstration agent and a junior club leader.

Higher Temperatures.

Observer Patrick, of the United States Weather Bureau's Marquette office, has just compiled the figures relating to temperature and precipitation for the present winter. They are of interest as indicating winter conditions along the Lake Superior shore, which is not as bleak and inhospitable as some people imagine it to be. The average temperature for December was 27; for January, 23.4, and for February, 23.5 degrees, which was for the three months 6.4 degrees above the normal. The December precipitation was 2.27 inches; January, 2.28 inches; February, 1.29 inches, which was 41-100 of an inch less than the normal. As a matter of fact, our usual greater depth of snow in the Lake Superior country is not due to greater precipitation than in the southern counties of the lower peninsula but, because of normal lower temperatures, we usually keep all we get throughout the winter; but it has not been so this winter.

Extensive Campaign.

Assistant State Leader of County Agents J. W. Weston, is arranging for farmers' institutes in Marquette county in April, in which extension workers in the upper peninsula and members of the staff of the Michigan Agricultural College will participate. Mr. A. G. Kettonen, assistant state club leader, is planning his work for the season now approaching, which will emphasize calf and potato clubs. Miss Aurelia Potts, assistant state leader of home demonstration agents, intends to put on a "milk fairy" demonstration with the assistance of students at the Northern State Normal School. Studies undertaken with pupils at the normal training school have shown the great value of a milk diet to growing children. Weekly weighings of children are held and these show exceptional increases in weight unless sickness has intervened. It is hoped to spread the gospel of one quart of milk per day per child.

Dairy Notes

IT is much easier to manage calves if each one has a halter. They are most easily halter-broke at an early age and this saves pulling contests later in life when the animals are very strong. Pulling a calf around by the ears is a hard job and apt to develop an unruly stubborn nature in the calf.

The salt block is a sure method of providing a steady salt supply for the cows. Place a block in a box in the barnyard and the cows will enjoy licking the block a few moments each day. A steady supply of salt is better than a large supply at irregular intervals, followed by a long period without salt. These salt blocks last a long time and do not easily crumble up into fine bits that might be eaten by poultry.

On cold and wet spring nights the young cattle need shelter nearly as much as in the winter. If they do not have a dry resting place the exposure may devitalize them and make certain individuals more susceptible to tuberculosis. The health and steady growth of the young heifers has a great influence on future dairy profits and such animals need the best of care.

The best guarantee that a cow will prove all right is to buy her of an honest farmer or dealer. If you buy a cow that is due to freshen at a certain date and she never freshens, the honest seller will be anxious to make it right, if possible. If the honest seller tells you that a cow is a profitable milker you will not be able to see the bottom of the pail after milking that cow. Of course, the buyer must use some judgment but it is true that many experienced farmers are fooled when buying cows. They can take some of the risk out of such deals by purchasing cows of honest dealers. When you have good luck in buying a cow do not fail to give the seller credit. In this way the honest cow dealers are encouraged and the others soon lose a lot of business.

The farmer who raises an occasional heifer for his herd often finds that he obtains better cows than he can buy for prices he can afford to pay. Good cows are not high in price now, but when you start out to buy them you may find that most of the cows for sale are not as good as you would like to buy. When you raise a heifer from a good cow and a pure-bred bull, there is always a chance that you will obtain for the cost of production a cow that you cannot easily duplicate for that amount of money.

Unexpected casualties often take the heart out of the dairy farmer. Many cows have died from eating staples, pieces of fence wire and other foreign materials. Be careful about making repairs around the barn and keep the barn and pasture as free from junk as possible. One farmer recently lost a good cow because she licked up nitrate of soda which was placed in a heap in a shed to use as fertilizer.

Cows do not seem to have their instincts of preservation sufficiently developed to protect them from eating foreign materials in their fodder. The wild cattle of the plains did not find bits of barbed wire in the clover. They found no pails of spray dope in their pasture. Cows now live under more or less domestic and artificial conditions and their owner must do much thinking for them. A cow is a very friendly and docile creature but no one can accuse her of being overdeveloped mentally.

A box stall is a great help in managing a cow at freshening time. If it is well bedded the calf will find a warm clean nest soon after it is born. The cow will have plenty of room and it will be easy to take care of her and the calf. When cows freshen in the woods or pasture it may take time to find the calf and the cow will not be under observation if anything should (Continued on page 456).

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Canning Crop Data

LOOKING to the placing of contracts with canning factories in 1921, the Orleans County Canning Crops Growers' Association, with the aid of the New York State College of Agriculture, has obtained data on expenses incident to growing both peas and tomatoes on a commercial basis, from which exact costs have been figured. It is explained that the farmer has been too long selling his crops at prices which have little relation to production costs. Unlike the majority of business men, he has had no cost system. The studies now completed are to help meet the needs in the case of the two crops mentioned.

All items entering into the cost of production, like seeds, plants, fertilizers, lime, man labor, horse labor, use of machinery, interest charges and use of land, have been figured down to a cost unit which has been applied in arriving at the cost of the crops in question. The summary of the cost of growing one acre of peas is based on cost figures secured from taking data on seventy-six Orleans county farms, based on 377 acres, which yielded 1,970 pounds per acre.

Figures Apply to Peas.

Here are some of the cost items applying to the pea crop with the figures applying to an acre as the unit: Seed, four bushels, \$16; fertilizer, 245 pounds, \$4.05; manure, 2.4 tons, \$5.11; man power up to time of harvesting, 17.2 hours, \$7.98; horse power up to time of harvesting, 37.8 hours, \$9.25; use of machinery, 37.8 hours, \$3.10; use of land, one acre, \$9.14; labor harvesting, man power, 22.7 hours, \$9.39; horse power, 25.3 hours, \$6.20; use of machinery, 25.3 hours, \$2.08, together with a few small items brings the total for raising and harvesting up to \$74.41. The value of the ensilage is set at \$4.77, making the net cost of one acre of peas as \$69.64, for which the farmer received on an average \$78.82.

It is apparent that the cost per ton will vary according to the yield, and that the cost is relatively lower the larger the yield and apparently higher the lighter the yield. However, the studies were made on a large number of farms, so that an approximate average of the entire crop was obtained so far as costs were concerned. The average price a ton received by growers at the canning factories was \$79.27. At this figure the net to the grower was \$7.18, not taking into consideration the ensilage, and when it is taken into consideration that the average yield is not far from a ton to the acre, it is plain that under such conditions as obtained last season growing of peas for canning factories is not a gold mine, it is pointed out.

Unusual Year for Tomatoes.

Similar studies were made in the tomato survey. Forty-nine farms were under survey in collecting the data. On twelve farms records of the labor required and quantity of materials used in producing the crop were kept by the farmers. On the remaining farms estimates were made by the farmers of the time required to perform the various operations and the quantities of materials used. In all about 219 acres were checked, with an average yield of 9.59 tons per acre. The various items, including fertilizer, plants, manure, both man and horse labor, use of land and other incidental expenses up to the time of harvesting totaled \$102.72. The cost of harvesting, including haulage, brought the total cost an acre up to an average of \$164.38.

Figures on the returns to the grower indicate that the average yield last year was 9.59 tons an acre. The contract price in most cases was \$22 a ton, delivered at the cannery, bringing the grower an average of \$210.38 an acre. The net return was about \$46 (Continued on page 453).



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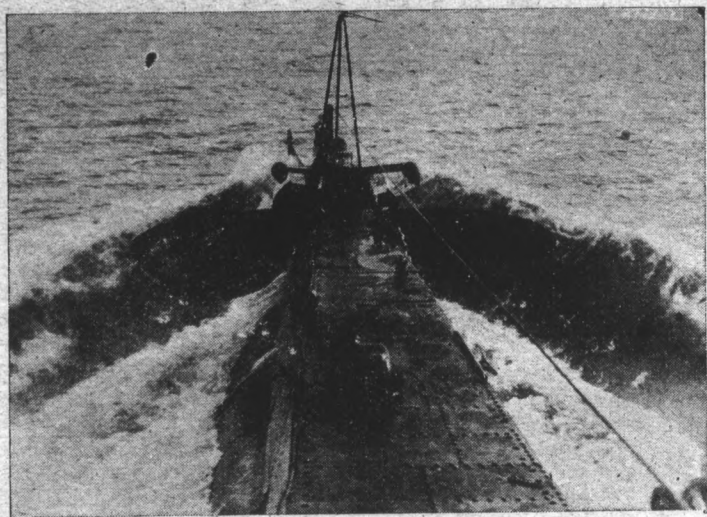
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WORLD EVENTS IN PICTURES



Bow planes open out on each side of this latest style submarine of the U. S. Navy and aid the vessel in making a quick dive. The planes are folded back along the sides when the craft is proceeding on the surface.



A few of the well-known members of the Detroit base ball team photographed at their training camp in San Antonio, Texas.



Colonel Theodore Roosevelt, Jr., eldest son of the late ex-president, becomes assistant secretary of the navy.



Dr. Lee manufactures synthetic milk from peanuts and oats.



This stowaway lad, being ineligible to enter the United States, is chained to rail of ship while in New York port.



The recent earthquake at Elbassan, Albania, caused two hundred deaths, wrecked two thousand homes and rendered 18,000 persons homeless.



Francisco Villa, former Mexican revolutionary chief, with his two children, Micaela, an accomplished pianist, and Augustin, a daring horseman.



Group of school girls at Tarrytown, N. Y., playing "cage ball," which is a modified form of "push ball."

THE CLAN CALL

By HAPSBURG LIEBE Copyright 1920, Doubleday, Page & Co.

"There's nothing I'm ashamed of, I guess," he said. "I don't like to tell it simply because I don't like to tell it. But—I'll do it."

He sat down in his sheepskin-lined rocker, lay back and closed his eyes as though to visualize the story, to live it over.

"Maybe it's not very much in my favor, John Moreland," he began. "I never could get along with my parents, or with the set I was born into. Somehow, I was different. I liked the out-of-doors. I didn't like dances and parties and such things. I didn't have any brothers and sisters, and perhaps I was spoiled. Father and mother wanted me to be a dandy; they even wanted me to let a servant dress me. The climax came when they tried to marry me to a young woman who didn't want me any more than I wanted her."

He opened his eyes, looked straight at Moreland, and went on:

"You see, they wanted to marry us in order to unite old Clavering's fortune and my dad's; Patricia, too, was an only child. It had been all cut and dried for us, for years. You may think it was weakness on our part to agree against our wills to do it, but it wasn't—not wholly, anyway. They put it up to me like this: they said I owed it to them, that it was my duty; that I had always been a severe trial to them; that my savagery had put grey into my mother's hair, and a lot of things of that kind. I fell for it at last; it was sort of a matter of self-defence. With Patricia, it was a case of—well, a case of simple obedience. Pat is a good girl."

"I'll hurry along with it, John Moreland. I had one fine friend back there. It was Robert McLaurin, a reporter on the city's leading newspaper. My parents didn't take to him because he was a worker, and not a fop. Mother wanted Pat's cousin, 'poor dear Harry' Clavering, for my best man. 'Poor dear Harry' and I had had a fight, once upon a time, and I—I had whipped him; and I didn't like him. I chose Bobby McLaurin for my best man, and I wouldn't give him up."

"It was only when we met before the chancel in a big crowded church that I fully realized the tragedy of it for Pat. I saw that her face was a clean white, and that her eyes held the shadow of something that was very terrible. I turned my head and saw the same shadow in the eyes of my greatest friend, Bobby McLaurin. I knew then Bobby and Patricia loved each other, John Moreland! Bobby didn't have any money to speak of, and that had held them apart."

"It had been the finest thing in the world, McLaurin's acting as best man for me. There was friendship for you. I couldn't take from them their one chance of happiness."

"I couldn't see anything else to do, so I ran. I went home, pulled off my wedding rig and put on the clothes I'm wearing now, threw some things into a bag and hurried down to the union station. I found that I could have my choice between a flier for Atlanta and the—the train that brought me here. I bought passage to Atlanta, but I never meant to use it; I meant to take the other train and pay a cash fare. In doing that, I hoped to lose myself from them. I wanted to go unhindered to some country where I wouldn't be considered a—savage, y'know."

"I went out to the train-shed, and I hadn't been there a minute when Bobby McLaurin came. I asked him how he knew where to find me. He said: 'I thought you wouldn't care to stay here after what you did, and I wanted to say good-bye, Bill.' He always called me that, and it made me feel like a man. Then I put my bag down and took him by both shoulders and told him this:

"Look here, Bobby, I'm going to give you some advice, and you take it. You steal Pat and marry her. Steal Pat and marry her if you have to live in a hole in a hillside. You're as good as any of them, and lots better than most of them. You can work your way to a better job and better salary. You see, I told him, 'we get about what we deserve in this world. Most of us don't deserve much.'"

"I asked him if mother was badly cut up. He said she was; that she had fainted. Dad swore aloud, he said, there in church. I told Bobby good-bye and got aboard the train without saying anything about where I was going—but I didn't know myself where I was going, at the time."

"Now you've heard it. Every word was truth. If you'll trust me with the coal, I'll make this land my land, your people my people. I'll suffer with you when you suffer, and be happy with you when you're happy; and when you fight, I'll fight with you."

The Moreland chief arose, and Bill Dale arose. The hillman put out his hand, and Dale gripped it."

"I believe in ye, Bill," said John Moreland. "Fo' another thing, I've seed ye fight. You can work the coal."

He looked toward the closed inner door and called, "Oh, Addie; you and the boys can come back now."

Out of the night a face appeared at

one of the small windows. It was a feminine face, and handsome rather than pretty. Two slender, sunburned hands gripped the window-ledge nervously. The face pressed closer to the glass, then disappeared. Soon afterward the outer door of the guest's room opened, and Ben Littleford's daughter entered. Her skirts were dripping wet.

Mrs. Moreland arose and went toward the young woman. She knew that only something of great importance could bring a Littleford into her home in this fashion.

"What's the matter, Babe?"

Babe Littleford gave no attention to Mrs. Moreland. She went on to Bill Dale, walking softly on bare feet. She look down, colored a little, looked up and spoke:

"Black Adam is a-goin' to kill you tonight, Bill Dale."

"That so?" Bill's smile was rather grim. "How did you find that out, Miss Littleford?"

"I found it out, all right. As he went off from the river this mornin', I made fun of him; and he patted the stock of his rifle and said he'd git you through a window! He was at our house this evenin' to help fix pap's gun, and when he left he started this way, a-goin' by the blowed-down sycamore. I waded the river at Blue Cat Shoals to beat him here. I thought you might want to know it, so's ye could mebbe save other folks the trouble o' makin' a funeral fo' ye."

She backed toward the door, her eyes never leaving Dale's face. Another second, and she was gone.

They were all on their feet now. John Moreland gripped Dale's arm.

"Over thar aside o' the chimbley, Bill!" he ordered, his native drawl for the moment absent. "Out, Addie, honey! Luke, bring my rifle and hat—jump keen! Cale, bring water and drown this here fire!"

It was done. Moreland took his hat and the repeater and went alone into the night.

When some fifteen minutes had passed, there came to Dale's ears the sound of shooting. There were ten shots in such rapid succession that they made almost a continuous roar. Then came echoes and reverberations, and then silence. Soon John Moreland let himself into the dark room.

His wife's voice was low and filled with anxiety:

"What happened, John?"

A dull thud came through the darkness as her husband's rifle-butt struck the floor.

"This is what happened, Addie:

"As I passed the cawner o' the house, I got down that thar old oxwhip to take along. I went across the road and into the meadow, and thar I seen Adam Ball a-comin'. I hid, and when Adam was about to pass me, I jumped up and jerked his rifle from him and busted it ag'in a rock. Then I lights in and thrashes him with the oxwhip ontel he broke and run. And 'en this here happened, Addie:

"I was a-watchin' to see ef Adam had reely went off, when I seed a man a-comin' towards me fast. I thought it was Ball, o' course. So I up and tells him to show me how fast he can run and commences a-shootin' over his head to skeer him. But it didn't happen to be Adam Ball—it was Ben Littleford. He was a-follerin' Babe to see what she was up to, o' course."

"How do ye know it was Ben, pap?" Caleb asked.

"How do I know?" growled John Moreland. "When I got through a-shootin', he hollers at me and says: 'Tomorrow, John Moreland,' he says, 'we'll have a little Gettysburg o' our own!' And I might mind ye, Cale, 'at he keeps his word the same as I do.'"

"And Littleford meant, a—"

Dale.

"That the'll be a big fight tomorrow," said Moreland. "Bill Dale, in a-makin' this land yore land and these people yore people, I'm a-feard ye're a-goin' to git more'n ye expected, mebbe more'n ye can handle. Do ye want to back out of it and let the coal go, or are ye one o' these fellers who chaws what they bites off ef it's a hoss's head?"

"I'll stick," Dale's voice came firmly in the darkness. "I'll stick."

CHAPTER V.

The Mystery of the Rifles.

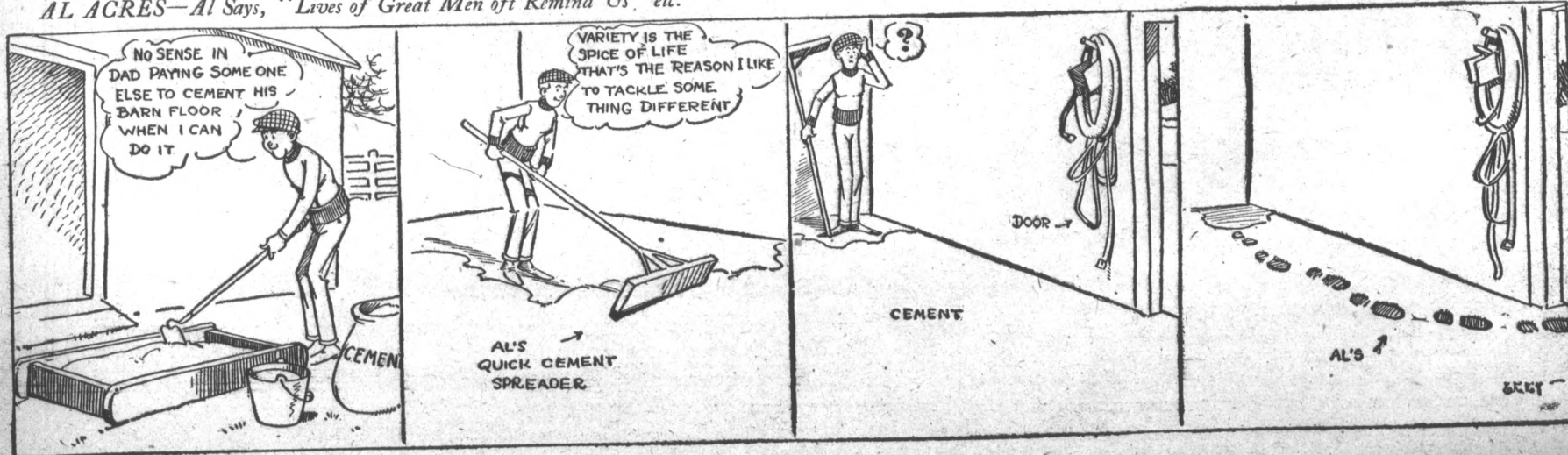
AN hour after John Moreland had sent his ten rifle bullets whining over the head of Ben Littleford, every Moreland and every Littleford in the valley knew of the declaration of war. And each man of them oiled his weapons and put them in better working order.

When Dale went to bed, there was too much on his mind to render sleeping easy for him. Tomorrow he would have to help in the fight against the Littlefords, kinsmen of the young woman who had saved him, without doubt, from the murderous rifle of the mountaineer Goliath—or break his word flatly. It was a poor return for such a favor! The longer he thought over the dilemma, the more perplexed he became.

He thought, too, of the everlasting

—By Frank R. Leet

AL ACRES—Al Says, "Lives of Great Men oft Remind Us," etc.



wonder, the tail of John Moreland's bedtime prayer. How a man could go down on his knees and ask the blessings of the Almighty upon men whom he meant to fight the next day was a thing that Bill Dale could not understand.

It was after midnight before he slept. He woke at the break of day, arose and dressed himself, and went out. Going toward the flower-filled front yard, he found himself facing a very angry John Moreland.

"What's the matter?" he asked.

"Matter enough," clipped the mountaineer. "Bill Dale, I'm a-goin' to ax you a question, and I want the truth. Will I git it?"

"You'll get the truth if you get anything. Shoot the question."

"All right. What do you know about my gun?"

"About as much as you know of the left hind wheel of Ben Hur's chariot. What's wrong with it?"

Moreland's eyes were steady and cold. He thrust his hands into the pockets of his corduroy trousers. Then his face softened a trifle.

"I reckon I ought to ax yore pardon," he said in a low voice. "Ye see my gun's plumb gone!"

"You had it only last night," Dale said. "Did it disappear?"

"Whilst I slept," cut in the hillman. "Both o' my guns is gone. And Luke's repeater is gone, and so is Cale's, and we hain't got nothin' at all to fight them Littleford's with!"

"Gone!" Dale exclaimed wondering-ly and—it seem to him—asininely.

"It must ha' been the Littlefords, I guess," frowned Moreland. "Fo' who else would ha' done it? But to save the life o' me I can't see how they got in and took my rifle without wakin' me up, Bill Dale. I slept twicet as light as a sick mouse."

Within ten more minutes, every man of the Morelands was gathered there at the house of their chief—and every man of them had lost their weapons during the night!

John Moreland called Dale aside and said to him:

"You're high on the good side o' them thar triffin' Hecks, and, so fer as they know, you ain't int'rested in the feud. I wisht you'd go down thar and see By and his mother, and see ef ye can find out whar our rifles went."

When Dale had gone off down the dusty oxwagon road, Caleb Moreland climbed a tall ash that grew behind his father's cabin and kept a watch toward the Littleford side of the river. He saw a group of men standing in Ben Littleford's cabin yard, and nothing else.

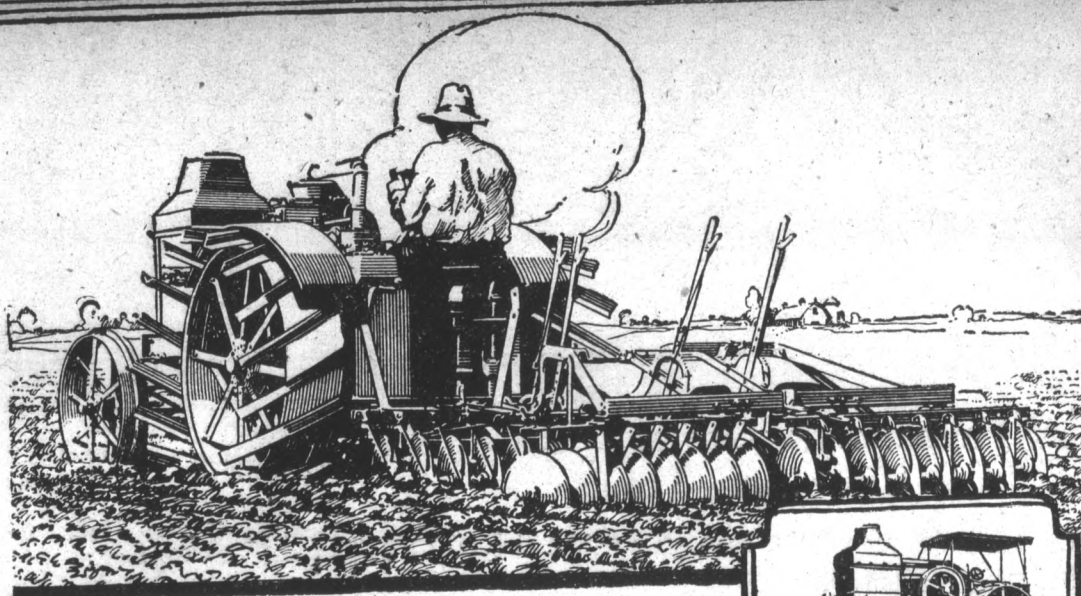
A little more than a quarter of an hour after Dale left John Moreland, he entered by the gateless gateway at the cabin of the Hecks. It was a dilapidated place, and it stood not far from the river. By sat in the front doorway; he was lazily cutting a new mid-day sunmark in the place of the worn old one. Behind him sat his mother, who was busily knitting a grey yarn stocking.

The moonshiner looked up and started quickly to his feet.

"Hi, thar, Bill, old-boy!" he greeted cordially. "My gosh, but ye've come at the right time, shore. We're a-goin' to have young squirrels fo' dinner, and a biled hamshank with string beans, and cawnbread made with the yaller o' hen aigs. Live whilst ye do live, says I. Come right in, Bill, old boy."

"La, la, la!" cried Granny Heck, looking over the brass rims of her spectacles. "How glad I am to see ye, Mr. Bill! Come right in and tell us the news."

Bill Dale crossed the threshold and accepted a creaking chair. His eyes took in at a sweeping glance the home-made dining-table with its cover of red oilcloth, the broken cast-iron stove the strings of dried peppers hanging on the log walls.



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"The Littlefords," said Dale, "have jest come off down here to be whar declared war."

"Sakes!" laughed the old woman. "at pap and the rest of 'em's a-makin'!" "We knowed that last night when we Dale narrowed his eyes. "Are they heerd them ten shots." —er, making a noise? And what about?"

"And all the Moreland rifles are missin'." Dale watched the effect of his words.

"What!" the Hecks cried in one voice.

Their surprise seemed genuine. Dale pressed the subject further and learned only that if they knew anything concerning the disappearance of the rifles they were not going to tell. Then he promised to have dinner with them at some other time, and started homeward by way of the pool above the blown-down sycamore.

There was a chance that Ben Littleford's daughter would be there fishing. Dale told himself, and it was barely possible that she could throw some light on the mystery of the rifles.

He crossed the river by means of the prostrate tree. Babe was there; she sat on the stone on which she had been sitting the morning before; her back was to him, and her bare feet were in the water to her ankles. Dale went up close, stopped and gathered a handful of violets and dropped them over her shoulder and into her lap.

Babe looked around and smiled. "What luck, Miss Littleford?"

"Nothin'. I don't much want to ketch anything," she said slowly, a spirit of sadness in her musical voice. "I—I

jest come off down here to be whar it's quiet. You ought to hear the noise at pap and the rest of 'em's a-makin'!" Dale narrowed his eyes. "Are they —er, making a noise? And what about?"

"My goodness gracious alive! You'd think so, ef ye could hear 'em. Y'ought to hear pap cuss John Moreland!" She shrugged her pretty shoulders, lifted the small end of her rod to its proper place, and went on, "I never did see pap as mad as he was when he got home last night from a-follerin' me."

"Mad at you?" asked Dale. "No; but he would ha' been ef he hadn't ha' had all his madness turned ag'in them Morelands. You knowed about pap's trouble on yan side o' the river last night?"

"Yes, I knew about that," Dale answered slowly. "But John Moreland thought your father was my antagonist of yesterday."

"An—antagonist?" Babe muttered inquiringly. "What's that?"

"I mean Adam Ball, y'know."

"Oh. That's what I told pap. But pap he wouldn't believe it, and he won't never believe it—'cause he don't want to believe it. I told him 'at John Moreland wasn't a-shootin' to hit, and he wouldn't believe that, neither. Pap's as hard-headed as a brindle cow, when he gits a fool notion on him."

What—what did them Morelands say about their guns a-bein' gone?" (Continued next week).

Moving Out of Podunk

Our Weekly Sermon—By N. A. McCune

S AID a bishop recently, "If a man isn't a world Christian, he isn't a Christian at all," meaning that if one does not have a world-wide vision of Christianity, he has a very small conception of it. The man who imagines that God is particularly interested in his nation, to the exclusion of others, has yet much to learn. Last week, there was held in our town the annual state convention of student volunteers. This consists of students in the universities and colleges who have signed a pledge to the effect, that, if the way opens, they will go to some foreign land as missionaries. Some will go as general missionaries, some as expert agriculturists, others as physicians, others as nurses, many as teachers, and a few as engineers. When one attends such a gathering as this, he is impressed with the fact that there are some American students who take life seriously. They apprehend that they have but one life to live, and they are intent on investing it to advantage.

The reports of missionaries who have been abroad during the war, reveal how desperate is the need of consecrated brains in foreign lands. Doctor C. G. Haas, who has been in Turkey all through the war, told the students what the situation is, in that land of ignorance and hate. He said that as Turkish politicians played billiards, they talked over the most fiendish methods of killing off the Armenians. The prize went to the governor of the province in which Doctor Haas lived. This governor's scheme was to drag the Armenians out of their beds at three in the morning, and start them down the road, leaving all goods and money behind. As they left the gates of the city, they were held up by Turk soldiers, who nailed horseshoes to their bare feet. Then they were driven on. This method of torment was highly applauded by the Turks as being original and clever.

And yet this American surgeon showed what a missionary can get, even on Turkish affections. The wife of this governor was dying. The American operated, against the protests of the native doctors, and she recovered. From that hour there was nothing that the Turk governor would not do for the American—except stop murdering Armenians. One day British soldiers who had been captured by the Turks, were brought in. Many were sick, some were dying of typhus. In caring for the typhus patients, Doctor Haas, his assistant and nurses, were all stricken. For days they lay between life and death. Ice was necessary, but there was none. Forthwith the Turk governor ordered that an old ice factory in a distant city should begin to manufacture ice. He said if the ice could not be made, he would do something else. It was but a few miles to the foot of the Taurus mountains, whose summit is covered with snow. Rather than see the Americans die for want of ice, the Turk said he would place a line of soldiers from Adana to the summit of the mountain, and have snow passed from man to man, so that there might be plenty for the sick. They recovered.

ONE hundred years ago, a colored man, Stewart by name, thought he heard voices calling him to go in a northwest direction, and preach. He went. It was in Ohio. He came upon a settlement of Wyandot Indians, and there he worked. They were a hard lot, given to gambling and drink. Stewart could not talk in the Wyandot dialect, and had to use an interpreter. The first congregation consisted of three persons, Stewart, the interpreter and a squaw. But in a few months large numbers of Indians were converted. Later, a white man, James B. Finley, worked among the Wyandots. When he went east with two chiefs, Monocue and Between-the-Logs, they created a sensation. Between-the-Logs proved to be an orator of power, and, even though he had to speak through an interpreter, held audiences spellbound. The result of all this was, the organization of the Foreign Missionary Society of the Methodist Episcopal Church, that has today representatives in every continent, and working among almost every race. John Stewart moved out of Podunk, and millions have followed him.

The League of Nations seems dead, at least for the time. But some kind of league will be found, we hope, that will bind the nations together in a strong bond of mutual helpfulness. And Christian missions have been working at this for fifty years. Today, missions are among the strongest buttresses for a world league. It was only three years ago that Peru voted religious freedom. It had been a long fight, and there were thrills in it. And when, amidst the wildest confusion, some applauding, some hissing, the bill granting religious freedom to all people and all faiths was passed, it was a shining milestone in the history of the South American republic.

TODAY famine eats its victims in China. We of the United States are helping, and we ought to help. An area equal to five of our middle western states is without food. Nothing will do more to build up international friendship than sending food to suffering peoples. What we sow today, we may never reap, but our children will, while China's children will be joyful now. That is international Christianity. That is friendship with wings. That is moving out of Podunk.

The man who said that America did not have enough religion to export was wrong. Religion increases the more you export it. You might as well say, you must not love your child too much, as you might exhaust your love. Love multiplies with use. So does religion. The time will come when they will not have these devastating famines in China. They will not have the famines for one reason, because they will not have floods. And they will not have floods because there will be reforestation. And there will be reforestation because American scientific missionaries using American text books and American tools, will teach the Chinese how to grow trees, and how to make the soil laugh. It is a lot more fun to think of one's religious faith going out into all the world, than it is to nurse a sickly faith that hasn't life enough to get outside one's own dooryard.

THE MAN WHO ISN'T THERE.

BY IDA M. BUDD.
I've seen the wise man frequently,
And so, I'm sure, have you,
Who knows, in all emergencies,
Exactly what to do.
The things that other people daunt,
Surprise, perplex, or scare,
Would not affect him in the least,
If he were only there.

He isn't slow to criticize
The actions of the rest,
Tho' he good-naturedly allows
They tried to do their best;
But men should school themselves to act
With calm and thoughtful care:
He could have managed it so well,
If only he'd been there.

What grievous loss of property,
What woe to life and limb
Had been averted if, in need,
"They" had but called on him.
What valorous deeds and feats of skill
Had made beholders stare
And hold their breath in awed amaze,
Only—he wasn't there.

He knows how great reforms are wrought,
(At least, how they should be),
The faults and flaws of public men
He's very quick to see.
In telling why their methods fail
He's eloquence to spare,
But look for him to bear a hand
And lo! he isn't there.

He knows just how a Christian ought
To walk, from day to day,
And lashes those who deviate
A hair's breadth from the way.
He likes to see a life that's lived
Precisely on the square;
But when it comes to living thus—
Alas! he isn't there.

Well, bye-and-bye will come his chance
To prove himself and show
How men should act while traveling
The way all men must go;
And in the fame so long denied
We'll hope he then may share:
Since death admits no alibis
He'll certainly be there.

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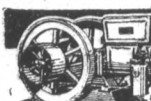
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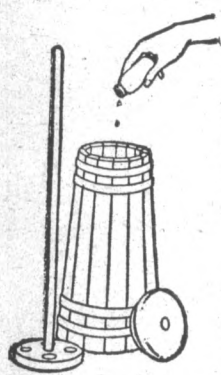
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To love's sweet day-star, that shall o'er thee burn
Long as the currents roll.—Holmes*

Woman's Interests

Now Let's All Boost

IF you were one of the women who stood through the morning meetings during the Farmers' Week sessions, or gave up in discouragement after waiting in line to get in, you will realize the need of the Michigan Agricultural College for a new home economics building for meetings of this kind, if for no other reason. Scarcely a week passes that one or several gatherings of this kind of women from the state are not held at the college, and there is always this crowded condition to contend with.

While the new building asked for will provide additional class rooms, laboratory space, and housing facilities for our students at college, in its broadest sense these additional facilities will benefit our farm women.

As one of the oldest home economics institutions of the country, ranking fifth in number and first in the per cent of students taking home economics work, the M. A. C. is in a position to accomplish much for the biggest profession in the world, that of homemaking. The college has the fifth largest home economics institution from a list of twelve, and all of these institutions, with the exception of Florida State College, which is now asking for a building, have separate home economics buildings either completed or in the process of construction. With almost a third of the total number of students on the campus, the home economics division at East Lansing must struggle along in a makeshift of a combination dormitory and laboratory and class rooms.

Child welfare work is conceded to be one of the biggest tasks before the women of the country today, and there is a crying need for this work in the country as well as in the city. In Wayne county out of two thousand children in the rural schools who were weighed by the school nurse, fifty per cent were over seven per cent underweight. At the Bay County Fair, out of 1,120 children examined, 589 were more than five pounds underweight, and 257 were ten pounds or more underweight. Dr. Emerson, of Boston, one of the greatest child specialists in the world, says that seven per cent underweight means a year's retardation in physical development. Underweight and undernourishment in children, he declares, are not necessarily the result of insufficient food, but rather of improper food.

Every school child must have a hot dish at noon to supplement the lunch brought from home. Cafeterias are becoming the rule rather than the exception in our city schools, and all up-to-date rural schools are adopting the hot lunch at noon. The college has more calls for trained cafeteria managers than they can possibly fill. Every girl at M. A. C. should have an opportunity to study this problem, to plan and prepare food in large quantities with simple apparatus. This is impossible now with our lack of space.

Every farmer and farmer's wife knows that the animals on the farm must be properly fed if they develop properly. Experiments in animal feed-

ing have been carried on for years by some of the greatest scientists of the age. Much of this experimental animal feeding, such as the work done by Dr. McCollum, has resulted in most valuable information about human feeding. At the Michigan Agricultural College, no work has been done along lines of human experimental feeding. With even limited laboratory space, most valuable experimental work could be done with small animals which would have a bearing on human nutritional problems.

If the women of the state have profited in the past by work carried on at

the Michigan Agricultural College, if they want work continued which will directly affect the health of the people of the state, then they must boost for the building program. The grange, the D. A. R., the farm bureau, and women's clubs all over the state have placed themselves on record as organizations favoring this building program. It is now necessary for the women of the state to get behind it individually. Write to your representative today if you believe a home economics building at M. A. C. will raise the living conditions of the state and benefit the homes. —M. A. C. Record.

Help With Spring Sewing

By Hilda Richmond

AS the busy season hastens along and the social gatherings of the country must come to a close, many housewives take advantage of the pleasant days of March or April to have a neighborhood sewing, and combine business with pleasure in getting the sewing out of the way before housecleaning time. The success of this plan depends upon careful forethought and planning, together with ample materials and at least three well cleaned and oiled sewing machines for the workers.

One lady who makes the sewing an annual occasion hires a competent woman to come for a day and cut out and baste the garments. Each article is started and has the required materials to finish cut and pinned securely to it, so that there can be no mistakes. The hems are then put in, the buttonholes made, the plackets and belts sewed by hand and everything neatly and securely finished without trouble the day of the sewing.

Such things as sheets, towels, curtains, pillow slips and aprons can be cut by the mistress of the house and need no basting. The hems are pinned in to show the width and the pockets of the aprons sewed or basted in place. Garments for the baby are of the simplest and so are the everyday rompers and articles for the older children. To fill in odd moments and provide work when the sewing machines are busy there are always rags to be sewed for rugs, patchwork for quilts and quilts to be quilted or comforts to be tied. Everything is done to provide work for many busy hands a whole day so as to make the occasion one of profit.

The hostess provides an abundant dinner promptly at noon and a social hour is enjoyed immediately thereafter. Then the work is resumed and by four in the afternoon an immense pile of finished sewing is ready to be put away. Often the ladies bring their own dishes and silver so that there is little dishwashing and no borrowing of dishes necessary, as they in turn expect to entertain with sewings and enjoy the freedom from dishwashing.

If the organization is the Ladies Aid of the local church, the ladies of the grange, or some club, a modest sum is paid for each member that works and

this goes into the treasury, but if merely friends and neighbors are asked no money is paid out. The ladies who are skilled at needlework give their trained hands to the more difficult tasks while those with no knack with the needle help with the dinner.

The easy dinner for this occasion is the big chicken and gravy and biscuit feast, as the chickens can be gotten ready the day before and the biscuits mixed and cut early in the morning of the sewing. Then the setting of the tables, mashing of potatoes and arranging of the dessert of cake and canned fruit or freshly baked pies will be all that will bother the hostess. Of course, extra vegetables and extra things are often used, but a chicken dinner needs few extras. The whole day is one of pleasure and profit and well repays the woman who gets her sewing done in this way.

TWO LABOR-SAVING DEVICES.

ONE of the handiest tools that I have on cleaning days is a wire mopstick, which, by the way, was purchased for a small sum. The wire on the stick was covered with heavy felt material, being very careful that all sharp edges were thoroughly covered. Over this put a piece of a wornout blanket, sewing it securely to the felt. When ordinary dusting is to be done, I put a dustless duster over the padding, fasten it to the mopstick and proceed to dust in the usual way. The long wooden handle of the mopstick enables me to dust the out-of-the-way corners, and surfaces almost out of reach; I am able with this device to dust picture moldings, ceilings, corners, tops of windows and doors and other high places. It saves time and labor, and I never have to use a chair or ladder as was necessary formerly. The other handy device is a piece of ordinary rubber hose which has been a great help on wash day. By the use of this hose which is six feet in length, I have saved myself many steps and a tired back as well. I can fill my wash tubs with cold water, which saves carrying and lifting it, and also gives me time for many other necessary duties that invariably occur on washday.—Mrs. E. O. S.



Bedtime Toys

BY M. MEREDITH.

A SOFT washable woolen doll is just the thing for baby's bedtime comfort for it cannot hurt the little one and it will not break.

A cuddlesome doll can be made in a few moments from a hank of wool left over from a sweater which actually required less wool than was expected. It may be white or colored, but the thicker the wool the softer and fluffier will the doll be. Half an ounce of wool will make a sufficiently large doll.

To make it, take a hank of wool about eighteen to twenty inches in length, fold it in two, and with strands of the same wool tie it tightly in three places, first near the top, then about two inches lower down to form the neck, and, last of all, lower still for the waist.

Cut the loops of wool at the top, so that the cut ends will form the hair. Now cut loose several strands just above the waist-line and tie them with a piece of wool to form arms. Tie them again near the ends to mark the hands.

On the head part place two small linen buttons and sew them on with blue or black wool to represent eyes. A few stitches of wool can be put in to represent nose and mouth.

Tie a ribbon around the waist and the doll is ready for the little one's eager fingers. If a boy doll is desired the loops of wool left below the waist-line are separated into two equal parts and each tied top and bottom to make legs.

This woolly doll can be made in ten minutes and costs very little, even if the wool has to be bought for the purpose. To any baby it will give real pleasure.

WHITE COVERLET FROM SCRAPS.

I needed a new bed-spread, so I collected all the white material on hand, left-overs from underwear, etc. Those that had become yellow with age I washed and ironed, in fact, it is best to wash and iron all the pieces, as that will prevent shrinking when the coverlet is washed.

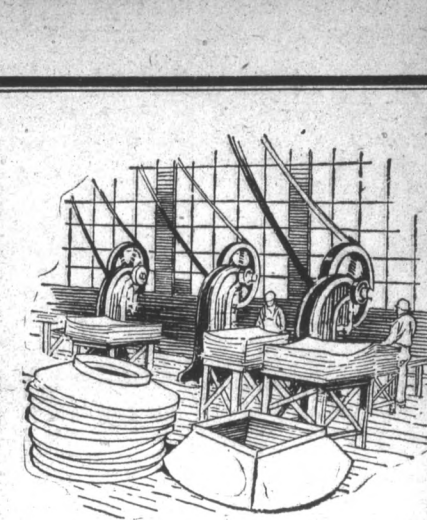
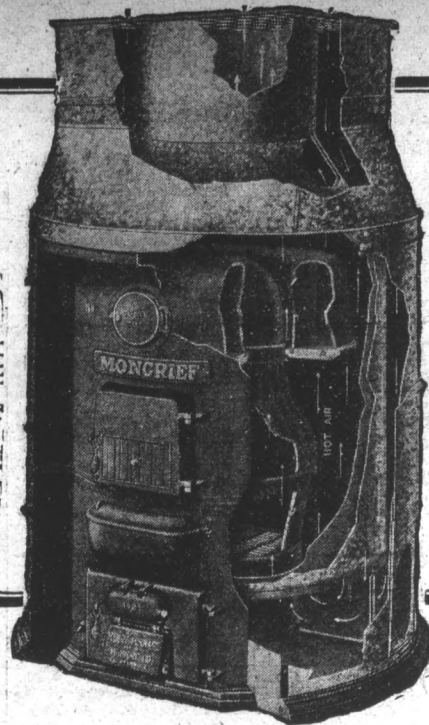
I cut squares, eight by ten inches from worn-out white cotton underwear, and sewed the pieces on crazy quilt fashion and made a white crazy quilt. I outlined the blocks after setting them together in strips, with blue tan silk, and sewed the strips together.

Then I pinned the spread right side down into quilt frames, fastened a new sheet on top and tied with blue tan silk according to the blocks. After finishing the edges with the blue thread in herringbone stitch, I had a very durable spread, and all it cost me was my labor and the new sheet, and I made use of scraps that would otherwise have been thrown away.—Mrs. J. F. T.

CHILD'S ACCOUNT BOOK.

IN this era of American extravagance, why not teach our children the value of money? Try giving them a certain amount each week for duties well performed, increasing it to cover certain extra tasks, not enough to give them the impression that you are paying them wages, but a stipulated sum. Impose a small fine out of the allowance for duties neglected or forgotten.

Have them keep an account book, and credit themselves with all they receive, and charge themselves with all they spend, and balance the book once a month. Encourage them to save the nickels and dimes until they amount to dollars, with which they can start a bank account or buy something wished for, instead of spending every nickel for foolish toys or too much candy to impair their digestion. This first business training will be of benefit in later years.—Mrs. J. J. O'C.



From Ashpit

To Register

Our idea of making a good furnace is to make it all ourselves. Then we can be sure it will prove up to our claims and meet your fullest expectations.

The Moncrief is not a "contract made" pipeless furnace—one part here and another somewhere else. From ashpit to register, the Moncrief is made in our own foundries.

Moncrief castings are of the finest grey iron. We buy only the best materials and combine them in our own cupolas under the expert direction of men who have spent a lifetime making Moncrief furnaces.

MONCRIEF PIPELESS FURNACE

Burns any kind of fuel—wood, hard or soft coal, or coke—and gets all the heat out of it for you. The roomy straight side firepot does that perfectly, with the help of the one-piece corrugated side feed section. Then the long fire travel sends the smoke up the chimney, but not until it has delivered every last bit of available heat to the circulating air.

This air current is the other half of the secret of the low cost of Moncrief Pipeless Furnace heating. Such a slow, steady current that you don't notice anything but a genial

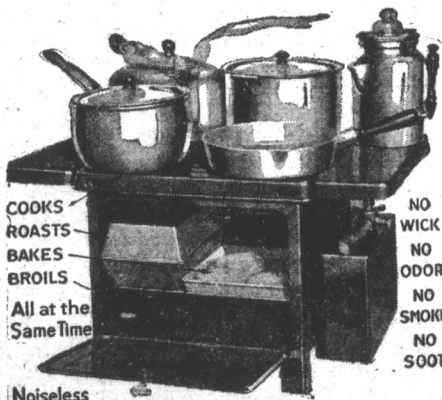
glow all over the house—yes, in the corners too. But this air current does the heating job in a wonderful way because of its big volume—big because the casings of the Moncrief are the biggest ever made for a pipeless furnace.

We can't tell you in an advertisement all the reasons a Moncrief Pipeless Furnace will put warm air in cold corners and the dollars back in your pocketbook. Ask your Moncrief dealer. Write us if you don't know him, and we'll tell you his name.

Manufactured by

THE HENRY FURNACE & FOUNDRY CO.,
CLEVELAND, OHIO

DEALERS: Many desirable territories are still open. Write for the details of the Moncrief Proposition.



Send for Free Illustrated Catalog of the Little Wonder Oil Stove

Designed from suggestions of women oil stove users the country over. Enclosed top (which allows of no wasted heat up around sides of cooking utensils), and forced air feed (stove burns 90% air to 10% oil), makes one central burner and one gal. of kerosene do the work of any other oil stove with 6 burners and 10 gals. No wick or asbestos rings; no dirt; dangerless; ODORLESS. Cooks fast or slow as desired. Height 14 in.; cooking surface (besides 2 warming shelves) 14 in. x 16 in. Weight 30 lbs. Generated with denatured alcohol. Simply operated; strongly constructed; occupies but little space. The greatest oil stove ever invented, and price only \$17.50 f. o. b. factory. Send for Catalog NOW.

Little Wonder Stove Co.
17255 GABLE AVE. DETROIT, MICH.

EVERBEARING STRAWBERRY
Our free Catalog describes and illustrates a full line of choice small fruit plants. SEND FOR IT.
J. N. BOKELY, R. 6, Bridgman, Mich.

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It is well established and supported by conservative financiers, that there is no class of Investment Securities that equal State, County, and City Bonds (Termed Municipals) for absolute safety, as the whole taxable property of the issuing organization is pledged for the payment of both principal and interest.

We specialize in MUNICIPAL BONDS of highest class, that yield to the investor from 5% to 6% annual interest, that is Exempt from all Government Income taxes; more yield and safer than Savings Banks. Denominations from \$500 up. Full descriptions sent free.

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Nashby Bldg. TOLEDO, OHIO.
References: Any bank or business firm in Toledo.

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Direct from Roaster to Consumer

Old Colony Blend, is an "honest to goodness" Coffee just what you have been looking for. Roasted daily sent parcel post prepaid.

3 lbs. \$1.00—10 lbs. \$3.20
State if you want Coffee ground.
5 lbs. choice Black, Green or Mixed Tea \$2.50. Guaranteed by one of the oldest Coffee Roasters in Michigan.

John E. King Coffee Co.
Importers and Roasters
160 Jefferson Ave., East Detroit, Mich.

SENATOR DUNLAP Strawberry Plants at \$3.50 per 1,000; \$2.00 for 500; \$1.00 for 250. Guaranteed first class or money refunded. C. H. STANLEY, Flower View Farm, R. 2, Paw Paw, Mich.

Strawberry Plants Red and Black Raspberry plants write for price list.
GEO. B. OWENS, Box 353, Leslie, Mich.

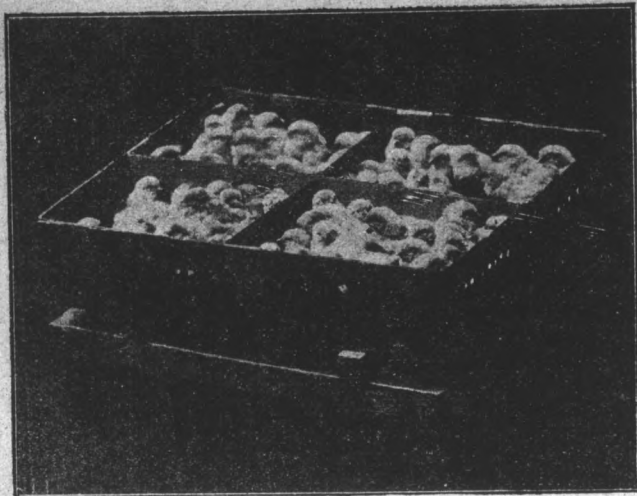
SPRING AND SUMMER CATALOG.

Send fifteen cents in silver or stamps for our up-to-date spring and summer 1921 catalog, containing over five hundred designs of ladies', misses and children's patterns, a concise and comprehensive article on dressmaking, also some points for the needle, (illustrating thirty of the various, simple stitches), all valuable to the homedressmaker.

No. 3516.—Girl's Dress. Cut in four sizes, 8, 10, 12 and 14 years. A 12-year size will require 4½ yards of 40-inch material. Price 12c.



No. 3309.—Junior Dress. Cut in three sizes, 12, 14 and 16 years. A 14-year size will require 5¼ yards of 27-inch material. Price 12c.



200 Chicks Ready for Shipping

CHICKS

Our Tenth Year

We hatch about 20,000 every Tuesday. White Leghorns and Brown Leghorns. Bred to lay, large white eggs. Stock has been improved considerably during the ten years and is now some of the best. We ship everywhere by parcel post in lots of 25, 50, 100 and 1000 or more. Safe arrival guaranteed.

Write for catalogue with price list.

Wolverine Hatchery

H. Wiersma, Owner and Mgr.
Zeeland, Mich., R. 2.

Farm Poultry

The Farm Flock in April

By R. G. Kirby

BROODY hens can be quickly broken if removed from the nest and confined when first found there. Such hens will soon return to laying but egg production will be greatly delayed if hens not needed for setting are allowed to waste their time on the nests.

Broody hens in the laying-house may injure hatching eggs by causing growth to start. Then the eggs are cooled down and the germ dies and the eggs are unhatchable. All of the nesting space is needed in the spring to prevent over-crowding of the nests and broken eggs. A broody coop in the laying-house will make it easier to remove the broody hens each night.

Keep the Roof Waterproof.

Leaks in the poultry house roof will mean damp litter and this soon causes insanitary conditions in the poultry house. Sometimes roofing paper nails will work loose. Then it is necessary to re-seal the strip of paper with tar or some of the commercial preparation furnished with the paper. Loose strips may be torn off in a wind storm and then more expensive repairs are necessary.

Controlling Lice.

When warm weather arrives the breeding conditions for mites and lice show marked improvement. Keep the roosts painted with a commercial coal tar spray or a lice paint. The old engine oil from the automobile is a good paint for roosts. Kerosene oil is good but we find it more expensive than the commercial mixtures. All of the above mixtures will kill red mites. Lice can be destroyed with blue ointment mixed half-and-half with vaseline. Treat each bird in the spring and the protection will last until fall. We find louse powders efficient but the treatment must be repeated more often than blue ointment.

Catching the hens is the largest part of the work in giving treatments for lice. Make a side entrance in a shipping coop and place it against the trap door of the poultry house. Allow enough hens to run through to fill the crate. Then they are easily caught and treated with blue ointment during the day. Repeat until the house has been emptied. It is better than chasing hens or snagging them with the chicken crook.

Moisture for Eggs.

Cut a fresh sod and place it in the bottom of the setting hen's box. Place loose litter over the sod and do not make the nest too deep or the hen will have to jump down upon the eggs instead of stepping upon them. The sod will furnish moisture for the eggs and make the conditions similar to the nest that the hens make when she hides the eggs on the ground in a fence corner.

Remember that hatching eggs are more injured by heat than medium cold. So gather the eggs often on the first warm days, as the temperature goes up rapidly when the sun is shining on a house covered with black roofing paper. Store the eggs in a temperature close to fifty degrees and use them for hatching as soon as possible. The fresher the eggs the better the chances for a good hatch.

Turkey Eggs Deteriorate Rapidly.

It pays to set turkey eggs as soon as possible as these eggs have been found to deteriorate even more rapidly than hen's eggs. Many poor hatches

are probably due to saving the eggs for several weeks when more vigorous poults can be obtained by incubating them when not more than a week or ten days old.

Many wish to know if goose eggs can be hatched successfully in an incubator. It has been done by carefully turning and sprinkling the eggs, but is not advised. It takes goose eggs longer to hatch than hen's eggs and the results are better when the eggs are given to hens, turkeys or the mother goose. The first eggs are usually placed under hens and the last clutch given to the goose.

Watch the Lame Birds.

A hen may show a lame leg without having tuberculosis. It might be due to a slight touch of rheumatism or some physical injury caused by fighting or jumping from a high perch on a stone. Isolate such a bird and if she does not lose in flesh and eats well, the condition may immediately improve and the lameness disappear. When the lameness is combined with rapid emaciation it is a danger signal.

Hens are like all animals in many ways. If the hens are given the right kind of feed and housing, they avoid many troubles that might otherwise occur. If they are bred from stock with vigor and stamina this is another point in their favor. The careful poultryman usually has good success in keeping the hens healthy and has to do little doctoring. I believe that culling has done something besides increase egg production. It has removed a lot of hens weak in vitality and has improved the general health conditions in the flocks that have been culled.

Keeping the Flock Within Control.

More poultry fencing will increase the pleasure of keeping poultry on some farms. When the hens are in the flower garden and on the veranda they are a nuisance. As much range as they really need can be fenced off so that the hens will be under control and still have practically free range. If this can be a double range the hens can be changed from one side to the other by opening different trap doors in the house.

On the double range plenty of green food can be supplied to the hens and the cultivation of the soil at certain times will help to prevent contamination. Certain crops, like corn and sunflowers, can be planted on one side and the hens given the advantage of the shade after the plants are a couple of feet high. Such an arrangement prevents the birds from eating the grass too close and killing it out and insures a healthy amount of green food for the flock, even in the summer when it is dry and hot.

A number of live stock farmers we have known did not like poultry and had a good reason for their opinion. The hens roosted on their farm implements and in the horse and cattle barn and were constantly ranging where they were not wanted. They could scarcely move without stumbling over a squawky hen. The fenced range improves the situation. It means that the birds can have the run of the farm at certain times, but can be controlled when necessary during the spring and summer.

Many eggs are lost when hens have the run of the farm and hide their nests in the hay mow, straw stacks, fence corners and under small buildings. This can largely be prevented

Michigan's Largest Pedigree Poultry Farm DAY OLD CHICKS

From S. C. W. Leghorns, That have been carefully culled for heavy laying. Mated with PEDIGREE cockerels, whose records in the past five years are, the lowest in that time, 215 eggs, in one year, and as high as 290 eggs, in one year. We guarantee that every chick and breeder that we sell comes from Lakewood Farm only. Write for catalog. Grade A, 20c each. Grade B, 15c each.

Lakewood, Farm, Box B, Holland, Mich.

Baby Chicks Pure Bred 800,000 in 1921

To your door prepaid by us Guaranteed live delivery. We have the most modern methods of hatching and shipping methods and we ship you nothing but the best, our stock is of the standard Free range bred for heavy egg laying quality and our chicks are strong and healthy and will develop very rapidly. We have the following breeds S. C. White, Buff and Brown Leghorns, Anconas, W. and B. Rocks, R. C. and S. C. R. I. Reds, B. and W. Orpingtons, W. Wyandottes. Get our big bargain offer in CHICKS and BROODERS and save money on your

ORDER and Maturity of your flock. Circular FREE.

WOLF HATCHING & BREEDING CO., Dept. M, Gibsonburg, Ohio.

CHICKS At Reduced Prices CHICKS

20,000 large, strong, well hatched chicks every Tuesday hatched from eggs laid by selected hens on free range insuring healthy, vigorous chicks that will live and grow into money for you.



Barron S. C. White Leghorn heavy weight and heavy layers American S. C. White Leghorns heavy laying strains S. C. Brown Leghorn the most beautiful Leghorn and a good layer. S. C. Anconas great layers.

We Ship By Parcels Post and Pay the Postage to Your Door.

We guarantee the chicks to reach you in good condition. Catalogue free.

WYNGARDEN HATCHERY, Box M, Zeeland, Mich.

Huber's Reliable Chicks--700,000 for 1921

By Parcel Post Prepaid. Guarantee Live Delivery.



This is our 12th season in hatching Baby Chicks of quality, bred for exhibition and high egg production. Prices after Apr 1st. S. C. White and Brown Leghorns, 13 and 15 cts. Barred Rocks, R. C. and S. C. Reds, 15 and 17 cts; S. C. Anconas 14 and 16 cts; S. C. Black Minorcas 22 cts; S. C. Buff Orpingtons, 21 cts; White Wyandottes 25 cts. Odds and Ends 13 cts. Our chicks are hatched right and full of pep. All we ask is one trial and we know you will come again the same of thousands of others. Combination offer on chicks and Brooder stoves.

HUBER'S RELIABLE HATCHERY,
East High St.,
Fostoria, Ohio

SUPERIOR BABY CHICKS

At greatly Reduced Prices. English and American White Leghorns and Anconas farm raised—Free Range—Highest Quality—Lowest Prices.

A Square Deal is Our Motto

If you want the best that money can buy send for our free catalogue and price list TODAY.

Superior Poultry Farms & Hatchery, Box 203, Zeeland, Mich.

150 EGG CHICK
Incubator & Brooder
both are made of
California Redwood.
Incubator covered with
sbestos and galvanized
iron; triple walls, copper
per tank, nursery, egg tester, thermometer. 30 days' trial—money back
if not O.K. Write for FREE catalog.
Ironclad Incubator Co. Box 85 Racine, Wis.

\$15.95 Buys 140-Egg Champion Belle City Incubator
Hot-Water, Copper Tank, Double Walls
Fibre Board, Self-Regulated.
\$9.95 buys 140-Chick Hot-Water Brooder. Or both for only
\$23.95
Express Prepaid
East of Rockies and
allowed to points West. Users
Guaranteed. Order now. Share in
my \$1,000 in prizes, or write for
Free Book, "Hatching Facts." It
tells everything. Jim Rohan, Pres.
Belle City Incubator Co., Box 14 Racine, Wis.

by keeping the hens on a fenced range and keeping that range free from weedy fence corners and heaps of rubbish or scrap piles.

Wind Hard on Chicks.

During the early spring it is a temptation to turn the chicks out at all times but it pays to keep them in the brooder house when chilly winds are blowing. They can stand quite a little cold but wind soon injures them. Sudden rains may catch the chicks outside and some will huddle and drown. If the weather conditions are quite uncertain and the brooder house is clean and properly equipped with mash hoppers, then the brooder house is the best place for the small chicks. But be ready to let them out on the clean earth the instant that weather conditions are suitable. There is nothing like it to make them scratch and sing and grow sturdy bodies.

FEED THE BEES NOW.

THOUSANDS of colonies of Michigan bees are in danger of starving to death and will be dead before nectar is again available," says B. F. Kindig, state inspector of apiaries, unless the 15,000 bee-keepers of Michigan take prompt action to save their colonies.

Mr. Kindig said that the present winter has been so mild that it has permitted unusual activity within the hives, including brood rearing out of season. Without exception hives opened by state inspectors and college men have shown that the food supply of the bees was very low. In many cases the bees were on the verge of starvation and would not have lasted much longer. The danger threatens practically all of the 150,000 colonies in the state, says Mr. Kindig, and the possibilities are great for enormous losses to the state's industry unless prompt measures are taken.

"The bee-keeper who is alive to the situation will examine his colonies at once," said Mr. Kindig. "If he finds the honey stores low, he will make up some hard candy and put it on top of the frames at the first opportunity, which means a warm, mild day, if conditions will permit waiting that long. If the bee-keeper does not know how to make hard candy, loaf sugar is a good substitute, but hard candy should be first choice."

Michigan's 150,000 colonies of bees produce an annual crop of ten million pounds, according to figures in possession of the State Farm Bureau.

CANNING CROP DATA.

(Continued from page 444).

an acre. It is pointed out, however, that the figures based on last year's showing are misleading in that the average yield, owing to the extremely favorable season, was considerably above the average. In an average season seven tons to an acre is a fair yield. On the basis established by the check, the cost a ton would be \$21.10.

Based on 1920 Conditions.

The above costs apply to 1920 conditions. If the price of labor, plants or any other item is cheaper the costs will be correspondingly lower. One of the factors which has considerable influence on the cost per ton is yield per acre. A table has been compiled which illustrates this. The cost per acre of growing tomatoes yielding less than three tons is \$24.95; yielding between eight and eleven tons, the cost would be \$17.64, and when the yield is more than eleven tons per acre the cost is reduced to \$13.61.

The stock on grass in most cases will gain in flesh and vigor during the summer. If possible, ample grain and succulent feed should be produced this season to keep them in a thrifty breeding condition next winter. It pays to feed well.

"even when there is no fungus"
Pyrox
 - for fruits and vegetables -
 REG. U. S. PAT. OFF.
 TRADE MARK REGISTERED

See Pyrox page ad in this paper April 9—Bowker Insecticide Co.—Boston—Baltimore—Chicago

POULTRY

Quality Baby Chicks

and 8 weeks old pullets

AT REDUCED PRICES

American-English Strain S. C. W. Leghorns our specialty. Produced from the choice of 2000 hens on free range. We are not running a hatchery but produce all the eggs that go into our incubators from high quality selected stock. Only the best are used for hatching. This stock is worth more to you than those bought from the regular hatchery though our prices are practically the same. We are now booking orders for latter part of April, May and June delivery. Our supply is limited so place your orders early.

Macatawa White Leghorn Co.

R. 1, Holland, Mich.

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. **DEER & ADAMS**, Litchfield, Mich.

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.

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

DAY OLD CHICKS S. C. White Leghorns. From trap-nested stock where every hen must produce 60 eggs in four winter months. One hundred big thrifty chicks for \$25.00. **MACALWHITE POULTRY YARDS**, Alex. MacVittie, Proprietor, Caro, Mich.

BABY CHICKS, Eight imitations 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 trap-nested, bred-to-lay, expertly tested for many generations. Large illustrated catalogue 25c, stamps for circular. **Norman Poultry Plant**, Chatsworth, Ill.

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

Broad View Farm Big Type S. C. White bodied birds. Heavy layers of big white eggs. Exhibition type eggs \$1.50. Post paid. **E. B. McKERCHER**, Hillsdale, Mich.

CHICKS! CHICKS!

If you are looking for chicks that are bred for heavy laying and exhibition here is your chance. OURS grows and pay. Leghorns, Rocks, Reds, Anconas, Minorcas, Wyandottes, Orpingtons. Prices 13c and up. Post paid. Catalog free. **HOLGATE CHICK HATCHERY**, Holgate, Ohio.

CHICKS CHICKS

Shipped safely everywhere by mail. S. C. White Leghorns and S. C. Mottled Anconas, the great egg machines. Strong, sturdy chicks guaranteed to satisfy. Order now for spring delivery. 13th season. Free catalogue. **W. Van Appledorn**, R. 7, Holland, Mich.

CHICKS English Strain White Leghorns the heavy laying strain at only \$15 per 100; prepaid by mail safe arrival guaranteed send cash with order special rates on 500 or more. **JAMESTOWN HATCHERY**, Jamestown, Mich.

DAY-OLD CHICKS

\$16.00 per 100 and up. Hatching eggs, \$2.00 to \$15.00 per setting and \$9.00 to \$15.00 per 100, from 25 varieties of pure bred, farm raised fowls: Chickens, Geese, Ducks, Turkeys and Guinea. Price list and circular free. Plenty of nice breeding stock. Book now for early spring delivery. **WILMINGTON HATCHERY & POULTRY CO.**, Wilmington, Ohio.

DAY-OLD CHICKS

Strong, vigorous fellows, the kind that live and grow. Carefully selected, open range, purebred utility stock. Price reasonable. Circular free. **SUNBEAM HATCHERY**, 2433 S. Main St., Findlay, Ohio.

Fowler's Buff Rocks: Eggs for hatching. Also a few choice cockerels left. Write for prices. **R. B. FOWLER**, Hartford, Mich.

Don't Buy Baby Chicks Until you get our catalog and prices. Pure bred, heavy laying White and Brown Leghorns, Anconas. Write today. **Monarch Hatchery**, Zeeland, Mich.

LOOK [75,000] CHICKS

Our Hi-Grade profit paying Bred-to-Lay, M. A. C. tested and exhibition chicks, at reasonable prices. Hatching eggs, 8 varieties, Circular FREE. **Lawrence Poultry Farm**, R. 7, Grand Rapids, Mich.

BABY CHICKS 25 for \$5.50 50 for \$10 and 100 for \$18.00. Prepaid, safe delivery guaranteed. Single Comb White Leghorns; White, Buff and Barred Plymouth Rocks; S. C. R. I. Reds and Anconas. **Fenton Chick Hatchery**, Box 24, Fenton, Mich.

Barred Rocks 15 eggs, \$1.75; 100 for \$8; by prepaid mail. Flock average last year 133 eggs. **LEWIS B. AVERY**, Clinton, Mich.

Barred Rocks from Rocky Ridge Hatching eggs to lay birds \$2.00 per 15. Prepaid by Parcel Post. **W. T. RICHARDSON**, Hanover, Mich.

Barred Rocks egg contest winners, eggs from strain with records to 390 a year. Flock average per setting prepaid by P. P. Circular free. **FRED ASTLING**, Constantine, Mich.

CHICKS Bred-to-lay S. C. W. Leghorn and Barred Rock quality chicks that please, guaranteed full count and to arrive to you "all ready made" in first class condition by parcel post paid. Leghorns \$15 per 100, Rocks \$18 per 100. Special prices on 500 to 1000. Circular. **Sunnybrook Poultry Farm**, Hillsdale, Mich.

Choice Baby Chicks English and American White Leghorns and Anconas. Catalog free. **M. D. Wyngarden**, R. 4, Zeeland, Mich.

CHICKS Pure-bred White and Brown Leghorns from free range heavy laying stock that is of large size with large egg capacity. Sent postpaid. Prices reasonable. Safe arrival guaranteed. Catalog free. **Royal Hatchery**, R. 2, Zeeland, Mich.

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.

Eggs from pure Toulouse geese. Ten for five dollars. Parcel post paid. **Mrs. Amy Southworth**, Allen, Mich.

Look! 100,000 for 1921. Day Old Chicks, Barred American and English; and Anconas. Write for free catalog. **Fairview Hatchery**, R. 2, Zeeland, Mich.

Ohls Improved Leghorns

BABY CHICKS bred from stock with high egg records and show room quality. None better for filling the egg basket. Catalogue free. **Ohls White Leghorn Farms**, Marion, Ohio.

100,000 CHIX 15c UP.

Best selected utility trap-nested exhibition stock ever produced. 18 varieties. Hatching eggs Hens, ducks, Early bookings, avoids disappointment. Catalog FREE. **Beckman Hatchery**, 26 E. Lyon, Grand Rapids, Mich.

Rhode Island Reds R. C. Large fancy cock and hen sets at \$3 each. Address **BURT SIBSON**, Imlay City, Mich.

R. C. Br. Leghorn Eggs, \$1.50 for 15. Pekin duck, \$1.50 for 8. W. Chinese goose eggs, 40c each. **Mrs. Claudia Betts**, Hillsdale, Mich.

R. C. Rhode Island Red eggs for hatching. Also some fine cockerels for sale. **MRS. ALBERT HARWOOD**, R. 4, Charlevoix, Mich.

Baby Chicks **LOOK! 1,000,000 for 1921.** \$13 a 100 and up. 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. Catalogue free. Stamps appreciated. **NABOB HATCHERIES**, Gambier, Ohio.

March Chicks Buy 'em Home Near **March 28th** Single Comb White Leghorns \$14.00 per hundred; Rocks and Reds \$18.00. Add 50c for half and quarter hundreds. Write for other varieties. Prepaid and guaranteed live delivery. **Washtenaw Hatchery**, Ann Arbor, Mich.

SELECTED WINTER LAYERS

S. C. WHITE LEGHORN EGGS FOR HATCHING, laid by hens that averaged over two hundred eggs each last season. 15 Eggs \$3.00; 30 \$5.50; 100 \$15.00. **BABY CHICKS** each week beginning March 1st, 15¢ 47.50; 25 \$10.50; 50 \$20.50; 100 \$40.00. No catalogue. **Dunningville Poultry Farm**, Dunningville, Mich.

S. C. WHITE LEGHORN CHICKS

Send for Catalog **SNOWFLAKE POULTRY FARM**, Route 1, Grand Rapids, Michigan

S. C. Black Minorcas, CK's \$5.00 each. One ck' 1 S. and 4 2-year-old hens \$15. One yearling cock and 5 hens \$20.00 great bargain. **R. W. Mills**, Saline, Mich.

Snowy White Rocks Fishel strain, dandy layers 15 Eggs \$3.50-15; \$4.50; \$8.00 All prepaid. **Mrs. Earl Behnhoff**, Vanburen, Ohio

5 lb. English White Leghorns

Barron strain. My free catalog describes them, gives feeding methods, a new way to cull hens and much valuable information. **A. Wauchek**, Gobleville, Mich.

BABY CHICKS of Superior Quality

Hot from the Hatchery, right to your door safely, by prepaid parcel post. BIG Strong, fluffy fellows hatched from eggs of selected flocks, and under our own supervision. **ROCKS, LEGHORNS, ANCONAS, REDS and MINORCAS**. Chicks that live and grow into money. Bred for EGG PRODUCTION and the SHOW ROOM. Save money by sending for our catalogue NOW. **THE SUPERIOR CHICK HATCHERY**, Lock Box 197, Prairie Depot, Ohio.

BABY CHICKS Single Comb White Leghorn (T. C. B. Strain), Barred Plymouth Rock, S. C. R. I. Red, Anconas, White Wyandottes and Brown Leghorns 25 for \$5.50, 50 for \$10.00, 100 for \$18.00, 1000 \$170.00. Ross Wade, Meadow Brook Hatchery, Mt. Morris, Mich.

Baby Chicks Anconas, White Leghorns, Brown Leghorns and B. Rocks all have single combs, at greatly reduced prices \$11. per 100 and up parcel post paid, safe delivery guaranteed, catalog free. **Knolls Hatchery**, R. 3, Holland, Mich.

Barred Plymouth Rock eggs for hatching. \$2.00 per 13 postpaid. Fullblood stock. Prize winning strain. **J. A. BARNUM**, Union City, Mich.

Buff Orpington eggs from excellent laying good utility stock. \$2.50 per 15. **CLYDE GOLFREY**, Jonesville, Mich.

Useful Anconas Are you interested in results? Hogan tested, layers of large white eggs winter and summer, beauty and utility combined, hatching eggs of real quality at prices that will surprise you. Specialty breeder of S. C. Mottled Anconas Write for booklet (Useful facts about Useful Anconas) it is free. **College View Farm**, Hillsdale, Mich.

For Sale S. O. R. I. Red eggs, good stock, dark red, great layers. **G. W. VAN FOSSEN**, Hillsdale, Mich.

Hill's Barred Rocks hatching eggs from heavy-laying. Hogan tested, well barred flock. 15-\$2.50; 50-\$6.00; 100-\$10. Circular free. **Lucian Hill**, Tekonsha, Mich.

Eggs for Hatching from pure bred Light Brahmas. \$2 per setting of 15. **Mrs. E. B. WILLITS**, R. 1, Reading, Mich.

Barron's S. C. W. Leghorns, Sheppard's Anconas. Eggs, chicks, 8 week old pullets. Leghorns from M. A. C. with records from 200 to 275 eggs. Anconas from Sheppard eggs \$5 per 100; chicks \$16 per 100. **Byron Center Poultry Farm**, Byron Center, Mich.

Barred Rock Eggs for hatching, selected quality. \$2.00 per 15. \$12.00 for 100. Prepaid Parcel Post. **MR. H. HUNT**, R. 1, Dearborn, Mich.

Barred Rock Chicks 100% safe delivery. Reduced Prices. Write for circular. **H. H. PIERCE**, Jerome, Mich.

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

Chicks, for May and later delivery. Leghorns 13 1/2 S. C. Reds 15 dollars hun. Circular **FREEMPORT HATCHERY**, Box 12, Freemport, Mich.

Large Robust Cockerels White Wyandottes, Anconas, White, Partridge, Columbian and Silver Penciled Rocks, \$3.00 each. Catalog 2c. **Sheridan Poultry Yards**, R. 5, Sheridan, Mich.

Officially Certified Pedigreed

S. C. Buff Leghorns chix and eggs from 219 to 281 record stock. Money makers priced right. **HENRY DePREE**, R. 8, Box 137, Holland, Mich.

RHODE ISLAND WHITES win over all breeds at the egg laying contest. 30 eggs \$5; 50 \$8; 100 \$15 order from this ad. Some chicks H. H. JUMP, R. 5, Jackson, Mich.

S. C. Brown Leghorns Barron S. C. White Leghorns. 252-278 strain. Eggs 15-22; 30, \$3.75; 50-\$5; 100-\$9 prepaid. **Miss V. Fulton**, Gallipolis, O.

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S. C. Buff Leghorns 3 cockerels \$3 each, 5 hens \$2.50 each. **S. R. CHAMBERLAIN**, Homer, Mich.

Van's White Rocks Best in state of Missouri. Cockerels and eggs for sale from high record females. **L. R. Van AKEN**, West Plains, Mo.

White Wyandotte Eggs for Hatching. Pen No. 1, 20c each egg. \$20.00 per 100 eggs. Pen No. 2 15c each egg. \$15.00 per 100 eggs. Flock No. 1, 12c each egg. \$10.00 per 100 eggs. Free range. Prize winning stock. Book orders now. **Lone Elm Farm**, **EARLE R. MORRIS**, Flint, Mich. R. 6.

Whittaker's R. I. Red Chicks and Eggs. Both Combs. Michigan's Color and Egg strain. Prepaid and safe delivery guaranteed. Send for free catalog. **INTERLAKE FARM**, Box 39, Lawrence, Mich.

White Wyandottes 207 egg average. Hatching eggs, \$2.00 per 15. Baby chicks 28 cents each. Cockerels, hens and pullets. **FRANK DeLONG**, R. 3, Three Rivers, Mich.

White Wyandottes Winners Chicago Coliseum—Some strong, sturdy, good breeding Cockerels at \$5.00, \$7.50 and \$10.00. **H. J. RILEY**, Box M, Hillsdale, Mich.

Additional Poultry Ads. on Page 461

130 Egg Incubator and Brooder Both for \$18.25
 If Ordered Together, Freight Paid
 east of Rockies. Hot water copper tanks, double walls, dead air space, double glass doors, all set up complete, or 180 Egg Incubator and Brooder \$22.50
 FREE Catalogue describing them. Send for it TODAY or order direct.
 Wisconsin Incubator Co., Box 82 Racine, Wis.

POULTRY

For your best quality of CHICKS

Send Your Order to the

City Limits Hatchery,

Rt. 5, Box 11, Holland, Mich.

Our chicks are of the highest quality and our prices are within reach of everybody. We have S. C. W. Leghorns, S. C. Anconas, English White Leghorns, S. C. B. Leghorns, and Barred Rocks.



BABY CHICKS

We furnish pure bred chicks of the finest quality from high egg producing stock. Flocks built directly from laying contest winners. We have seventeen breeds. Write for our free illustrated catalogue and price list.
 J. W. OSSEGE HATCHERY,
 Dept. 99, Glandorf, Ohio.

Anconas Bred-to-Lay and Exhibit, baby chicks and hatching eggs. Send for mailing list. Manning's Ancona Farm, Coldwater, Mich.

B-A-B-Y-C-H-I-X

Crescent Strain S. C. White Leghorns, Black Leghorns, Brown Leghorns, Buff Leghorns, Black Minorcas, Rhode Island Reds, Barred Plymouth Rocks, (also White), Wyandottes, (Silver laced and White) and Mottled Anconas. WE HATCH eggs from flocks on range on separate farms. Send for booklet, containing much of value to poultry raisers.
 CRESCENT EGG COMPANY, Allegan, Mich.

Baby Chicks from fine stock, to produce eggs, at utility prices. Catalogue FREE.
 Lee's Poultry Farm & Hatchery, Edison, O.



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High Quality--Moderate Prices

You can pay more and get less in quality but you can't get a bigger value for the same money. That's why once a customer always a customer.

25,000 Husky Chix Weekly

from free range, carefully selected stock, hatched by experts in a real up-to-date hatchery. We specialize in 14 leading breeds. Safe delivery guaranteed by P.P. prepaid. Write for catalog.

OVIE'S POULTRY FARM & HATCHERY

34 State Street Marion, Ind.

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

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

BABY CHICKS

Hatched from free range stock. Quality and live delivery guaranteed. Write for catalogue.
 STILLWATER HATCHERY, Covington, Ohio.

BABY CHICKS

English Strain White Leghorns. The heavy laying strain at \$18.00 per 100 for April; \$16 for May. Prepaid by mail. Safe arrival guaranteed.
 LEO. M. LOEW, Dorr, Mich.

BABY CHICKS High Quality, Heavy Laying Strains. Vigorous Chicks from Hardy Stock. Prize winners at N. Y. & O. State Fairs. 35 best breeds—low prices. Safe arrival guaranteed. Cir. free.
 CRYSTAL POULTRY FARMS, Shepard Strong, 7901 Franklin Ave., Cleveland, Ohio

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.

BRED-TO-LAY S. C. White Leghorns from pedigreed males mated with hens selected by M. A. C. expert as extra heavy layers. Selected cockerels at a bargain. Falletts. The Ferguson Co., R. 6, Ann Arbor, Mich.

CHICKS THAT PAY! Insure your success this year with Mid-West Chicks. Reds, Wyandottes, Leghorns, Anconas, Minorcas, Orpingtons. Live arrival guaranteed anywhere East of the Rockies. Write now for catalog. Frank B. White, Pres.
 MID-WEST HATCHERIES
 Head Office: 655 Ft. Dearborn Bank Bldg., Chicago, Ill.



DAY OLD CHICKS HOMESTEAD FARMS
 We are now beginning to ship chicks from our Pure Breed Practical Poultry
 This is the stock that will pay on your farm. Ducklings and Hatching Eggs.
 High Quality Egg Leghorns and All Standard Breeds
 Send for 64 page illustrated Catalog, which tells how to raise chicks. Delivered post-paid.
 STATE FARMS ASSOCIATION,
 Desk 1, Kalamazoo, Michigan

CHICKS English Strain White Leghorn. Bred to lay Brown Leghorn and Anconas. Bargain prices for our quality stock kept on free range. Order now for early deliveries.
 Hillside Grove Hatchery Farm, R. 1, Holland, Mich.

Additional Farm Ads. on Page 455

Our Boys' and Girls' Department

Getting Ready for the Flock

Lesson III.—Building Poultry Houses.

POULTRY houses should face the south as sunshine is one of our cheapest and best disinfectants. Hens like sunshine, especially in the winter. The site should be convenient to the other buildings but must be well drained as dampness in a poultry house causes colds and roup.

Small colony houses can be used for small flocks. These houses are built on skids so they can be moved to different parts of the farm so the poultry can have fresh soil. When the poultry business is developed so larger houses are needed, the colony houses can be used for brooding or caring for growing stock on the range.

Small poultry houses of the shed-roof type can often be built of scrap lumber left over from the construction work on other buildings. Two piano boxes can be placed with their backs together and made into a satisfactory small poultry house.

The commercial roofing paper is better than shingles for the poultry house roof because the paper leaves no cracks. It can be spread quickly and smoothly on a warm still day. The seams can be sealed with the special preparations that often come with the rolls of paper. Sometimes the houses are entirely covered with the roofing paper to keep out draughts. Then the seams are held down with strips of wood. These strips can be painted to add to the appearance of the house.

The floor of a poultry house is very important as it is the winter range of the hens. In small houses the wooden floor will be satisfactory if it is raised from the ground as a protection from rats. The floor should then be made of strong matched lumber so it will not break through easily. It should be carefully fitted to prevent draughts from underneath the house.

Cement floors are the most satisfactory in large laying-houses. They must be made on well-drained sites so they will not be damp. Usually good drainage will result if the floor is built upon a foundation of sand or cinders about a foot or more higher than the outside ground. Earth floors are better if the earth is sand instead of garden loam. The dirt from the garden will soon turn to dust and this will be scattered all over the house when the birds scratch. It will also make the air very unhealthy for them.

There is a great deal of good literature on poultry house construction. Club Bulletin No. 6 from the M. A. C. Extension Division contains descriptions of two good poultry houses. All of the best poultry books contain much information about the building of satisfactory houses. It pays to visit the poultry buildings on other farms.

Lesson IV.—Poultry House Equipment.

ALL the equipment in the poultry house should be portable because this decreases the work of house-cleaning and leaves few places where mites and lice can hide. The nests can be built in small sections and hooked to the sides of the walls. Then they can be taken outside for sunning, spraying and refilling with clean litter. It is much better than having the nests nailed tightly to the walls or beneath the roosts.

Roosts can consist of two-by-three pieces with the edges rounded on the upper side. These can fit into sockets in the side walls so they can easily be removed. We like to nail the roosts

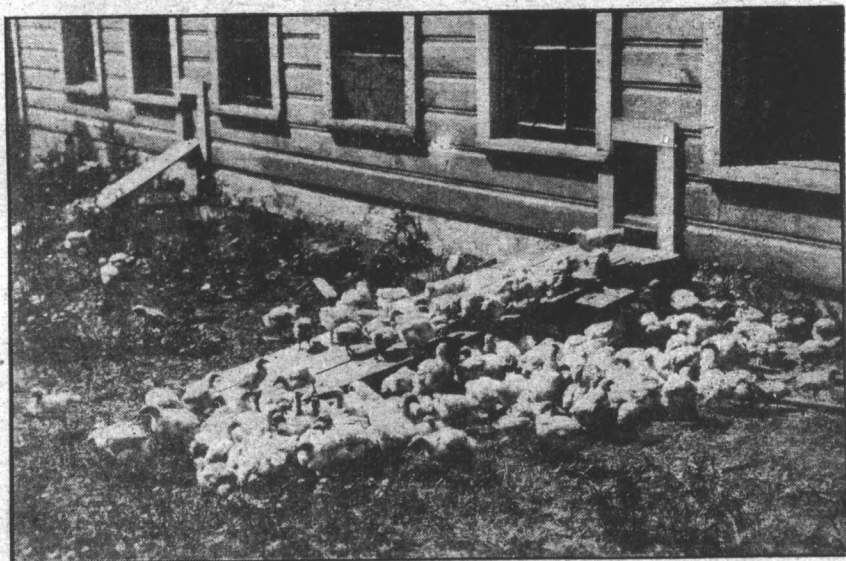
in a section of three roosts. Then the cross-pieces are hinged to the back wall of the poultry house. At cleaning time the roosting section is raised and hooked to the ceiling. Then the roosts can be painted on the under side or thoroughly sprayed. The old step-ladder roosting system is not as good as level roosts. Hens like to roost high and will always be quarreling for the top roost if the step-ladder system is used.

A small wooden table is handy to hold the water pail and sour milk crock. It keeps the litter from being scratched into the dishes. Either three small hoppers or a hopper divided into three sections should be used for char-

A short-handled hoe or scraper and a bushel basket are necessary equipment in the poultry house. Hang them on a nail close to the dropping boards and this will be a reminder that the boards need frequent cleaning to keep the house in healthful condition.

A small grain bin built inside the poultry house can hold a couple of week's supply of scratch feed. When the weather is cold and stormy such an arrangement will make it unnecessary to carry feed through the snow and it will thus save time in caring for the flock.

For catching hens a crook is useful. Obtain a piece of thick wire and bend it in the form of a crook. Attach the



Convenient Houses Add to the Pleasures of Poultry Keeping.

coal, grit and oyster shells. A larger hopper is needed for the dry mash, the size depending upon the number of hens. But make the dry mash hopper large enough to hold about two weeks supply. Then the birds will seldom be without mash, yet the poultryman will not always need to be watching the hopper. We like the broad, low-down hoppers better than tall narrow hoppers, as the broad hoppers permit more of the hens to feed at one time.

To catch a bird the crook can quickly be slipped over its leg. In that way a hen can be caught for examination without disturbing the remainder of the flock.

Sanitary water fountains are not necessary as they are more difficult to clean than galvanized pails. If the pails are occasionally scrubbed with boiling water and kept on the wooden table the water will be clean enough to be healthful.—R. G. KIRBY.

Club Work In Song

BOYS and girls put new words to well-known tunes in telling of the merry joys of their work. The poets and writers of light opera are all wrong when they try to make out that farming is a business wherein the jovial harvesters join hands with the merry villagers and dance around a May-pole, singing roundelays.

Imagine that you are attending a county club achievement day. First come the garden club boys and girls, with spades and rakes on their shoulders, and the light of achievement in their eyes. They are singing, and the strains are the same as in the "Over There" song that went from America to Chateau-Thierry and back again. Listen:

"Johnnie, get your hoe, get your hoe, get your hoe;
 Mary, dig your row, dig your row, dig your row.
 Down to business, girls and boys,
 Learn to know the gardener's joys.
 Uncle Sam's in need, pull the weed,
 plant the seed.
 While the sunbeams lurk, do not shirk,
 get to work—

All the lads must spade the ground,
 All the girls must hustle 'round!"
 All together in the chorus:
 "Over there, over there,
 Send the word, send the word over there,

That the lads are hoeing, the girls are sowing,
 The crops are growing everywhere.
 Each a garden must prepare,
 Do your bit so that all of us can share.
 With the boys, with the boys
 Who will not come back 'till it's over,
 over there.

Next is another group. You know they are pig club boys, for to the tune of "Row, Row, Row Your Boat," they are singing:

"Grow, grow, grow a pig,
 Fatter every day.
 Merrily, merrily, cheerily, cheerily,
 Half our work is play."
 Then come rosy-cheeked girls, all in white aprons and snowy caps. They catch what the boys are singing and they reply:

"Can, can, all you can,
 Can and put away.
 Merrily, merrily, cheerily, cheerily,
 Half our work is play."
 Close behind them are the sewing club girls, and now they are singing:
 "Sew, sew, sew a seam,
 Sew the time away.
 Merrily, merrily, cheerily, cheerily,
 Half our work is play!"
 And so on with the various groups.

Truly, when the correct incentive and leadership are provided, through Boys' and Girls' Club Work, farm and home activities may become an interesting game.

CLUB SCHOLARSHIPS ARE ANNOUNCED.

THE Boys' and Girls' Club scholarships at M. A. C., amounting to \$50 each, won by twenty-two lads and lassies of Michigan, have just been announced by R. A. Turner, state club leader. Awards are made in accordance with a plan inaugurated two years ago when the board of agriculture decided that the boy or girl adjudged champion in his or her particular line of club activity should be granted the matriculation and incidental fees for the first year of college.

Following is the roll of honor: Archie Newberg, Grand Marais, handicraft; Pearl La Cosse, Perkins, garment making; Bernice Miller, Coldwater, garment making; Fern Tyndall, of Branch, garment making; Katherine Brown, Coldwater, garment making; Roselene McMurray, Montgomery, canning; Louise Spicer, Ypsilanti, canning; Mable Reppert, of Montgomery, canning; Howard McPherson, Wyandotte, poultry; Donald Wilson, Grand Rapids, pig raising; Ward Parker, Vermontville, pig raising; Carl Johnson, Ironwood, calf raising; Calvin Galloway, Wyandotte, calf raising; Miles Beamer, Blissfield, calf raising; Wilson Winegar, Charlotte, cow and calf; John Musgrave, McMillan, sheep; Forrest Bedell, Flint, corn; Lester Weaver, Chesaning, bean; Theodore Stenson, potato; Marjorie Ashley, Battle Creek, gardening; Arlene Howland, Coldwater, cooking.

Two regular students and three short-course men are now attending M. A. C. under the scholarship plan. They are: Kenneth Ousterhout, Hillsdale, '23; Elon Spotts, Hillsdale, '24; Calvin Galloway, Wyandotte; Clifford Lahyer, Napoleon, and Rae White, Alma, all short-course.—HENSCHAW.

DAIRYMEN WANT SPECIAL DIVISION.

A DAIRY division of the State Department of Agriculture, now pending in the legislature, will be sought by the Michigan Allied Dairy Association in case that bill becomes a law, according to reports of the annual meeting held at Lansing, March 16. All officers were reelected and a program was discussed for advancing the interests of Michigan dairymen.

The dairy division proposed by the Allied Dairy Association would empower the division to enforce the dairy laws and to promote and encourage the dairy industry throughout the state. In event of the bill providing for the State Department of Agriculture becoming a law, which is considered very likely by dairymen, the association will seek a conference with the governor, commissioner of agriculture and state administrative board and lay before them the importance of the dairy industry to Michigan, the scope of the Michigan Allied Dairy Association and seek the assistance of the state officials in improving dairy conditions in Michigan, and the quality of dairy products marketed in the state.

The dairy association intimated that it would suggest a \$65,000 appropriation for the first year's finances of the dairy division.

Officers reelected by the association were: President, Glen Overton, Allegan; vice-president, E. G. Pray, Charlotte; general secretary, H. D. Wendt, Lansing; treasurer, N. P. Hull, Lansing.

The association will urge that the dairy laws of the state be codified, and that certain amendments be made to existing laws which would bring them up to date. Dairy statistics introduced at the meeting stated that there were 873,000 cows in Michigan in 1920 and that they produced a total of 3,492,000,000 pounds of milk, valued at \$104,760,000.

SCHUMACHER

PRICES ARE DOWN

DOWN go Schumacher Feed prices to pre-war basis—
DOWN to a level with the prices you get for the products you sell—
DOWN where Schumacher is a much cheaper feed than ground corn or oats, middlings or bran—
DOWN to a point where you cannot afford to miss the BIG SAVING today's prices give you on a feed that has

MORE food value than bran or middlings.
MORE food value than oats.
MORE food value than wheat feeds.
MORE food value than brewer's grains.

The Cheapest Feed to Feed

Therefore, don't let the fact that you have plenty of corn or oats keep you from buying Schumacher Feed at today's surprisingly low prices. Fed with gluten and cottonseed meal as your protein concentrates, it makes the **cheapest feed you can feed**. If you have a surplus of home-grown grain, it will pay you to sell some of it and buy Schumacher Feed. For instance:

Take the question of moisture. 95% of the corn inspected for market grading contains 19½% water—19½ lbs. of water in every 100 lbs. of corn. Better to sell water than to feed it, don't you think? Schumacher Feed is kiln-dried. It is ALL feed.

Now, take the question of digestibility. Schumacher contains 4% more digestible matter than oats; 6½% more than middlings; 12½% more than brewer's grains; 21% more than bran. It is made from the choicest feeding parts of Corn, Oats, Barley, Wheat, with Hominy, Wheat Flour, Middlings and Linseed Meal added, finely ground, scientifically blended.

Start Reducing Your Feed Costs Today by buying Schumacher and you will also start better results from your cows. If your dealer cannot supply you, write to us.

The Quaker Oats Company Address: Chicago, U.S.A.



"Rock Bottom" Prices

Kalamazoo Tile and Wood Silos at "Rock Bottom" prices. Our silo guide explains it all. Tells experiences of silo engineers who have built Kalamazoo Silos for thirty (30) years. Tells how they made

Kalamazoo

The Record Holders

This book tells why these 30-year old Kalamazoo Silos are still giving good service. How both Kalamazoo Wood and Tile Silos keep ensilage in most nutritious condition—their special construction. Tells how YOU can get a Kalamazoo and how thousands of farmers are lifting the mortgage on their farms in this way.

Send us your name. Don't delay. Tomorrow never comes. Write today.

Kalamazoo Tank & Silo Co.
Dept. 2235 Kalamazoo, Mich.
Our Kalamazoo Ensilage Cutter with its Center Shear Cut is well worth looking up.

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Mrs. A. Kisselbach, E. St. Louis, says: "Can honestly say I have had great success with K. & G. Preservative." Mrs. J. M. Lilledahl, Essex, Iowa: "I have found your egg preservative extremely satisfactory." Mrs. S. R. Shinkel, Mitchell, S. D.: "My eggs kept just fine. Shall use your preparation next year sure." Mrs. E. S. Summerlick, 4635 Calumet Ave., Chicago: "I have used your preservative two years. Have used many egg solutions but find K. & G. more satisfactory."

Now is the time to begin preserving eggs. April eggs will be worth twice as much to you next winter. Begin right now and let K. & G. Egg Preservative make money for you. Write today to the K. & G. Laboratories Co., Dept. F., 338 E. 51st St., Chicago, Ill. Send 50¢ and get big package prepaid. Enough to preserve 25 dozen eggs. Write today—Now.

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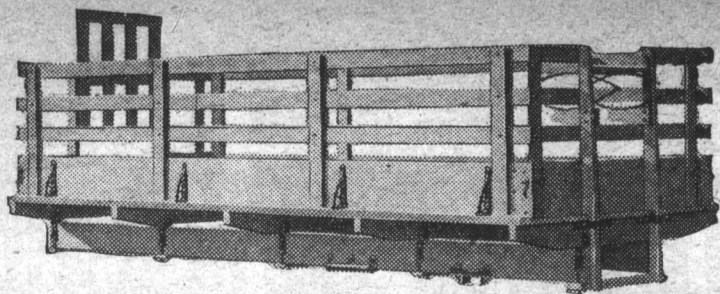
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3 Handy Wagon Beds

Make Them Yourself—Free Plans Tell How

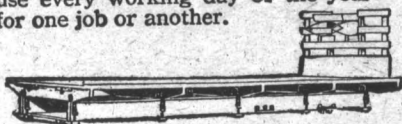
Why bother with heavy wagon beds that take two men to lift off and on?

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The beds are made in sections. It's easier and quicker for one man to lift in place a single section than for two men to carry and change a heavy, clumsy bed of the ordinary kind.

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Please send me without obligation your free plans telling how to make A-P combination wagon beds. Also tell me the name of nearest dealer who handles the hardware sets.

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If your dealer does not handle it we will deliver at above prices. Send no money—you can pay on delivery. Satisfaction guaranteed.

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For Sale Write Dr. W. Austin Ewalt, Mt. Clemens, Mich., for those beautifully marked Sable and White Scotch Collie Puppies; natural heelers from trained stock; pedigree furnished. Will also buy thoroughbred Collie and Airedale puppies for training

Trained American Fox Hounds Rabbit and Skunk dogs all ages. Send stamp.

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This Silo Is the Real Mortgage Lifter

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Write today for catalog and big commission proposition. **NAPPANEE LUMBER & MANUFACTURING CO.** NAPPANEE, IND.

DAIRY NOTES.

(Continued from page 443).

go wrong. The box stall is the dairyman's hospital and often a very necessary part of the farm equipment.

Some farmers who began using butter last fall instead of oleo have found a marked improvement in their appetites and have spent a healthy winter. Possibly the butter is not all responsible but it is true that good butter makes the bread more appetizing for children as well as grown folks and butter at its present price is certainly more of a health-giving necessity than a luxury. I know of some farmers who would as soon think of selling all their potatoes and buying back man-gels as they would of selling all their butter and buying oleo.—R. G. K.

cock test. A prospective buyer looking over a herd in an association has all the advantages of buying in a herd of animals with records registered for production. With the approval of Mr. Hint, who has charge of advanced registry work at the college, association testers may now conduct semi-official tests. Other lines of work for testers to carry on have also been suggested such as farm records, etc., which shows an unlimited field to work in. Jackson county dairymen feel relieved that they have not put off longer the establishment of a cow-testing association and hope to have two more running before the year is up.—S. J. B.

HOLDS THAT DAIRYMEN DID NOT VIOLATE ANTI-TRUST LAWS.

JACKSON COUNTY DAIRY NOTES.

UNDER the direction of Mr. Brownell, from M. A. C. Dairy Department, and Mr. Ballard, county agent, the dairymen of Jackson county organized a cow-testing association for the purpose of weeding out their boarder cows and improving dairying in Jackson county.

In general, dairymen of this county are paving the way for what bids fair

ALL members of milk producers' cooperative associations will be interested in the outcome of the Louisiana Dairymen's Cooperative Association case in the federal court. Not long ago the officials of this organization were indicted under the anti-trust law. A demurrer was filed against the indictment and an oral argument was made. The demurrer held that under Section 6 of the Clayton amendment the Louisiana dairymen did not violate the anti-trust law. The judge has



Allied Dairy Interests Make Interesting Exhibit at Grand Rapids.

to be a stampede to get into cow-testing work. Like Jackson county farmers, dairymen all over the state are waking up to the fact that normalcy is about with us and we can no longer demand average cost of production but must be guided in our sales by the laws of supply and demand. In order to remain in dairying, efficiency is the keynote. Over-production and the general lowering of prices has tended to start farmers thinking, more than ever before. Prices are falling in the very face of organization intended by the farm to control price. From this it is becoming more evident every day that besides organization for marketing there must be organization for efficiency of production.

No other organization serves this purpose so well as the cow-testing association. Not only do you determine the animals which are paying returns but you also determine those animals which do not pay, thus giving an opportunity to discard part of the producing herd and control the surplus of dairy products on the market.

A year ago quantity of production was the popular problem and the herd was studied as a unit of efficiency. Today quantity of production can be considered only as it pertains to the individual animal for it is the individual animal, and there only, that the profitable herd can be determined. Dairymen have given up judging the dairy cow by looks and guesswork, but now rely only on the scales and the Bab-

handed down a decision sustaining the demurrer and dismissing the indictment. The case was before Federal District Judge Alfred R. Foster, of New Orleans, and the dairymen were represented by Edgar M. Cahn, with John D. Miller, of the Dairymen's League, assisting as counsel. The claim is made that this is the first time on record that a non-profit, non-stock agricultural cooperative association has been indicted under the anti-trust law.

NO ANNOUNCEMENT ON BUTTER TAX.

COMMISSIONER of Internal Revenue William M. Williams has as yet made no announcement of any change in the so-called adulterated butter ruling of the treasury which is to go into effect on April 1. It is probable that the butter interests, especially the creamery men, will ask for an injunction to prevent the putting of the ruling into effect. The ruling will be stubbornly contested in the courts.

Half broken down fences help to teach the cows to be fence jumpers. Heifers that are constantly jumping the fences in easy places are difficult to break in later life and nothing is more wasteful of time and patience than constantly chasing your cattle out of your neighbor's crops or your own. Good fencing is necessary equipment for the dairyman and poor fencing is a constant risk.

Minerals in Swine Ration

By George H. Conn

IT is true that mineral requirements for swine is practically a new thing in feeding swine, yet it promises to be one of the foremost steps in improved methods of securing maximum growth and health. Practical feeders for years have been allowing their hogs access to wood ashes and to charcoal or soft coal and the like for the supplying of these minerals. Such substances have been very good, and did supply some very essential material, and yet in the few experiments that are being made at many of the stations, at this time will bring out some very valuable facts. Up to this time it seems that about the same errors are being made in the use of minerals to swine that were originally made in the earlier feeding tests, in which they attempted to argue from the complex to the simple rather than from the simple to the complex, which seems to be the logical way to approach these subjects. It took scientists many years to awaken to the fact that some things about our common feeding practices would never be understood until we began with the use of a very simple ration and then worked into a complex one, so that an accurate check could be made upon the true value of various feeding materials, under varying conditions. The wonderful discoveries made during the past decade have been ample proof that this was the proper method of making the feeding trails and more actual history as to the value of feeding materials than has been accomplished during several such periods previous to this time.

IT is a common practice for some swine feeders to feed certain minerals not for any specific action which they expect to obtain, but simply because it has been a time-honored custom. Such agents as sulphur, copper, as, charcoal, seem to have very little, if any, beneficial action for swine, and may, if not given properly, actually prove harmful, and yet swine breeders have long used them in their tonic and mineral mixtures. We must depend more on our late experiments to tell us about these materials. At this time sulphur is rarely used as a medicine by veterinarians, and then usually in an ointment for its effect in killing parasites of the skin. If it is taken into the animal's body in fairly large doses over a long period it may bring about a serious blood condition. It turns the feces, or manure, very dark in color and gives it a very foul odor, and should be given in very small amounts until we learn more about it. Tests are being conducted at the Iowa station, and while one has been completed and tended to show that it had some value when fed under certain conditions, it will require further tests before swine men can begin its use with a feeling of safety.

Copperas, or iron sulphate, is a common remedy, and while it may be given in small quantities for some time, it can not safely be given in very large doses; our latest information on iron is that it is a food rather than a tonic or a medicine, and later day veterinarians use it in that way. It is also thought to be a worm destroyer, but tests have proven this without any foundation; it is very readily changed into another form when exposed to the ordinary atmosphere and if it was to be given it should be kept as nearly dry as possible. With the knowledge that we have of this material at this time it is doubtful if it is advisable to feed it to swine.

Charcoal is found in two forms, that which is made from wood and that from bones. The action of charcoal is that of an absorbent, and its function

in the intestinal tract is to absorb any methane gas that may be generated in the intestines. This can be of value only in cases of fermentation, and then only for a very short period of time. Extensive tests have proven that it is eliminated from the body in the same form that it is taken in and has but very little use in a swine mixture.

THE minerals that are most likely to be deficient are calcium or lime, chlorine, sodium and phosphorus. These are the elements that enter into the formation of the skeleton in the larger amounts. It may be possible that iodine is sometimes needed, but this only in sections where there are hairless pigs, and that is due to the fact that in some sections the soil is depleted in these elements and therefore the crops do not contain a normal amount. This can be easily and cheaply supplied. The following materials furnish the minerals commonly used very cheaply and at a very slight cost: Sodium chloride or common salt, ground rock phosphate, ground bone meal, either raw or steamed, wood ashes, and many others. Common salt or sodium chloride furnishes both sodium and chlorine and in sufficient quantities. Steamed bone meal or ground raw bone meal furnishes both calcium or lime and phosphorus; wood ashes or kainit furnish potash, but this is not so often needed. A very good mixture consists of equal parts of salt and steamed bone meal; another of salt and raw bone meal; another of salt and wood ashes; another of salt and raw rock phosphate very finely ground. All of these may be mixed equal parts and fed in a self-feeder.

Animals will consume about one pound of such mixtures each month; this can be provided for in this way: Mix a pound of the mixture with an amount of tankage that they will eat in about a month. If they are eating about fifty pounds of tankage per month, then add two pounds of the mixture to each one hundred pounds of tankage and you are certain in this way that they get that amount. If they are eating more, increase it, and if less, decrease it. This should be very well mixed and fed in a self-feeder; most animals will eat about this amount of it, if it is fed alone in a self-feeder; this will depend somewhat upon the individual.

IT is not advisable to attempt to furnish all the minerals that are needed by the animal in this way, but there are certain feeds that are very rich in minerals, and much of the minerals should be supplied through them. Among these feeds are alfalfa and clover hay, bran, cowpeas and soy beans. The hay can be, and should be, fed to brood sows in a rack during the winter months, or when they are not on pasture; sows will consume about one to one and one-fourth pounds per each one hundred pounds of body weight per day when it is fed in this way; the use of pasture crops, such as alfalfa, clover, rape and the like, also provide large amounts of minerals for the breeding and growing animals. The mineral requirements for swine need occasion the breeder no alarm; it can be very easily handled, and quite inexpensively also; all it requires is a little good judgment in the selection of feeds, and possibly some simple mixtures that we have outlined in this article.

Two hundred birds were entered at the exhibition of the Gogebic Range Poultry Association at Ironwood, on March 3-4. They included both standard and fancy types.



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Help Your Cows Increase Your Profits

EVERY dairyman knows he can't make a profit on milk unless he feeds for it.

And unless he weighs his feed and weighs the milk from each cow he can't know the profit he makes.

Buffalo Corn Gluten Feed will greatly increase your milk yield.

Buffalo Corn Gluten Feed contains concentrated corn protein in a highly digestible form. It is used by successful dairymen all over the country.

Get a supply of Buffalo Corn Gluten Feed. Mix three parts of Buffalo Corn Gluten Feed with one part of wheat bran, or one part of ground oats and one part beet pulp.

You can mix a whole ton in a half hour—the most profitable half hour you ever spent.

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

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33.60 lbs. butter average of gddams of 8 mo. old bull. Can have him for present cost of service. **Liberty Band or note.** **M. L. McLAULIN,** Redford, Mich.

"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 herd is rich in the blood of Colantha 4ths Johanna, the only cow that ever held all world's records in every division from one day to one year at the same time. She produced 651.70 lbs. milk in 7 days. We are offering for sale a bull, whose dam exceeds this record by over 7 1/2 lbs. in 7 days.

His dam's records are:—
Milk 1 Day 100.1 lbs.
Milk 7 Days 699.3 lbs.
Butter 7 Days 26.31 lbs.

His name is **KING VALE CORNUCOPIA WAYNE, No. 312599**

Born February 8, 1920

His dam and sire's two nearest dams average
Butter 7 Days 33.02 lbs.
Milk 7 Days 607.3 lbs.

Handsomely marked about one third white.
\$250.00 f. o. b. Howell.
McPHERSON FARMS CO., Howell, Mich.

All herds under U. S. Supervision.

Cluny Stock Farm

Offers

Cluny Konigen Colantha Silver 326205

Born May 29, 1920

A white bull with a few black spots.
His sire a 30 lb. son of King Segis Pontiac Konigen.
Sire's 7 nearest dams average 32.301 lbs. butter 624.1 lbs. milk in 7 days.

His dam has a Jr. 3 year old record of 17,683 lbs. butter from 418.7 lb. milk and is a granddaughter of Colantha Johanna Lad.
2nd dam—a 21 lb. cow that our barn records show milk over 145,000 lbs. in 14 milking periods producing 15 calves.

Pedigree on application.
Price \$250.00. Federal Accredited Herd.

R. Bruce McPherson, Howell, Mich.

For Sale \$475.00

A Young Bull. Cash or Terms

From Junior two year old A. R. O. Heifer, 17.68, born February 10, 1920, sired by

MODEL KING SEGIS OLISTA

Whose grand dam, GLISTA ERNESTINE, has six times made better than thirty pounds of butter. This bull is bound to transmit high milk production.

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

WANTED Reg. Holstein Females. Send full particulars and price. Address Box K-326 care Michigan Farmer, Detroit, 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.
616 So. Westnidge Ave.,
Kalamazoo, Michigan

HEREFORDS

Two high class, registered bulls, nearly a year old, for sale. One double standard, and one with horns, good size, color, and markings. Both the making of show bulls.

COLE & GARDNER,
HUDSON, MICH.

FOR SALE 25 Hereford Heifers 2 and 3 years old and one Hereford Bull 3 yrs. old. These are fine cattle and in good shape, are all with calf. Write **NATHAN L. BICKNELL,** Clare, Mich.

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

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, Capas, Mich.

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, **COLON 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 Pogs 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.

Registered Jersey Bulls ready for service from high producing dams. **R. B. FOWLER,** Hartford, Mich.

Jerseys Registered high producing stock. Bull calves ten dollars. Tuberculin tested. **TEN HAVE FARM,** R. 2, Holland, Mich.

Registered Shorthorns, Bulls and heifers, prices within reach of all. **G. R. DESHETTER,** R. 4, Tecumseh, 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.

Stop! Look! Listen!

Have you a catalog of the Shorthorn Sale to be held at M. A. C. Feb. 25th at 1 P. M. We are listing four valuable females and two show bulls.

Richland Farms,
C. H. Prescott & Sons, Tawas City, Mich.

The Maple's Shorthorns

Kirklevington Lad, by Imp. Hartford Welfare, in service. Stock for sale.

J. V. WISE, Gobleville, Mich.

One Yearling Shorthorn Bull calf registered, for \$125. **M. G. MOSHER & SONS,** Osseo, 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.

Branch County Farm

Breeders of

Polled Shorthorn Cattle

Young Bulls For Sale

Several well bred herd bull prospects.
GEO. E. BURDICK, Mgr., Coldwater, Mich.

We now have

FIVE BRED HEIFERS

that we will sell cheap if taken at once. Inquire about them or better come and see them.
CARR BROS. & CO., Bad Axe, 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. LANGBORN & SON,** Bad Axe, Mich.

Shorthorns Scotch and Scotch topped. Herd bull prospects 1 roan 16 mo. old; 1 red 8 mo. Also four yr. old roan cow. All stock registered and guaranteed right. **J. A. WILK & SON,** Alma, 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.

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

Shorthorns. Bull calves for sale from the best milking blood obtainable. **ROSEMARY FARMS,** Williamston, Mich.

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

HOGS

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.

Duroc Boars at bargain prices large growthy hogs 15 months old at \$60. Will send O. D. and register in the buyers name. Orders booked for Apr. pigs to deliver June 1st. **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.

A FEW CHOICE Duroc fall boars for sale. **MATT MATTHYSSE,** R. 3, Byron Center, Mich.

DUROCS WITH QUALITY

Spring pigs by Walt's Orton, 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 SOWS and gilts bred to Orion King No. 169259 Son of the \$10,000 boar owned by Longview Farm, Le Summit, Mo. also young boars ready for service out of good sows. Apply **THE JENNINGS FARM,** Bailey, Mich.

Duroc Jersey Sows and Gilts bred for March, April, May farrow. Also a few spring boars. Best of blood lines and splendid individuals. Satisfaction guaranteed. Write for pedigree and prices, or better come and see, visitors welcome. **Thos. Underhill & Son,** Salem, Mich.

Buy Pigs Now. Reg. Duroc pigs crated and delivered to express station for \$20 each. Choice stock sired by State Fair winners and weighing near 100 lbs. each. Write for particulars. **Michigan Farm, Pavilion, Mich.**

DUROC Jerseys. Boars for spring service, heavy boned type, from the most popular blood lines at reasonable prices. Partridge Rock eggs from best laying strain \$2 per 5. **Drott & Berns,** Monroe, Mich.

A FEW CHOICE Bred gilts for sale. **Carey U. Edmonds,** Hastings, Mich.

DUROC JERSEYS few gilts bred for April farrow. Good ones. **E. D. HEYDENBERG,** Wayland, Mich.

DUROCS Bred sows all sold. A few choice fall boars for sale. **W. C. TAYLOR,** Milan, Mich.

O. I. C. Swine Strictly Big Type with quality. A few gilts bred for last of April, and May farrow. A few Sept. and Oct. fall pigs either sex. Extra good ones. Of our State Fair prize winning blood lines. Will ship O. O. D. and record them free. **NEWMAN'S STOCK FARM,** R. 1, Marietta, Mich.

O. I. C's Fall pigs by C. C. 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 O. O. D. **H. W. MANN,** Dansville, Mich.

O. I. C's Choice gilts for April and May farrow, also fall pigs. Booking orders for spring pigs. **A. J. BARKER & SON,** Belmont, Mich.

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

O. I. C's. 8 last spring gilts due to farrow in Mar. and Apr. some tried sows service boars and last fall pigs, not akin, big growthy stock. Registered free. City-Phone 124, Otto B. Schulze, Nashville, Mich.

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.

Indigestion.—My six-year-old cow came fresh three weeks ago. She did well for ten days, but since then her milk has an acid odor. F. C., Decker, Mich.—Give her a dessertspoonful of hyposulphite of soda in feed three times a day. Change her feed.

Chronic Indigestion.—When cows are turned out they are inclined to chew wood. W. S. Snover, Mich.—Mix equal parts of bicarbonate of soda, ginger, gentian, salt and powdered wood charcoal. Give each cow two tablespoonfuls in feed twice a day. Feed some roots.

Barren Cows—Paralysis.—I have ten cows; none of them will seemingly get with calf. Failing to get with calf when bred to my neighbor's bull, I bought one of my own without any better results. The cows are all in fair condition. I have a sow that has no use of hind legs. Our local veterinarian tells me she has rheumatism. For three weeks she has been in this condition. H. R., Lapeer, Mich.—Purchase a fountain syringe, wash out cow's vagina with soap and tepid water, (use a good quality of soap), then inject the following yeast lotion, made by dissolving a cake of compressed yeast in one quart of tepid water, but let it stand in warm room for two hours before you apply it. Treat every cow daily and let us know the result. Feed sow less corn, more oats, oil meal, tankage and roots. Give her ten grains of sodium salicylate in feed two or three times a day. Apply mustard and water to back three times a week.

Impotency.—Ever since my bull was eleven months old we have been breeding him to cows, but he fails to get any of them with calf. He seems to perform the act all right and is now fourteen months old. P. S., Cheboygan, Mich.—This form of impotency is due to the fact that living, virile spermatazoa are not discharged by the young bull at time of service. Young males should never be allowed to do too much service within a short period of time. I know of no better plan than to ascertain whether the discharged semen is fertile or not, but to do so you need a microscope.

Infected Udders.—I am having considerable trouble with my cows. Several of their udders are affected. We get stringy milk from some, and others appear congested. Can we safely feed this milk to children? Some of the cows have only had one slight attack. E. H. C., Coldwater, Mich.—Don't feed children milk from cows that have infected or diseased udders. Select milk from healthy cows to feed to children. Clean and disinfect stable, creamery, and milking utensils and give each cow a tablespoonful of bicarbonate of soda in each feed. Apply iodine ointment to diseased portion of udder and milk cow clean three times a day.

Nodular Disease.—For the past four winters I have lost from one to four sheep, and about the only symptoms they show is to stand stretched out and die of general weakness. What ailed them? C. T., Romeo, Mich.—Nodular disease is a parasitic bowel ailment which is incurable, and I might add, quite prevalent. Mix some powdered gentian in their ground feed once a day.

Indigestion.—Occasionally one of my sheep will act as if in pain, becomes uneasy, will stretch and after a time gets all right. J. D. P., Eagle, Mich.—Mix equal parts of ginger, baking soda and salt together, a teaspoonful is enough for three sheep at a dose and it can be mixed with ground oats; give them some twice a day.

Chronic Shoulder Lameness.—When out in pasture last July my five-year-old horse sprained or bruised his shoulder; since then he has been lame. The veterinarian injected medicine underneath skin. Some time later an abscess formed; later still we blistered the shoulder four different times, but he is no better. Can he be cured? W. J. P., Newaygo, Mich.—The writer is inclined to believe your horse incurable. He has had long rest and right kind of treatment, but shows no particular improvement. Every two weeks apply a blister to lower portion of his shoulder.

Johne's Disease.—I have a Guernsey bull twelve months old that has been scouring ever since last November. He is fed corn and mixed hay, but has a poor appetite. Will he get well after I turn him onto grass? F. L. H., Union City, Mich.—You have a case of chronic bacterial dysentery, for which no remedy has as yet been discovered. For fear that you might have more cases I advise you to slaughter him. His carcass is perhaps fit for food. If you keep him, have him tuberculin tested by a qualified veterinarian.

Indigestion.—About seven days ago my four-year-old cow seemingly lost her appetite for grain, but eats roughage fairly well. C. J. S., Rockford, Mich.—Give her a tablespoonful of powdered gentian and a teaspoonful of salt twice a day. Feed her some roots.

Strong Butter.—My cow seems to be healthy, but the butter made from her cream will not keep fresh for more than three or four days. It seem to have strong taste. F. K. W., Lansing, Mich.—Change feed, clean stable and be sure that milking utensils are very clean; store butter in clean place. Give cow a teaspoonful of hyposulphite of soda twice daily.

Chronic Stocking.—The hind legs of our four-year-old mare has been stockied all winter and I thought might be due to lack of exercise. Have applied liniment and exercised her, but she is worse. A. M. A., Attica, Mich.—Give her one dram of potassium iodide in feed or in drinking water twice a day. Hand-rub legs upward twice daily and don't feed her much grain until she works.

LEGAL LINE FENCE.

The fence between me and my neighbor is made of four barb wires and has held cattle and horses in pasture for years. Now another party has bought the adjoining place and wants to pasture sheep. He came to me and wanted me to put on a new fence that will turn sheep. Am I in duty bound to put up a fence that will turn sheep?—B. F.

The statute declares that all fences four and a half feet high, in good repair, consisting of rails, boards, wire, or other things which shall be considered equivalent thereto, in the judgment of the fence viewers, shall be deemed a legal and sufficient fence. The supreme court has held the statute to mean such a fence as will turn the animals usually kept on the farm and restrained by fences, which of course, includes sheep. If the fence is not built upon request the neighbor can complain to the fence viewers, get an order for a fence that will turn sheep, and if it is not built may build it himself and have the cost assessed against the opposite party and collect it as a part of his taxes. If the fence has never been divided the fence viewers will also make division and determine which part shall be maintained by each party, after proper petition and hearing.—J. R. R.

FISHING IN GREAT LAKES.

In a recent talk on the Michigan fish industry of the great lakes, Dr. John Lowe, head of the department of biology, of the Northern State Normal School, a fish expert, pointed out that, while the quantity of fish in lake Michigan is well maintained in spite of the large development of commercial fishing in its waters, the fish supply of Lake Superior is dwindling, although the number of fishermen is much smaller. Dr. Lowe informed his hearers that fish grow faster in Lake Michigan than in Lake Superior. Trout in Lake Michigan one year old weigh, he says, from eight to nine ounces, while in Lake Superior they will not ordinarily run above three ounces. This he attributes to the lower temperature and smaller supply of vegetable matter found in the world's largest freshwater lake.

A recently published report of the United States Bureau of Fisheries relating to the fishery industries of the United States, gives the number of persons engaged in the fisheries of Lake Superior as 1,348 in 1917, and of Lake Michigan as 3,313.—CHASE.



GEHL

An Ensilage Cutter that is remarkable for its fine clean cutting capacity, durability, safety and light power requirements.

Any 8-16 Tractor Runs a Gehl 17

Due to its separate control of cutter head and blower speeds the Gehl Cutter never wastes power on any silo—has six fan low speed blower, heavy all steel frame, positive safety device, and a self feeder that

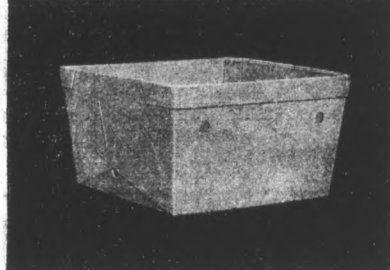
Requires No Man at the Feed Table

Here is an example of economy—a machine that not only fills your silo, but can also grind alfalfa hay—dry corn stalks, soy beans, sweet clover or any other form of dry roughage. This means a saving of from 20 per cent to 50 per cent.

Our new catalog gives complete information about Gehl Cutters and some useful ideas about conserving and getting more profits out of dry feeds. Write today.

GEHL BROS. MFG. CO.
404 SOUTH WATER STREET
WEST BEND, WIS.

BERRY GROWERS' PROBLEMS



Problem one. "I have a small patch of berries in my garden. We always have a few bushels more than we can use. How can I realize the most on them?"

Answer: Send us \$1.95 for 200 waxlined paper berry baskets postpaid to your address. (Note. Postpaid prices apply only to points within 150 miles of Lansing)

Problem two. I grow strawberries for market, and need a thousand or more baskets. I wish to get them with the least amount of trouble. Am on R. F. D. line and main traveled highway, and sell in town and to automobilists. What can you do for me?"

Answer: Send us \$8.25 for 1,000 waxlined paper berry baskets delivered to your door postpaid.

Problem three. "I need 10,000 berry baskets. I do not want to be caught short when the season opens. What do you advise?"

Answer: Send in your order at once with \$67.50 for 10,000 waxlined paper berry baskets to be sent by express f. o. b. cars Lansing.

How about your needs? Let us take care of you, and order EARLY. The waxlined paper berry basket is made of a heavy paraffined paper, and they are neat and clean. Our price list for the asking.

M. H. Hunt & Son, Box 525, Lansing, Mich.

DRIED BEET PULP

Now So Cheap

Milk Producers cannot afford to do without it.

Nothing but grass will produce milk like Dried Beet Pulp.

T. F. MARSTON,
Bay City, Michigan



BICKMORE'S GALL CURE

Used by the Family

Used extensively to relieve bed sores, itching piles, cracked hands, etc. If a white ointment is desired ask for our XYZ Skin Ointment.

The Bickmore Co.
Box 154
Old Town, Me.

SHEEP.

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.

400 Breeding Ewes For Sale, with lambs by sides, mostly black faced. ALMOND B. CHAPMAN, South Rockwood, Mich.

HOGS

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.



Raise Chester Whites?

Like This
the original big producers

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

G. S. BENJAMIN, R. F. D. 10, Portland, Michigan.

Saginaw Valley Herd. Prize winning O. I. C's. Jan. and Feb. pigs, priced reasonable. J. Gibson, Fosters, Mich.

Big Type Polands. Some very choice fall boars, ready for spring service for sale. They are sired by The Clansman, dam, the \$1025 Miss Columbia, a littermate to the \$40,000 The Yankee. Also a few choice boars by The Clansman, son of The Clansman.

WESLEY HILE, Ionia, Mich.

Big Type Polands. Bred sows all sold, but have some good herd boar prospects, fall boars weighing 175 lbs. Sired by the Arctic. Call or write **PORUS HOVER, Akron, 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. S. P. C. a few choice boars at farmers prices, 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.

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, FULCHER & 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 P. C. some very choice boars doublelimb, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

Bg Type Poland Chinas at lowest prices. Both sex, all ages, and bred sows and gilts.

G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Large Type Poland Chinas. Nothing for sale at present.

A. A. FELDKAMP, R. 2, Manchester, Mich.

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

POLAND China Bred Sows and Gilts at bargain prices, also spring boars and fall pigs, either sex.

CLYDE FISHER, R. 3, St. Louis, Michigan

Leonard's Big Type P. C. Sows bred to Orange Clansman. Fall boar pigs weigh 175 lbs. Real herd boar prospects. Call or write. E. R. Leonard, R. 3, St. Louis, Mich.

PINE GROVE HAMPSHIRE

We are offering a few tried sows bred for March and April farrow. These sows are all closely related to our winning show herd and of popular blood lines, and the price! Way Down!

Geo. Coupar & Sons, Marlette, Mich.

Hampshires Bred gilts all sold. Spring and fall boar pigs at a bargain.

JOHN W. SNYDER, R. 4, St. Johns, Mich.

Bred Sows and Gilts \$50 and up, for April, May and June farrow. Have a few good fall pigs at reasonable prices for sale.

M. G. MOSHER & SONS, Osseo, Mich.

HORSES

Percheron Stallions and mares at reasonable prices; inspection invited.

F. L. KING & SON, Charlotte, Mich.

LATEST MARKET REPORTS

GRAIN QUOTATIONS

Tuesday, March 29.

Wheat.

Detroit.—Cash No. 2 red \$1.61; May \$1.57; No. 2 white and No. 2 mixed \$1.59.

Chicago.—No. 4 hard \$1.45½; May \$1.43.

Corn.

Detroit.—Cash No. 3 yellow 66c; No. 4 yellow 63c.

Chicago.—No. 3 yellow 57¼@60c; No. 2 mixed 61¼c.

Oats.

Detroit.—Cash No. 2 white 46c; No. 3 white 44½c; No. 4 white 41½c.

Chicago.—No. 2 white 42@43c; No. 3 white 39¾@40½c.

Beans.

Detroit.—Immediate and prompt are lower at \$3.50 per cwt.

Chicago.—Market is easy and lower. Hand-picked beans choice to fancy at \$4.25@4.50; red kidney beans \$8.50@9 per cwt.

New York.—Market is dull. Choice pea \$4.75; do medium at \$5.50; red kidney \$9.50.

Rye.

Detroit.—Cash No. 2 rye \$1.50.

Seeds.

Detroit.—Prime red clover at \$12.25; alsike \$14.10; timothy \$3.10 per bushel.

Toledo.—Prime red clover, cash and March \$11.90; alsike \$15; timothy at \$2.80 per bushel.

Hay.

No. 1 timothy \$21@22; standard and light mixed \$20@21; No. 2 timothy \$19@20; No. 1 clover mixed \$18@19; No. 1 clover \$17@18; rye straw \$13@14; wheat and oat straw \$12@13 per ton in carlots at Detroit.

WHEAT

The danger of damage from green bugs and drought in the southwest has been largely disposed of by the recent weather conditions and the prospect for a big winter wheat yield was a prominent factor in the market's behavior during the past week. Farmers still hold the bulk of the supply remaining in this country and there has been a disposition in some sections to offer old wheat more freely. The season is more advanced than usual and new wheat is expected to arrive on the market two weeks ahead of the usual time. Private reports suggest a condition of 90 to 92 per cent for the new crop compared with 78.5 per cent last year. This would mean a yield of 600,000,000 to 650,000,000 bushels of winter wheat. Export sales during the last two weeks exceeded 16,000,000 bushels, but failed to have much influence on values. Flour demand remains slow and there is no tendency on the part of distributors or retailers to accumulate supplies in spite of the low price. The visible supply of wheat at terminal markets on March 1 will be the lowest with one exception, since 1892.

CORN

In spite of light country offerings of corn, supplies in central markets are increasing. The visible supply is now the largest at this season, with one exception, since 1899. Industrial demand is much less than during recent years, export buying has been less prominent during the past week, and demand from consuming sections is not up to normal. Argentine is not exporting heavily at the present time but may be later. The closing of a corn products plant near Chicago, and a dust explosion which put the elevator with one-half of Chicago's drying capacity out of business, have affected the cash corn market at that point adversely.

OATS

Private reports indicate an oats acreage slightly less than a year ago. The outlook for this cereal is not attractive as the carry-over from the old crop is unusually large. Canada still has a surplus for sale and export demand is practically absent.

SEEDS

Clover and grass seeds have weakened again and the end of the spring demand is not far away. The market was delayed until late in the season by the reluctance of farmers to lay out cash, but the planting season is from one to three weeks early in nearly all sections and demand for seeds is expected to be over earlier than usual.

Clover seed for April delivery is at a big discount under the spot article. Red clover seed imports since July 1 total 6,590,000 pounds, of which nearly half arrived in the first half of March.

FEEDS

Mill feeds have lost most of their recent gains as demand remains much below normal for the season. Production is light.

Latest quotations per ton (100-lb. bags) in carlots were: Detroit.—Bran \$31@32; standard middlings \$31; flour middlings \$34@35; coarse cornmeal at \$30@31; cracked corn \$33@34; chop \$28.

HAY

Light receipts are maintaining prices for hay but demand is not broad. Wheat fields and pastures are becoming available in many sections, reducing requirements. At Kansas City, the largest of hay markets, receipts for the year to date are only one-half as large as during the same period last year. Low prices and high freight rates tell the story.

BEANS

The Michigan bean market is very weak with \$3.50 being paid f. o. b. for choice hand-picked stock and about \$2.75 to growers for beans in the dirt. Receipts are light but wholesale grocers buy only from hand to mouth and the market has been easy for so long a time that dealers become nervous if stocks do not move as soon as they are received and immediately begin to cut prices.

WOOL

Activity in the wool markets has been on the wane recently. Large sales of woolen goods for the fall trade resulted in increased buying by the mills during the past week. Belief that the emergency tariff will be passed was also a factor. There is some encouragement in the report that orders for goods have been so large that it will be necessary to scale them down to meet the capacity of the mills. This report may prove to be a false alarm, however. Latest reports from British and Australian auctions indicate a limited demand from all quarters with the

bulk of the offerings withdrawn because of unsatisfactory prices. With the new clip now being removed the total supply of wool appears to be above one year's requirements. Some quarter-blood pooled wools in Iowa and Illinois have been disposed of on the basis of about 25 cents. Boston quotes prices partly nominal as follows: Ohio and Pennsylvania fleeces: Delaine unwashed 38@40c; fine unwashed 30@32c; half-blood combing 31@33c; three-eighths-blood combing 29@30c. Michigan and New York fleeces: Delaine unwashed 36@38c; fine unwashed 28@29c; half-blood unwashed 31@32c; three-eighths-blood unwashed 28@29c.

POTATOES

Shipments of potatoes are gradually dropping off but supplies in distributing markets are very heavy and prices throughout the country are unsettled and weak. Reports from the northwestern producing sections indicate that reserves are very large although other sections are well cleaned up. The movement of seed stock is about over. Bliss Triumphs from Michigan and Wisconsin have been selling from \$2 @2.25 per 100 pounds in middle western markets, or nearly twice the price of table stock. Seed stock cobblers bring only a trifle more than commercial potatoes.

BUTTER

With a marked increase in the domestic make of butter expected to come early in April it is unlikely that heavy farm offerings can be absorbed without reducing prices. Warm weather has affected the quality of the domestic make, while the Danish butter has been of specially high quality, some lots scoring as high as 95 so that the foreign competition is especially serious. Philadelphia, which heretofore has not taken kindly to Danish butter, absorbed it readily during the past week. Prices for 92 score fresh butter as quoted by the bureau of markets on March 26 were: Chicago at 44½c; New York 46½c; Boston 47c; Philadelphia 47½c.

CHEESE

Cheese markets have been dull during most of the past week with buying limited to small quantities for immediate consumptive requirements. Receipts increase about 50 per cent at Chicago and supplies accumulated. Small concessions in price failed to attract heavy buying. It is reported that stocks in the country are heavy and are being offered at low figures. The average quality of current receipts of fresh cheese is satisfactory. Buyers have shown a preference for white over colored cheese.

EGGS AND POULTRY

Egg markets have fluctuated wildly but on the whole the price level shows little net change for the week. Combined receipts at Chicago, New York, Boston and Philadelphia since January 1 is 3,170,987 cases as compared with 2,132,722 cases last year. Quotations are: Detroit.—Eggs, fresh current receipts 25½c. Live poultry, spring chickens 32@36c; heavy hens 35@36c; roosters 22c; geese 20@23c; ducks 35@40c; turkeys 40@45c.

APPLES

Apple markets show little change for the week but appear to be working gradually higher toward the close of the season. The movement into consumptive channels is satisfactory while shipments from producing sections are gradually falling off. The larger sizes of boxed apples are especially firm as the yield of such apples was below normal.

ONIONS

The onion market is still dormant with ordinary stock bringing 50@90c per 100 pounds on the middle western consuming markets. Texas Bermudas are arriving in the north and are selling at \$3.25 per crate at Chicago.

COMING LIVE STOCK SALES.

Guernseys.—May 10, F. E. Fox, Sales Manager, Eau Claire, Mich.
Holsteins.—May 18, F. J. Fishbeck, Howell, Mich.

Live Stock Market Service

Wednesday, March 30.

DETROIT

Cattle.

Market opened slow.

Best heavy steers.....	\$ 8.25@ 8.50
Best handy wt bu steers.....	7.50@ 8.00
Mixed steers and heifers.....	6.75@ 7.25
Handy light butchers....	6.00@ 6.75
Light butchers.....	5.50@ 6.00
Best cows.....	5.75@ 6.00
Butcher cows.....	4.50@ 5.50
Common cows.....	3.00@ 3.50
Canners.....	2.50@ 3.00
Choice bulls.....	5.75
Bologna bulls.....	5.00@ 5.25
Stock bulls.....	4.50
Feeders.....	6.50@ 7.00
Stockers.....	6.00@ 6.25
Milkers and springers....	\$ 45@ 95

Veal Calves.

Market opens steady and will close lower.

Best.....	\$10.00@11.00
Culls and common.....	5.00@ 9.50

Hogs.

Market steady.	
Mixed.....	\$ 10.00
Pigs.....	10.50
Heavy.....	8.75@ 9.00
Roughs.....	7.50
Stags.....	6.00

Sheep and Lambs.

Market dull.	
Best lambs.....	\$ 9.00@ 9.50
Fair lambs.....	7.50@ 8.00
Light to common.....	5.00@ 7.00
Clipped lambs.....	8.00@ 8.50
Fair to good sheep.....	5.00
Culls and common.....	1.50@ 2.50

BUFFALO

Cattle.

Receipts 10 cars. Market slow.

Calves.

Market slow and steady at \$5@13.

Hogs.

Receipts 10 cars. Market is lower. Heavy \$9.25@9.50; mixed at \$10.50@10.75; yorkers \$10.75@11; light yorkers and pigs \$10.75@11; roughs \$8@8.25; stags \$5@6.50.

Sheep and Lambs.

Receipts 10 cars. Trading is slow.

CHICAGO

Hogs.

Estimated receipts today are 16,000; holdover 12,511. Market slow; lights 10@15c lower; others steady to 15c higher. Bulk of sales at \$9.65@9.75; tops \$10.25; heavy 250 lbs up medium, good and choice \$8.65@9.15; medium 200 to 250 lbs medium, good and choice \$9@9.85; light 150 to 200 lbs common, medium, good and choice \$9.50@10.25; light lights 130 to 150 lbs common, medium, good and choice \$9.65@10.25; heavy packing sows 250 lbs up smooth \$7.50@8.50; packing sows 200 lbs up rough \$7.25@7.50; pigs 130 lbs down medium, good and choice \$9.25@10.25.

Cattle.

Estimated receipts today are 6,000. Market steady to strong; calves 25@50c lower. Beef steers medium and heavy weight 1100 lbs up choice and prime \$9.50@10.15; do medium and good \$8.25@9.50; do common \$7.50@8.25; light weight 1100 lbs down good and choice \$9@10; do common and medium \$7@9; butcher cattle heifers common, medium, good and choice at \$5.50@9.25; cows common, medium, good and choice \$4.75@8; bulls, bologna and beef \$4.50@7.25; canners and cutters cows and heifers \$2.75@5; do canner steers at \$3.50@5; veal calves light and handyweight medium, good and choice \$7@9.50; feeder steers, common, medium, good and choice \$7.25@8.75; stocker steers common, medium, good and choice at \$6@8.25; stocker cows and heifers, common, medium, good and choice \$4.50@6.25.

Sheep and Lambs.

Estimated receipts today are 20,000. Sheep steady; lambs 25c 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 \$7@8.25; spring lambs medium, good, choice and prime \$7@9; ewes medium, good and choice \$5@6.75; ewes cull and common \$2@4.50; yearling wethers medium, good and choice \$7.50@9.25.

Little Journeys to the Market

Stockers and Feeders.

EVERYBODY knows that stockers and feeders are steers which must be fattened before they are suitable for slaughter, but the difference between stockers and feeders is not so generally understood.

Feeders are heavier in weight and higher in flesh and are ready to go into the feed lot to be put on a heavy ration of grain. Stockers are younger and thinner in flesh and must be carried on grass or rough feed until they have more nearly completed their growth. The dividing line in weight is usually placed at about seven to eight hundred pounds. Some steers weighing more than this are too thin to put on feed, while some light steers have enough flesh to go direct to the feed lot. As time passes there is a tendency to use lighter cattle as feeders and the dividing line is moving downward.

Meets Consumers' Demands

How One Fruit Grower Gained Favor

By Manthei Howe

MRS. MARY AMES, fair, fat and nearly forty, was talking excitedly. "It makes me furious," she declared. "I have trouble enough now to keep within my household allowance, without having anyone try to put over anything like that."

Mrs. Ames was secretary of a woman's club and was taking advantage of an after-the-meeting group to voice her opinions. Several of the club members were listening and agreeing.

"What's the excitement," exclaimed Mrs. Jacob Hollster as she joined the group. "You look peeved, Mary."

"I am," retorted that lady, and she proceeded to explain. "You would be, too. I had a bushel of potatoes from Gus Wackstrom's farm. They were delicious, flaky and white when baked. The whole family liked them so well that I told Mr. Wackstrom I'd like to have him bring me my winter's supply. He set the price. I didn't specify or haggle. The only arrangement was that he was to keep half of the potatoes until I wanted them later in the winter because you know our cellar is too hot to have potatoes keep well."

"Well, what was the matter?" Mrs. Hollster tried to hurry her a bit, "Did he bring the whole lot at once?"

"Worse than that," snapped Mrs. Ames. "I thought, of course, the potatoes would be like the sample bushel. Well, they weren't. They were about as different as they could be. The potatoes were a mixture of the red and the white varieties. Some would boil to pieces while others stayed hard with the same length of cooking. And in the lot there was over half a bushel of potatoes about the size of small plums. You couldn't use them for anything but salad, and they really weren't good for that."

"You can't trust these farmers," chimed in a listener.

"Well, he won't get another chance to cheat me," declared Mrs. Ames. "Next winter I'll buy from the store, from someone of an established reputation. I don't relish the idea of being stung."

"Oh, see here," objected Mrs. Hollster. "It isn't fair to condemn all farmers because you've had an unfair deal from one."

"It isn't just one," cut in another woman. "I had a similar experience in getting my winter's supply of cabbage."

"But still," persisted Mrs. Hollster. "You leave out of the reckoning the best kind of farmers. They, too, have established reputations for fair dealing. The farmers are keeping pace with other businesses and professions and are making efforts to build up a reputation for their produce."

"Like fun," sniffed Mary. "You'll have to show me."

"All right," Mrs. Hollster took up the challenge. "How many of you bought apples from that carload last month?"

"I did."

"So did I."

Every woman in the group with the exception of the school teacher had purchased apples.

"Well, weren't they all right?"

"Absolutely," agreed the women.

"Well," Mrs. Hollster went on to drive the point home. "Those apples were raised on a Michigan farm. That farmer is not content, though, with just selling his produce. He wants to build up a real business reputation for himself. Listen to this."

She opened a copy of the daily newspaper, just off the press, and read:

To My Friends, the People of Marquette: Greetings.

My carload of apples sold, they are now in your home. But I still

feel an interest in them. I desire that they give you the greatest satisfaction. Keep them in the coolest possible place of even temperature, but not where they will freeze. If you wish to take the trouble of wrapping each apple in paper you will be well repaid for the extra effort.

Hoping that the services I have given may merit your further patronage, I thank you for your favor.

Yours truly,
E. E. CHICKERING,
Prop. Orchard Grove Farm,
R. F. D. No. 1, Belding, Mich.

"There are farmers and farmers," she remarked when she had finished reading. "It's too bad that the few dishonest incompetent ones should give a black eye to the reputable ones."

It's only too evident that shady dealings by their very nature seem conspicuous. Mr. Chickering is only one of many of the up-to-date farmers who have the right idea. He is giving a public demonstration that he is not afraid to acknowledge that he grew and sold those apples. More than that, he wants to warrant your satisfaction with the sale, so far as possible. So he tells you how to take care of them. And he is building up the opportunity for making a sale next year. I think he deserves our patronage."

The women agreed that he did. It is rather too bad that Gus Wackstrom could not be present to learn just how much undesirable advertising he had received.

He probably laughed when he saw that advertisement of the apple grower. But there is advertising and advertising. Some of it pays. It's a sure thing that the Wackstrom brand does not.

LIVE STOCK MARKETS FED SPARINGLY.

RECEIPTS of live stock of all classes at ten markets were unusually light during the past week. The cattle and hog runs totalled only about four-fifths, and sheep five-sixths as large as in the preceding week. The busy season on the farm, which always checks shipments, is from one to three weeks earlier than usual, and during the first half of the week country shippers feared strike trouble.

Prices, especially for cattle and hogs have been erratic. Shipping demand has been irregular and a number of small packers have been out of the market at Chicago, reducing the slaughter requirements at this price-setting point. Meat prices have been irregular but the trend was lower, especially in the east.

Hogs and sheep made slight advances for the week while cattle are steady to a shade lower. Receipts during the present week are expected to enlarge since the packing house wage dispute has been settled. Passing of the Lenten season and the re-entry of small packers may offset a larger run.

HORSE RUNS ARE AMPLE.

RUNS of horses have been liberal for three weeks and buyers have had no difficulty in preventing price advances. The eastern farm trade provides the biggest outlet and will continue to do so for another thirty days. The south has been buying cheap horses at St. Louis and Cincinnati. Green and rough-haired stuff sells at big discounts.

Chicago.—Good and choice heavy drafters \$200@275; common and medium drafters \$125@175; farm mares \$100@140; farm chunks 1200-1400 lbs \$125@165; wagon horses \$125@175.

St. Louis.—Good and choice draft horses \$150@210; good eastern chunks \$100@150; choice southern horses \$60@90; good southern horses \$35@60; medium southern \$20@40.

Mules.—16-17 hands \$135@280; 15-15½ hands \$110@250; 15 hands \$100@160; 14-14½ hands \$55@110; 12-13½ hands \$30@65.

Onion set growers of northern Illinois are favoring cooperative marketing as the price for their product is less than cost of production.



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Our New 176-Page Book on
Farm Concreting

Read This Advertisement Through
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It's brimful of valuable concreting ideas and suggestions. Contains 176 pages, 132 plans and illustrations. And, right now for a short time only, your name in the coupon below brings this book to you postpaid absolutely FREE.

With Sheldon's new book on Farm Concreting to give you the "Know How" and a Sheldon Mixer to do the hard, tedious, back-breaking end of the job, concreting is easy. Start your concreting work right. Start now. Get this Free Book.

SHELDON CONCRETE MIXERS

"Take the Backache Out of Concrete." The Sheldon will solve your labor worries. It will pay for itself on your first small job. It makes farm concreting easy and profitable. It makes possible those many essential, permanent concrete improvements that shut out the rats, save your grain, protect your stock, lighten your work, make the farm a more comfortable place to live on and add value to your property. With a Sheldon you can do your concreting in idle time, when roads are bad and fields muddy.

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Build your own concrete tanks, silos, foundations, barns, sheds, granaries, troughs, walks, platforms, etc. It's easy the modern Sheldon way with the Sheldon Concrete Book to help you. With a Sheldon on the job you can save money on all your farm concreting. The Sheldon is the original, pioneer batch-type mixer for farm use. It is backed by a record of 8 years proven service and over 14,000 satisfied owners. Sold on liberal 30-day Trial with Money Back Guarantee.

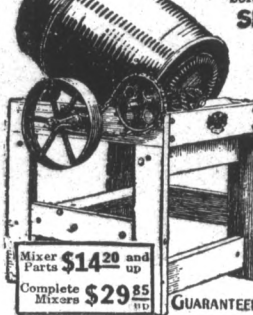
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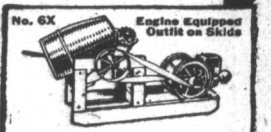
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Please send me without any obligation on my part a FREE copy of your 176-page Concrete Book and new 48-page Catalog of Sheldon Concrete Mixers.

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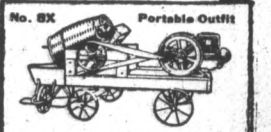
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We supply FREE Blue Print Plans for building your own mixer when buying Sheldon Iron and Steel Parts. Fully explained in catalog. Get free copy.



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See Pyrox page ad in this paper April 9—Bowler Insecticide Co.—Boston—Baltimore—Chicago.

STRAWBERRY PLANTS

Good strong, well rooted plants at \$4.00 and \$5.00 per thousand. Also a complete line of the best red and black raspberries, hardy blackberries, fancy gooseberries and currants. A large stock of popular grape vines. Many of our customers are making from \$500.00 to \$1200 per acre growing berries from our fruit plants. Send for our free catalog.

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Farmers and Gardeners are learning that it pays big in earlier and bigger yields to use our open field grown plants. Early Jersey, Charleston Wakefield Succession, Flat Dutch, Express, 2000 \$3.00, 5000 \$8.25. Prepaid mail 200, \$1.00, 500 \$1.50, 1000 \$2.50. send for price list. Sweet Potato and tomato plants

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HAY Ship to The Old Reliable House
Daniel McCaffrey's Sons,
623-625 Wabash Bldg., Pittsburg, Pa.

HAY Apples, Potatoes Wanted Highest
prices paid.
E. L. RICHMOND CO., Detroit, Mich.

FOR SALE A 4 Bottom 14 inch TRACTOR
PLOW NEW. Price \$175.00
George H. Hawkins, 130 Trowbridge,
Detroit, Michigan

FOR SALE New SAMPSON TRACTOR,
model T, 1923, in fine mechanical condition. Run only 5 weeks, at less than half price.
H. B. Proctor, Grand Haven, Michigan.

For Sale High Germination pure variety
Ito San Soya \$5.50 per bu.
IVAN FERGUSON, Buchanan, Mich.

Frost proof Cabbage plants. Wakefield, Copenhagen Succession. 300 \$1.50, 500 \$2.50, 1000 \$4.50 p'd. Express \$1.75 per 1000 Satisfaction guar. T. J. Cox, Franklin, Va.

POULTRY

Chicks S. C. W. English Leghorns, \$12 a 100. price on 1000 lots by parcel post delivered.
HENRY WATERWAY, R. 4, Holland, Mich.

Single Comb BLACK MINORCAS. Large Birds. Long Bodied. Great Layers of large white egg. \$1.50 per lb. \$3.00 per 100.
MRS. W. H. MORRISON - JONESVILLE, MICH.

W. F. B. Spanish Hatching eggs. Heavy layers. Prize winners \$3 per 15 eggs.
S. C. M. Anconas Lawrence Lake, Chetoyan, Mich.

60 BREEDS chickens, ducks, geese, turkeys, guinea fow, hares, dogs. Fine illus. and desc. catalog only 10c.
Edwin A. Souder, Sellersville, Pa.

100 March hatched. Barron strain. S.C. White Leghorn-cockereels. Large, vigorous, pure white birds \$3 and \$5 each. R. E. McInerney, R. 1, Frankenmuth, Mich.

White Wyandottes Official records. Five hens 1074 eggs. Eggs for hatching at reduced prices. Catalog free.
G. W. SCHOTTMANN, Montrose, Ill.

White Wyandottes BARRED ROCKS bred-to-lay Eggs \$2.50 per 15; \$4.50, 30. Baby Chicks.
HOWARD GRANT, Marshall, Mich.

White Holland Turkeys White African Guinea 80 acres of them. Reference C. H. Burgess, Prof., Poultry, Mich. Agri. College. Farm for sale. Alden Whitcomb, Byron Center, Mich.

Mammoth Bronze Turkeys, Toulouse Geese and Pekin ducks. Either sex and eggs!
CHASE STOCK FARM, Mariette, Mich.

FARM HELP

Wanted Experienced single middle aged man to work by the month on farm.
Address JOHN B. SIMON, Pewamo, Mich.

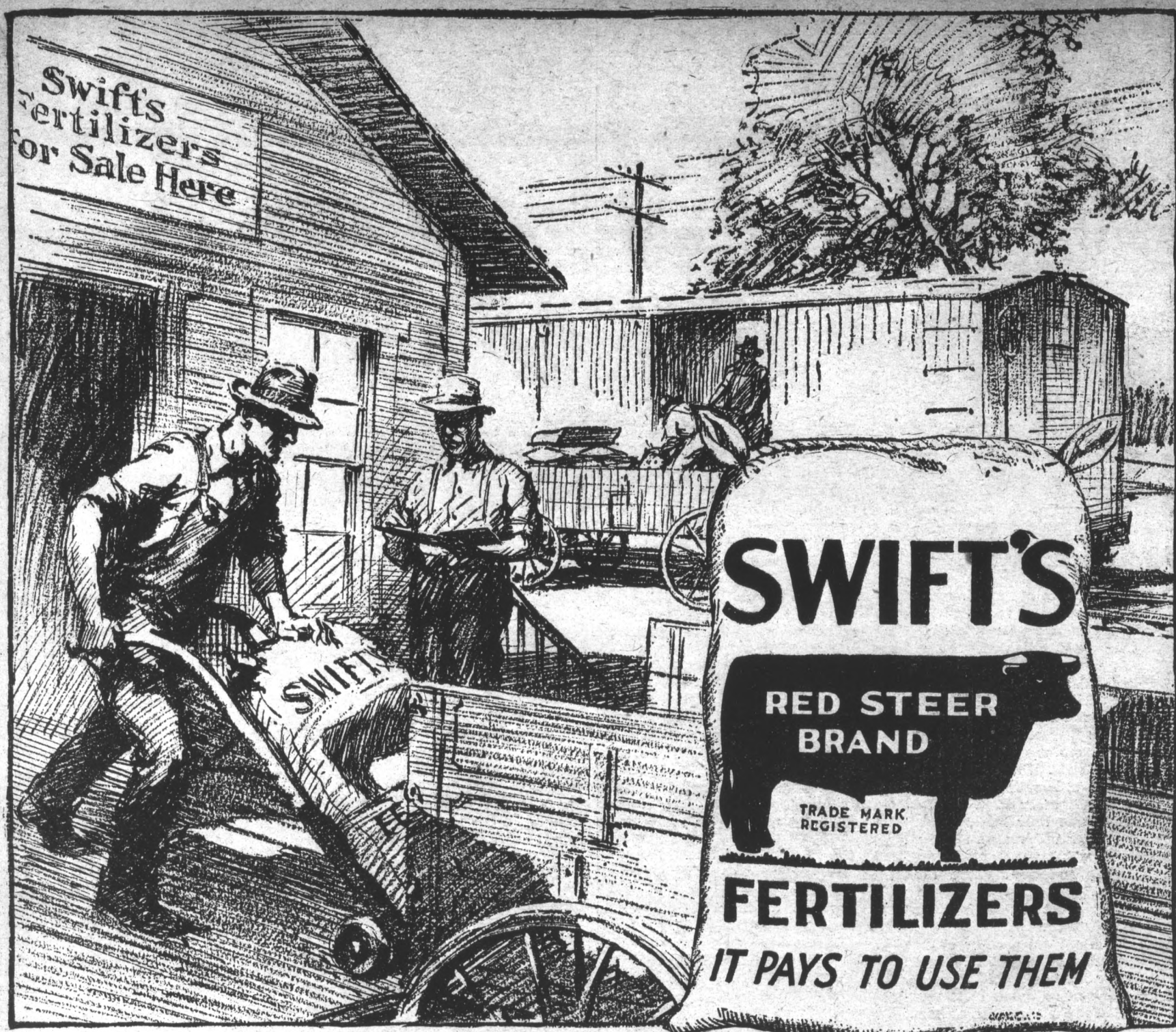
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OFFER No. 301.

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McCall's Magazine, one year.... 1.50

Total value\$2.50

Both for \$1.75.



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If you haven't invested in Swift's Red Steer Fertilizer or want more to make the application per acre heavier or spread on new fields, you can order now and get it.

The farmer that makes a heavy application of fertilizer is the one that gets the low costs, the big yields and makes the most profit.

Fertilize every acre. Remember that one acre fertilized is generally good for more profit than two acres without fertilizer.

Don't wait—get your Swift's Red Steer Fertilizer now!

Buy from our local dealer or our nearest Sales Division.

Swift & Company, Dept. 44

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Grow your crops at less cost

Many farmers are making more profit from fifty acres properly fertilized than others are making from twice as many acres without fertilizer.

It costs no more for preparation of land, seed and seeding, ground rental or interest on an acre of land yielding 80 bushels of best corn or oats than for one yielding half as much of poor quality.

One sure way of growing crops at less cost is to secure more yield per acre and per man. This you can do by using Swift's Red Steer Fertilizers.

The extra bushels or pounds produced per acre by Swift's Red Steer Fertilizers are the ones that add greatly to your profit. Only the cost of fertilizer can be charged against this extra yield.

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