

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

VOL. CLIV. No. 19
Whole Number 4096

DETROIT, MICH., SATURDAY, MAY 8,

ONE YEAR \$1.00
FIVE YEARS \$3.00

R. J. Baldwin
Director Ext. Work

Keep Fertility at the Top Notch

WHILE lime and phosphorus are two of the cornerstones upon which the four-square structure of an enduring agriculture must rest, they alone are not sufficient.

Here is what has happened at the Ohio Experiment Station on a soil depleted of all the elements of fertility by a century of hard usage. The figures show the average annual value of product per acre, excluding straw and stover, over a period of fifteen years:

Treatment.	Average Value.
None	\$21
Lime	27
Lime and phosphorus	37
Lime, phosphorus and potassium ..	42
Lime, phosphorus and nitrogen....	44
Lime, phosphorus, potassium and nitrogen	46

This, however, does not show the full effect of nitrogen, because the crops grown included clover every fifth season, and although the clover had become almost a total failure by the end of the fifteen-year period, yet it contributed some nitrogen, averaging a yield of 1,168 pounds per acre for the fifteen years.

In this test the fertilizing elements were carried in ground limestone, fourteen per cent acid phosphate, muriate of potash, and nitrate of soda, and were given for each five-year period at a total rate per acre of two tons of ground limestone, 320 pounds of fourteen per cent acid phosphate, 260 pounds of muriate of potash and 480 pounds of nitrate of soda.

Computing limestone at \$6.00 a ton

Two Boosters of Better Crops, that are Inexpensively Provided by Intelligent Farming Methods

By Dr. C. E. Thorne, Director of Ohio Experiment Station

spread on the field, fourteen per cent from an expenditure of only \$3.70 in acid phosphate at \$26, muriate of potash at \$150, and nitrate of soda at \$100, adding fifty cents an acre to cover cost of applying the fertilizer and offsetting the increase in straw and stover against the increased cost of harvesting the larger crops produced by the liming and fertilizing, the financial outcome per acre would be approximately as shown below:

Treatment.	Annual Cost of Treatment.	Annual Value of Produce.	Net.
None	\$.....	\$21.30	\$21.30
Lime	2.40	27.50	25.10
Lime and phosphorus	3.70	37.50	33.80
Lime, phosphorus and potassium.....	7.60	42.00	34.40
Lime, phosphorus and nitrogen	8.30	44.20	35.90
Lime, phosphorus, potassium and nitrogen.....	12.20	46.60	34.40

The crops are valued in the above tables at \$1.00 a bushel for corn, seventy-five cents for oats, \$2.00 for wheat and \$20 per ton for hay. At these val-

uations and on this depleted, but responsive soil, the seemingly extravagant expenditure of \$12 an acre annually has left a net gain of \$13 above the value of the produce on the untreated land, although the net gain crops.

By the systematic growing of clover or other leguminous crops in short rotations, the feeding of the larger part of the produce of the farm to live stock, and the intelligent saving and use of manure, it is possible and practicable not only fully to maintain but to increase the nitrogen content of the soil, and to maintain the supply of potassium with but small additions from outside. With lime and phosphorus, however, the case is different, for these elements are constantly being carried away, not only in the grains sold off the farm, but to an equal or greater extent in the bones or milk of live stock; hence restitution from outside the farm must be made if its fertility is to be maintained.

Partial restitution of phosphorus may be made by the purchase of feeding stuffs, especially linseed and cottonseed oil meals and wheat bran, but unless the soil has been largely derived from limestones the amount of lime recovered in such feeding stuffs will be too small to cut any figure. A ton of old process linseed oil meal, for example, will contain only about nine pounds of lime, and a ton of cottonseed oil meal about six pounds, whereas experience has shown that an annual dressing of at least two hundred pounds of lime per acre may be necessary to sweeten an acid soil.

Barnyard Manure as a Carrier of Nitrogen and Potassium.

In the experiment above described the annual increase in yield due to (Continued on page 743).

Corn in Three-year Rotation with Wheat and Clover.

Left hand, no fertilization for twenty years except a poor clover sod. Right hand, eight tons of fresh stable manure reinforced with forty pounds of acid phosphate per ton of manure. The average yields per acre for twenty-one years are as follows:

	Corn.	Wheat.	Hay
Where no treatment was given.....	32 bu.	13 bu.	2,500 lbs.
Where phosphated manure was added 67 bu.	67 bu.	28 bu.	4,900 lbs.



The Michigan Farmer

Published Weekly Established 1843 Copyright 1920

The Lawrence Publishing Co.

Editors and Proprietors

432 LaFayette Boulevard Detroit, Michigan

TELEPHONE CHERRY 5394

NEW YORK OFFICE-381 Fourth Ave.
CHICAGO OFFICE-111 W. Washington St.
CLEVELAND OFFICE-1011-1013 Oregon Ave., N.E.
PHILADELPHIA OFFICE-261-263 South Third St.M. J. LAWRENCE President
E. H. NANCE Vice-President
P. T. LAWRENCE Treasurer
J. F. CUNNINGHAM SecretaryI. R. WATERBURY Associate Editors
BERT WERMUTH
ALTA LAWSON LITTELL
W. MILTON KELLY
I. R. WATERBURY Business Manager

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

50 cents per line agate type measurement, or \$7.00 per inch (14 agate lines per inch) per insertion. No advertisement inserted for less than \$1.50 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 CLIV. NUMBER NINETEEN

DETROIT, MAY 8, 1920

CURRENT COMMENT

Wage Scales and Living Costs

NOTHING is more evident than the fact that the people of this country, in common with the people of most other countries, are finding it difficult to adjust themselves to the changed economic and industrial conditions toward which we have been heading for a decade, and which have been so sharply accentuated by the great war which has stirred the entire world to its social and economic foundations. The diversion of our industries to war production, together with the inevitable effect of currency inflation in connection with the lessened production of staples, sent prices upward at a terrific rate, thus rapidly pyramiding living costs, which in turn were necessarily met by increased wage scales all along the line. But the advance in wage scales was uneven, depending upon the necessities of the case in war production or the possible profits resulting from the operation of commercial industries. As a result a very considerable proportion of workmen who were engaged in industries which could pass on a greatly increased wage scale to the ultimate purchaser of their products, found themselves enjoying incomes which were far beyond their wildest dreams of former days. And these quickly swollen incomes were very largely expended in the purchase of luxuries to satisfy a previously inhibited taste or ambition. This very natural consequence in turn became the cause of further increases in the price of goods and of a greater degree of unrest among workers not in this first favored class, resulting in increased wage demands all along the line, and a corresponding increase in strikes and walk-outs, with the same consequence of lessened production and still further increases in living costs.

In the matter of wage demands, competition has been keen. During the earlier stages of this general upward movement the then high wages commanded by skilled men in certain trades was the general goal toward which other workers were striving, and the most common wage demand where any degree of skill is involved was for a scale of a dollar an hour. Naturally enough the classes of skilled workmen who were first fortunate enough to achieve that wage scale sought to maintain their lead, and now many wage demands are for scales up to \$1.50 per hour and production is being further halted. Worst of all, per man production is admittedly low in practically every industry and conspicuously low in some; which adds further

to the already burdensome living costs, with the net result that workmen are profiting little from increased wage scales.

In attempts to stay the rising tide of prices, the government has advertised various onslaughts on profiteers, which in the main have apparently been dissipated in attempts to force down the price of milk, which of all essential foodstuffs has advanced least during the past two years. But while attempting to force down the price of this food commodity under a war measure, the lid of price control has been lifted from other commodities and other necessities for which the farmers of the country furnished the raw material have soared in price in the hands of others, sugar being a notable case.

Quite naturally the average man's first thought is of cheaper foodstuffs when he considers the possibility of lower living costs. The highly paid, but dissatisfied workman does not, for the most part, think of foodstuffs in terms of labor, plus interest on investment, taxes and overhead charges which are essential factors in farm as well as factory production. Too often city business men are just as faulty in their analyses, and the editors of city papers more generally so.

But it has become so apparent that increased wage scales will not solve the problem, but rather aggravate it in the end by drawing still more labor from the farms, that more thinking men of all classes are beginning to see the problem in its true light. And there is little doubt that the more thorough organization of farmers through the Farm Bureau movement is aiding them to see it more clearly. If farmers as a class should "strike" for the short hours and high wage scales demanded by men in less "skilled" employment, the result would spell disaster. Their products, interpreted in terms of such a wage scale would take the joy out of metropolitan life. Thanks to the good sense of our American farmers they are contemplating no such move. What they are demanding is an honest day's work for a fair day's pay all along the line, which would increase production in other lines and add to the nation's as well as their own prosperity. Unless the good sense of American workmen prevails in this regard, the inevitable result must be an evening up of the scale by a marked shrinkage in agricultural production and a further increase in living costs due to a scarcity of foodstuffs.

Again we repeat an oft reiterated statement: High wage scales and cheap foodstuffs cannot long be coexistent. Price levels will in the end be evened up by the operation of natural laws, if extreme variations cannot be avoided by other means.

Seed Time and Harvest

UNUSUALLY low temperatures and a heavy precipitation of moisture during the month of April are going to be responsible for greatly reducing the capacity of our farmers to produce food crops by forcing the sowing and planting of fields beyond the dates when the seeds should go into the ground, and by bringing the heavy tasks of the season, cultivating, haying and harvesting so close together that it will be impossible to properly perform them with the present very limited supply of available help. By reason of this probable decrease due to unseasonable weather in addition to what had already been anticipated because of the shortage of farm labor, the nation is certain again to be reminded this coming winter that agriculture is still one of our basic industries and that when the agriculturists are encumbered with industrial handicaps, woe to the people.

But the individual farmer who is so fortunate as to find himself in a position to grow his crops and harvest them is bound to profit through the high prices which seem sure to obtain by reason of the prospective unbalanced relations between supply and demand. Many would increase their acreage devoted to crops if there existed a fair degree of certainty that crops once grown could be harvested. To the end of rendering aid at the crucial season we suggest that county farm bureaus, farm organizations, or agricultural agents at once take up with local manufacturing and industrial concerns the matter of securing needed help for the farmers when harvesting time comes. If, as we believe, a large percentage of our business men will appreciate the situation and cooperate, there is bound to come a benefit to both through alleviating or perhaps averting a national calamity and in making it possible for the farmer to profit more from his acres.

About Beans

THE Michigan white bean has established itself with the consumer, but so many consumers do not know beans that this favorite gets its jolts in the market because of its near relations who masquerade under its reputation. "Imitation is the sincerest flattery" might well be said also of foodstuffs like beans and butter. The products of the Orient and the beans of the western coast country are the main competitors and compete unfairly in quality. The collapse of the bean market in Michigan in 1919 and 1920 is generally ascribed to "futures" being sold and the importations of "Asiatics" to make these "bear" prices afford a profit on the imported stock at the expense of the Michigan-grown beans. In addition to the actual weight of beans put on the market the imported stock left a bad taste in the mouths of the bean eaters, who turned to other foods and beans were neglected as a food, although of comparative cheapness, as compared especially to potatoes. The damage comes, (1) from future sales; (2) from Asiatic importations; (3) from the inferiority of the imported stocks which deflected consumers from beans as a food. The first remedy for years for commercial or food dislocations is the tariff and a trip to the national capital for additional protection. Whatever one's opinion may be about the tariff it is a political impossibility for the crop of 1920, as it was for the Michigan bean crop of 1919. There are, however, other plans more promising of maintaining the merits of Michigan beans and to hold the markets which those merits demand. One method would be a law compelling all canned stocks to be labeled as to the contents, where grown. The trade would then know what they were buying. In the absence of such a law an agreement through the recognized channels of the bean trade whereby reputable canners and these only, would be sold Michigan beans and the cans would feature the Michigan brand. An advertising campaign would tell who were canners of Michigan stocks and quite effectively bar unfair competition of the "bear" canners who threaten or do import the inferior or cheaper bean, both in price or quality.

The method of trade protection in the handling of stocks as merchandise instead of for canning offers more difficulty. If some method was devised to prevent future or contract sales and thus depressing the market until importations can arrive, a serious handicap could be overcome. When agricultural organization is completed the growers operating through "non-future selling" elevators would prove reasonably effective. A county organization meeting with their elevator operators,

could soon establish such relations to mutual advantage. Congestion of the market could be prevented, both by holding off from marketing and by warehousing, with loans on the stock to equalize distribution. Michigan needs some man who understands the growers' and distributors' problems and big enough to hold any outlaw from interfering with this state's great contribution of an essential food. It

(Continued on page 763).

News of the Week

Tuesday, April 27.

THE United States Senate votes \$24,000,000 for the improvement of rivers and harbors throughout the country.—Turks overthrow the Albanian government, according to information from Greece.—Italian socialist leaders appeal to workers in Italy to start a revolutionary movement on May Day.—Representatives of Michigan's industries meet in Lansing to consider an impending fuel crisis.

Wednesday, April 28.

EARLY returns from the Ohio primaries indicate that Senator Harding is Ohio's candidate on the republican ticket and Governor Cox as the democratic selection.—The German government is preparing a note asking the withdrawal of allied troops from Frankfurt and other recently occupied districts.—Senator Underwood, of Alabama, is elected democratic leader in the United States Senate to succeed the late Senator Martin of Virginia.—New oil fields are reported to have been discovered near Fallon, Nevada.

Thursday, April 29.

THE revolutionary movement opposing Carranza's Mexican government spreads rapidly, the rival forces now under arms appear to be nearly equal in numbers.—New Jersey primary returns show a small majority for Leonard Wood over Hiram Johnson of California; a recount is probable.—Anthracite coal workers refuse to accept a fifteen per cent advance in wages.—Three hundred carloads of sugar refined in Mexico will be released for sale in the United States.

Friday, April 30.

REBEL forces seize control of the entire state of Chihuahua after defeating the federal garrison at Chihuahua City, Mexico.—Polish troops defeat thirty-six Bolshevik divisions in an advance on Kiev.—In a head-on collision at Sanborn, Minn., five persons are killed and twelve injured.—United States Marines withdraw from Guatemala where the government of President Cabrera was recently overthrown by revolting natives.—A movement is started in Muskegon to introduce religious instruction in public schools.

Saturday, May 1.

PRACTICALLY no industrial disturbances are reported in the United States.—President Carranza and his official family prepare to flee from Mexico City and move the headquarters of the federal government, due to the approach of rebel forces.—Additional success has attended the Poles in their advance against bolshevik troops southwest along the Dniester river.—The jurors disagree in the Tabor case tried before Judge Weist at Paw Paw.—Several lunch restaurants in the business district of Chicago lower prices.—Labor unions condemn the organization of overall clubs, in that it advances prices for a workingman's necessity.

Sunday, May 2.

THE fall of the Carranza government is predicted from many quarters.—Members of the International Timber Workers' Union of upper Michigan, Wisconsin and Minnesota, plan to strike tomorrow in response to an order issued from union headquarters.—Hearings on the lakes-to-the-sea canal project are to be held this week.—For the first time in sixty-four years Kalamazoo is without gas for either heating or lighting purposes.

Monday, May 3.

THE consolidation of nine steel, coal and transportation companies of Canada into a \$500,000,000 organization is announced from Montreal.—Thomas A. Edison states that Americans can manufacture dyes superior to those made in Germany, if given a fair chance.—Wood plants in northern Michigan are reported to be closing down because of the wood workers' strike.—Five persons are known to have been killed and many seriously injured in a tornado which swept the countryside north of Chelsea, Okla.



Developing Blue Ribbon Farmers

The Best Insurance we have of a Permanent Agriculture, Lies in the Enthusiasm of Our Juvenile Club Members for Rural Life.

By J. B. Hasselman

ASK a farmer for his opinion of the greatest danger confronting the agricultural interests of today, and the chances are he will tell you of the constantly increasing exodus from the farm of our most progressive boys and girls. Dollar-an-hour factory wages are proving an all too efficient lure to draw the younger generation from the country, and it requires but scant foresight to picture the catastrophe which will inevitably follow a long-continued trend in this direction.

And it is not money alone which has made the city so dangerously attractive. More available amusement facilities and multiplied social opportunities have played their part in building the city's appeal; while the most important factor of all has been that the business life of the commercial world has made a greater appeal to the imagination than has the work of the farm.

In the past much has been said of the romance of the industrial world—little has been told about the farm. Thrilling life stories of the great "captains of industry" are familiar reading, finding their way even into the text books of our schools; but how seldom have the brilliant successes of our great agricultural leaders been considered worth the telling. The messenger boy grows up to be a bank director; the section hand becomes president of the road; but what happens to the young man who stays on the old home place? This, unfortunately, has too often been the way in which our farm boys and girls have been led to look at the whole question of their life work.

While the mystery and romantic possibilities of work in the city have been thoroughly advertised, the case of the farm has been but poorly presented at best. It is only within very recent years that effort has been made

to acquaint the youth of the land with the possibilities of farming as a profession, to paint a true picture of country life, and to show that "playing the game" in agricultural work requires just as much ability and offers fully as great chances for unusual reward to the successful, as does any other field of industry.

Boys' and Girls' Clubs Take Active Part.

Last year an army of more than twenty thousand boys and girls of Michigan were actively engaged in the

possibilities of farming. They grower, for ideal conditions and intensive culture were necessary to produce that crop. Nevertheless, Robertson's record proved that proper methods can return unusual production. His acre of potatoes set a goal for others to strive for, and pointed out the way toward a higher average yield in the whole state. Darwin Baker, a garden club member in Lansing, turned a net profit last summer of \$375.30 from four acres of garden land, showing that the city boy need not be left out of consideration when "crops" are up for discussion. Such records as these boys made in 1919 bring a healthful element of competition into farm work.

History of Michigan Club Work.

Boys' and Girls' Club work is comparatively new in Michigan. E. C. Lindemann, the first state-wide leader, took office in 1913, while the first club leader for girls, Miss Anna Cowles, did not start her work until 1915. And yet in these few years the club movement grew and spread until, as has already been mentioned, twenty thousand boys and girls were actively engaged in projects during 1919.

The leaders of the club work are part of the extension staff of the state agricultural college, and their efforts are sometimes known as "junior" extension work. Ray E. Turner, state leader, has five associates on the state-wide staff, including two district leaders for the upper peninsula. There are ten county leaders who devote their full time to the work, and thirty-nine additional county leaders who spend only the summer months in club work. In addition to these heads of organization, more than fifteen hundred volunteer local leaders round out the organization, which reaches practically every one of the eighty-three counties in the state.

The influence of club work is not



Upper Peninsula Boys Clearing Land Before they Can Start their Gardens.

great fight against the "away-from-the-farm" movement. Enrolled under the state-wide Boys' and Girls' Club organization, these progressive members of the younger generation are preparing for the leadership of agricultural work in the state. They are the hope of the future—those who will carry the standards of country life in the years to come.

These club members are learning

Five Hundred Dollar Profit to the Acre.

When John Robertson, of Eben Junction, Alger county, raised three hundred and thirty-one bushels of potatoes from an acre of land last summer and sold his crop for \$612, realizing a net profit of \$509.39, he accomplished the unusual. No one would hold his up as a sample of what could be done at any time by the average



Michigan Can well be Proud of these Club Champions from Various Counties who were Photographed Before the Agricultural Buildings at the College.

limited to the actually enrolled members. Projects carried out by the clubs in any community set their stamp upon the whole neighborhood and serve to stimulate interest in progressive agricultural work. In this way great numbers of boys and girls come under the influence of organized clubs, even though they never actually sign up. Then, too, a constantly changing membership brings club work to an ever growing circle of young people. Michigan Ranks High Among States. Michigan ranks high among the states of the country in the achievements of her boys and girls. During 1918 when interest was stimulated by war work programs, 29,110 boys and girls of the state were enrolled in garden clubs—the record for the whole United States. During the same year six hundred and forty-eight home-canning clubs set another national mark when they numbered 13,234 members, as compared with Nebraska's 6,548 for second place. Again in 1919 girls in Michigan garment-making clubs made or repaired 88,432 garments, giving them a big margin for first national honors, and incidentally making a very important contribution to the fight against the high cost of clothing. One of the most effective means of stimulating work among the boys and girls is the competitive system worked out for the state. By means of it, local pride, as well as individual ambition, is appealed to. County champions are selected first. Then five sectional contests are held, and the winners in each branch of club work in each of these sections then become eligible for the state-wide competition at the state fair. In 1919 the club champions chosen for the state fair exhibit shared in \$150 prize money and received transportation to and from Detroit. Practically one hundred youngsters were thus brought in to the state competition. Honors open to club members are not limited to the state, for Michigan champions are frequently sent out to compete with the best talent from neighboring states. In 1919, Ivan Gal-

(Continued on page 751).

News of the Agricultural World

CALHOUN COUNTY ROLLS UP BIG FARM BUREAU MEMBERSHIP.

CALHOUN county Farm Bureau completed its organization, following the campaign there which netted 2,100 members, Thursday. Each township was represented by one delegate for each twenty-five members. The full delegation of ninety-nine men was present at the meeting. Officers elected were: President, A. J. Flint, Clarendon; vice-president, F. B. Garratt, Pennfield; executive committee, Elmer Ball, Albion; Gardner Smith, Marengo; Joseph Barnes, Newton; M. H. King, Homer; E. D. Bushness, Leroy; Guy Lininger, Clarence.

A GRAIN MARKETING PROGRAM.

GRAIN marketing, the second big department of the Illinois Agricultural Association, is established. A definite program of action is worked out, and an expert director employed. William G. Eckhardt, for eight years Farm Advisor of DeKalb county, will direct the grain marketing work. Because there will be more money to use than the original budget of \$333,000, the appropriation for this committee has been extended from \$15,000 to \$65,000. This department is now on the same basis with the Live Stock Marketing Department, directed by Prof. H. W. Mumford.

SUMMER PROGRAM OF THE NEW YORK FARM BUREAU.

FARM Bureau managers of western New York have recently held a conference in Rochester to lay out plans for the summer season. As one result there will be fifty home labor-saving demonstrations held in June and July, giving attention to electric light systems, pumping and water systems and other facilities that make easier the work of farmers' wives.

Better dairy cows, general improvement of the herds, elimination of slackers cows and the general remedy for raising the average of the dairy cow's production, both in milk and butterfat, were discussed. Probably the longest and most important steps toward such an end is the slaughter of grade bulls and the substitution of the thoroughbred sire. Persistence in such a course could have but one general direction, that of bettering the herd.

Spraying was one of the principal topics of discussion. Professor C. R. Crosby, of the Department of Entomology, New York State College of Agriculture, presented this subject. The departments of entomology and pathology are cooperating with the bureaus in conducting a spraying service for the control of plant diseases and insects. The college has stationed a special field assistant in each county where fruit is an important crop. A relay telephone system has been worked out by which it is possible to get word from one grower to another at critical times, relaying the advice and suggestions of the expert. Growers

will be furnished with special, long-range weather forecasts each night.

In his talk on "Fruit Projects," Professor R. W. Rees spoke of the girdling of fruit trees by mice, which has caused a greater amount of damage than in many seasons past. Under normal conditions Professor Rees would advocate the pulling out of girdled trees under four years of age.

"This year, however," he said, "due to scarcity and the high prices of nursery stock I am advocating the cutting off of the trees just below the girdle and then cleft-grafting, using four or five-inch scions. Trees more than four years of age should be bridge-grafted. Scions for bridge-grafting should be

he cannot be sure his products will pay for this labor. He cannot count his production cost and set a price on his products as the manufacturer and retailer do. Hoover pointed this out. A Wisconsin farmer said: We ought to be in a position to pay hands \$100 a month and charge it to our products, but we can't do it." So with labor shortage, food production will be reduced.

Without doubt the higher wages in the city have deceived many a laborer. He has not stopped to think that the \$50 or \$65 in money plus the other advantages on the farm, make the actual farm wages equal to \$90 to \$130 in the city. He has not counted how in-

from Los Angeles, and will spend a few weeks there with the inspectors of the Bureau of Markets in studying this department of the service.

The inspection service will not be available this year on all California products, it was brought out by Mr. Read. It is going to be started this year and built up gradually. However, full inspection will be available on apples from Watsonville and at a meeting there a short time ago shippers raised \$15,000 to help hire inspectors who will be paid \$10 per day.

AUTOMOBILE TOURING AND CAMPING TRIP FOR MICHIGAN FARMERS.

OUR readers will be interested in this preliminary announcement of the first farmers' automobile tour and camping trip to be made into the northern counties of the state this August. Mr. J. H. Brown, 118 North Division Street, Battle Creek, Michigan, photographer and field editor of the Michigan Farmer, will undertake the responsibility of the publicity end of the tour, and will cooperate with the Western and Northwestern Michigan Development Bureaus and with the Michigan Tourists' Association in the arrangement of details. A story of the proposed trip will appear in next week's issue of this journal. If you are interested, write to Mr. Brown at the above address.

BUY ONLY PURE SEEDS.

THE New York State Experiment Station, through Assistant Botanist M. T. Munn, is warning growers throughout the state to be on the alert for inferior seed and suggests that the farm bureau office be consulted in case of doubt. The warning is as follows:

"Last spring the county agent in each county rendered valuable service by warning farmers against purchasing seeds from certain mail order seed houses located in the middle west that offered inferior seed for sale in this state. Again this season these houses and possibly some others are continuing this kind of deceptive business. They are quoting alluring prices and sending advertising samples to New York farmers. They are doing business under the freedom of interstate commerce and are immune to the operation of New York state laws.

"From the very nature of the cases, substantiated by analyses of the seeds in our seed laboratory we feel that every farmer should be warned against being taken in by such misrepresentations. No farmer should send outside the state for seeds unless he is dealing with an old house of undisputed reliability. We advise that the farm bureau agent be consulted before placing an order for seeds with any firm and that such seeds be purchased on the subject-to-quality basis. As far as the facilities of the seed laboratory will permit, we will give every aid possible to farmers desiring to purchase seeds.

Plan to Pool Michigan's Cherry Crop

TO consider plans for pooling Michigan-grown cherries and standardization of the growing and marketing conditions in the cherry districts of Michigan, Wisconsin and New York states, the Michigan State Farm Bureau has called a meeting of the cherry growers of these states at Frankfort, Michigan, May 19. This action was taken at the request of the growers of Benzie, Manistee and Grand Traverse counties.

In the past there has frequently been conflict between the growers of these three states in the marketing of their products and as this condition has been disastrous to all, the Michigan growers got in touch with those of the other two states and found sentiment ripe for cooperation.

In the formation of better marketing arrangements of Michigan cherries, the Michigan State Farm Bureau has been asked to take an active part and it is possible that in the near future representatives of the Cadillac Potato Growers' Exchange and the Fruit Growers' Exchange will be called together to consider plans of assisting in this movement.

The cherry crop in Michigan this year has excellent prospects. Estimates of the crop of the leading Michigan cherry counties for this year are as follows:

Grand Traverse, 175,000 cases; Benzie, 100,000 cases; Manistee, 30,000 cases; Mason, 30,000 cases; Oceana, 40,000 cases; Antrim, 40,000 cases.

cut at once and the work be done shortly after growth starts."

FARMERS COULD GET LABOR IF ASSURED OF GOOD PRICES.

NO laborer is going to work on the farm if as a whole he sees higher wages and more important advantages in town. We can't intelligently ask him to donate anything to the farmer, nor much to food production. There is no use begging labor to stay on the farm, and that is not the idea. Neither is there any use in begging farmers to produce more food so we can buy it cheap.

The farmer will produce a plenty, is in the business for that very purpose, if he can see how he can do it with profit. We can't ask him to do it otherwise. You can't beg or drive anybody back to the farm, nor do we want to do so. We would like to make conditions, and make known conditions, that would make some fit people want to go back to the farm.

"If the farmer wants labor why doesn't he bid up on it and get it against all competition?" It sounds good, the farmer is willing, but he doesn't dare to go the limit because

secure that city job is, how much loss of time, the cost of strikes, higher expenses and unsatisfactory surroundings, etc.

PRODUCE INSPECTION SERVICE.

THE Bureau of Markets of the federal department of agriculture will this season inaugurate an inspection service on fruits and vegetables at shipping point, something that it has had in mind for several years but which is just now being worked out in a practical way insofar as the bureau is concerned.

This service will be started in California about June 1 under the supervision of F. W. Read, who has for several years been with the government Bureau of Markets in Florida, Kansas City, and for the last year in California. Mr. Read will on the first of June become a joint employee of the state of California and the United States Bureau of Markets and in addition to supervising the inspection service at shipping point, will have supervision of the enforcement of the standardization laws. He was in Kansas City recently on his way to Chicago



Balancing Plant Food Increases Growth. To the Soil on the Left Ammonia and Phosphoric Acid were Added, while to that on the Right Ammonia, Phosphoric Acid and Potash were Applied. (West Virginia Exp. Sta.)

Fertilizing the Orchard

MICHIGAN is one of the important fruit states in the country.

The year just passed over, six million bushels of apples were grown, making it rank as the sixth state, from point of total apple production in the country. However, the production per tree was not as satisfactory. According to the last census, more than seven million apple trees of bearing age in Michigan produced about twelve million bushels of fruit, only a little more than a bushel and a half a tree. Of course, most of the bearing trees produced much more, but the many producing just a few or none at all, brought the average yield down.

The answer is, better care of the trees which are now producing good yields, in order to get even larger yields, and complete renovation of the orchards which are run down. Pruning, spraying, and proper cultural methods, and sufficient plant food in the orchard are all essential. It is one phase of the latter which will be treated here.

The need for plenty of plant food in the orchard is one of the essentials which has been greatly overlooked. A properly balanced ration is as necessary for the apple and peach and small fruit as it is for an animal. It is this which produces the bearing wood, and hence the fruit and quality of the fruit is also dependent upon this. Proper balance must be kept between the amount of plant food elements obtained by the leaves from the air, and those obtained by the roots from the soil, in order to get the large, attractively colored and deliciously tasting fruit. And if plant food is not present in sufficient quantities in the soil, the roots can not get it.

An Extra Hundred Dollars Per Acre.
The Ohio Experiment Station some years ago undertook constructive work on run-down orchards in southeastern Ohio. The yield in practically every case was increased and in some cases was multiplied by as much as ten. The financial gain from this work was often in excess of one hundred dollars per acre per year. Professor F. H. Ballou, in charge of the work, makes the following statements regarding the results obtained:

"It is not in terms of dollars and cents that we can measure the results of those object lessons in profitable fruit production on the formerly barren little farms among the hills of southern Ohio. Farm mortgages have been cancelled. New homes have been erected or old ones remodeled and made comfortable and convenient. Boys and girls have been sent to college, who previously had not the least hope of enjoying such a privilege. New and sturdy teams of horses have replaced the others less strong and pleasing in appearance. Country life and interests have been entirely rejuvenated. And all these hitherto unanticipated, undreamed-of blessings have been showered from formerly neglected, abandoned apple orchards merely existing on thin-soiled, weed-covered or closely pastured hillslopes and crests."

As good results are possible in Michigan orchards.

Plant Food Controls Wood Growth.

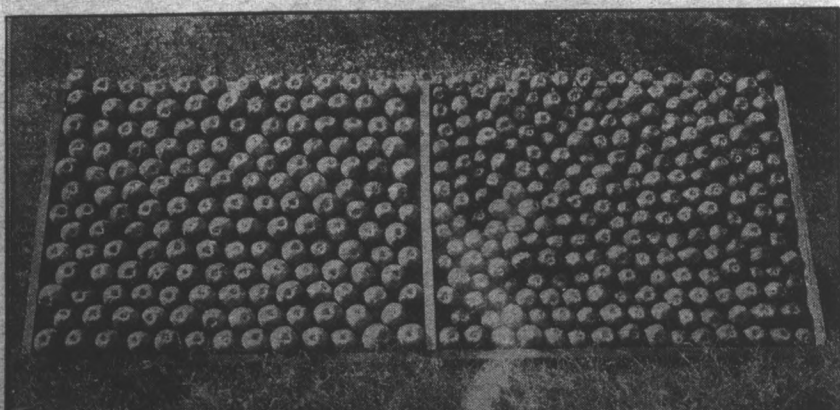
The kind, form and amount of plant food available for the use of the plant controls wood growth. Wherever one of the essential plant foods is lacking, that is—present in unavailable form or in insufficient amounts—satisfactory growth of bearing wood is impossible. With fruits, as well as with all other crops, each of the three essential plant foods has a specific function. Ammonia is the stem and leaf producer. It makes new wood, and gives to the foliage the healthy green color which by experience we associate with thriftiness and vigor.

Phosphoric acid hastens maturity and increases production of fruit. This is seen on corn, is seen on wheat, and is equally apparent, although oftentimes more important, on fruit trees.

Potash strengthens wood growth. It also aids in producing healthy, disease-resistant growth, the kind which allows the production of quality fruits.

Plant Food Must be Balanced.

As mentioned earlier, the plant food must be balanced. The best fertility practice is that which grows enough wood for a full set of fruit, but which also controls the growth, ripens it in time to prevent winter killing, and



Apples on Left are from Fertilized Trees, and those on Right from Unfertilized Trees. Note Improvement Resulting from Use of Fertilizers. (Ohio Experiment Station).

The Gasoline Problem

THE grave problem confronting the serious-minded men in the petroleum industry today, is to keep pace in production with the seven-league strides of the demand for gasoline.

In ten years the production of crude oil in the United States has increased only 96 per cent, while during the same period the output of gasoline has increased 560 per cent.

The demand for no other commodity in general use has increased to a degree that even approximates the mark reached by gasoline.

In ten years the Standard Oil Company (Indiana) has increased its output of gasoline from 150 million gallons to more than 600 million gallons a year.

It is apparent that this could not have been accomplished except by intensive application of improved, scientific methods of refining.

As a matter of fact, the price of gasoline is held in bounds only by the sheer force of science.

Except for the ability of such institutions as the Standard Oil Company (Indiana) to make a wide range of useful products from that part of the crude oil which is not used to make gasoline, you would be paying a much higher price for gasoline than you pay today.

The Standard Oil Company (Indiana) is bending every effort to increase its output of gasoline to meet the demands and to sell it to you at as low a price as possible.

Standard Oil Company

(Indiana)

910 S. Michigan Avenue, Chicago, Ill.

2045

and printed on the pack thus: 4-10-6 does a sod mulch orchard. There also keeps it within bounds so that it may be a difference in soils, sandy soils being weaker in potash and phosphoric acid than loamy soils, while clay soils are richer in potash.

Treatment Recommended.

Just what fertilizer to apply depends very largely on how the orchard is being treated. Tillage increases the availability of soil nitrogen, so for a time—although a limited time—a tilled orchard requires less ammonia than

Commercial fertilizers are valued according to the amount of ammonia, phosphoric acid and potash contained, the amounts being figured in per cents indicating that the fertilizer contains four per cent of ammonia, ten per

cent of available phosphoric acid, and six per cent of potash.

The following fertilizers give apple growers a sufficient range of choice:

Sod Mulch System: Sand 5-7-2; loam 6-8-0; clay 6-8-0.

Tilled Orchards: Sand 3-10-4; loam 3-10-2; clay 3-12-0.

The amount to apply also varies, but four to five pounds per tree, spread on about a month before the

trees blossom, will give best results.

As a fruit grower studies his crop, the relationship between plant growth and fruit production becomes more and more evident and he is then able, sometimes, to change his fertilizer so as to fit changing needs. The above range of analyses, however, fits nearly all needs of the modern progressive apple grower.

A. E. LINDQUIST.

Congress, Good Roads and Profiteers

Law Makers Consider Other Problems of Interest to Farmers.

FEDERAL highway construction is coming to the front as a highly important question in the minds of many farmers and representatives of farm organizations. I find, however, that there is a difference of opinion as to just what part of the good roads program should be undertaken by the national government.

There are a number of highway improvement propositions before congress, but the Townsend bill is apparently the only one that is just now being seriously considered. This bill has been recently redrafted, and Senator Townsend is evidently desirous that it shall be the foundation legislation for the establishing of a practicable system of permanent federal highways that will serve to the best advantage all the people of this country.

Under the Townsend bill the highways are to be constructed and maintained wholly by the federal government without state or local aid. They are to give ingress and egress at three points in every state. It is further provided that if these three points of ingress and egress do not give each state its proportion of federal aid, additional roads may be constructed. Two years will be spent in laying out the national system, and the government road builders, it is expected, will cooperate with the state and local road authorities with the ultimate plan in view of a great network of highways connecting the larger cities, a state road system connecting the smaller cities and towns with the government roads and country roads connecting the remote farming communities with the state highways.

The federal highway council believes that "it is the duty of the government to take over about 60,000 miles of the main highways to construct and rebuild, where necessary, as a national system, the states to take over about 240,000 miles as a main state system and the counties to take over some 300,000 miles of market county roads, making a system of 600,000 miles of which between 200,000 and 250,000 miles have been improved, leaving between 300,000 and 350,000 to be improved." The council is advocating the creation of a federal highway commission of five members, selected geographically, with authority to take over the present highway activities of the United States Department of Agriculture in cooperation with the states in the expenditure of present and future appropriations for federal aid.

Prof. T. C. Atkeson, Washington representative of the National Grange, while favorably impressed with the purpose and main provisions of the Townsend bill, stands with the National Grange in its public highway policy, as presented in these resolutions adopted at the last session.

"The present and potential development of high power motor trucks and high-speed passenger cars practically revolutionizes the highway conditions and necessities of this country, and with due regard to the demands of the present and the future necessities for permanent, hard-surfaced highways,

we believe the time has come when all the national government activities should be unified in a single administrative department, under such limitation of powers as will secure the greatest possible degree of efficiency and economy in the expenditure of national funds.

"In view of the large number of bills which have been introduced in the last two or three congresses, and of the failure of all the activities and organizations interested in the promotion of highway development and construction to agree upon the details of legislation, we deem it inadvisable to approve any specific 'bill' at this time. We favor the working out of a national highway law that will best serve the welfare of the whole country and distribute the expense of highway construction equitably between the beneficiaries. National Grange instructs its authorized representatives to assist in perfecting a law of this character in accord with the needs of agriculture.

"For the present and until such time as experience may demonstrate some better plan, we favor the continuance of the present cooperative plan between the national government and the several states, with the primary purpose of connecting farms of the country with market towns, railway and water transportation points, with increasing use of federal funds for that purpose."

There will be hearings on the revised Townsend bill soon, at which time there will no doubt be much information presented which will show the necessity for federal aid in highway construction, and the development of a system that will meet the demands of all classes.

Congressman John M. Baer, of North Dakota, has introduced a bill in the house to prevent gambling in the necessities of life and speculation in stocks and bonds. It is known as the Anti-speculation Act, and provides that no person or persons shall buy or sell any necessary unless it is the intention to effect actual delivery of such necessary. The term necessary includes any product or by-product which is to be manufactured into food for human beings, domestic animals or poultry, fuel, wearing apparel, or other commodity necessary to life. No person is allowed to obtain a loan from any bank which is a member of the federal reserve system, nor shall such bank lend in any manner, any money or credit with which to speculate in necessities. Wilful violations of the provisions of this act are punishable by a fine of not more than \$3,000 or by imprisonment of not more than three years, or both for the first offense, and a fine of not more than \$5,000 or imprisonment for five years, or both, for each succeeding offense.

The Federal Reserve banks have

been charged with having financed the operations of speculators to the extent of enabling them to hold back the food supplies and thereby force up the price, and it is the purpose of the Baer bill to prevent the banks from lending their aid to food-holding profiteers.

As a flayer of profiteers, Senator Arthur Capper, of Kansas, has few equals. Speaking on the high cost of living, the other day, Senator Capper said that "strikes and industrial disorder have come as the result of rampant, long-continued and unrestricted profiteering. No county can be enriched by the gouge process. Our delusion of prosperity continues, but our business is declining as might be expected. Prices for American products have increased to such an extent that both the home and foreign markets are failing us. The extent to which the people have been bled by war and extortion is almost unbelievable. And at this moment the most brazen challenge we have had in the saturnalia of greed comes from the gamblers in sugar. A corner has evidently been formed right under the eyes of the Department of Justice. The canning season raid is on. For years the sugar interests have annually and openly and shamelessly robbed American housewives during the canning season."

Senator Capper quoted recent government reports showing that 79,624 American corporations, many of which have stockholders who are dodging the income tax through stock dividends, averaged gross profits of more than \$500,000,000 each in a single year. In just one year during the war the gross income of American corporations rose from thirty-five and one-third billions to eighty-four and a half billions. "Do you suppose," he continued, "that people who pinch, scrimp, and are being forced to do without many things they need in order that we may double the number of pre-war millionaires, thrill with patriotic fervor when they read a lesson on thrift and one hundred per cent Americanism from one of these one thousand per cent tax-dodging grandstanders?"

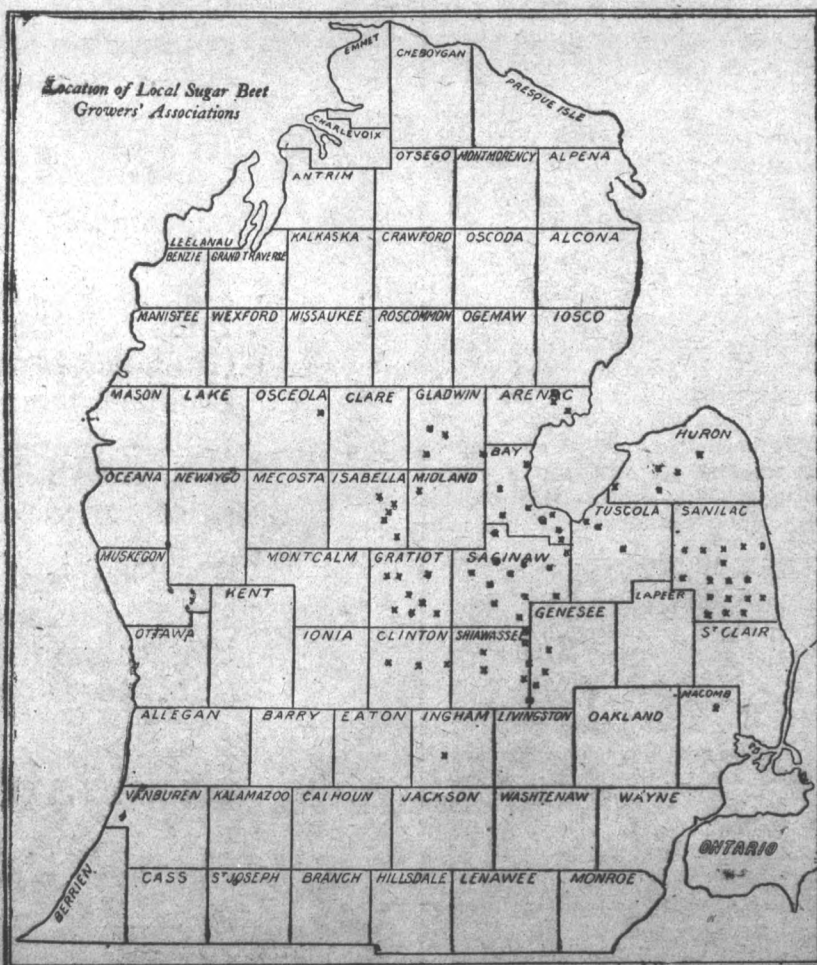
Ample laws exist to check profiteering, according to Senator Capper, and if the law enforcement officers of the government cannot enforce the law he thought they should resign.

Endorsing Senator Capper's denunciation of profiteers, Senator Lenroot of Wisconsin, said the Department of Justice was "setting a few mousetraps around the country when it ought to be setting bear traps."

There is a decided feeling in congress that the government through its inactivity is largely responsible for the present hold-up and high price of sugar, and it is believed that only drastic measures promptly put in force will prevent the people from being compelled to pay from thirty to forty cents a pound for sugar before the end of the season. Representative Tinkham, of Massachusetts, asserts that if the present price of sugar is maintained by the producers the American people

(Continued on page 732).

Michigan Beet Growers' Organizations



Crosses Show Location of the Various Local Sugar Beet Growers' Associations Organized During the Recent Membership Drive.

Low Bacterial Count in Milk

What Every Farmer Can do to Keep Down the Number of Bacteria--By C. R. Stull

A GREAT many articles have been written advising the farmer how to reduce the number of bacteria in milk to the minimum, but most of the methods were so complicated and expensive that the ordinary farmer has paid very little attention to them. There are, however, many simple methods of sanitation which any farmer can apply, that will aid greatly in decreasing count as well as making things more pleasant and profitable for himself.

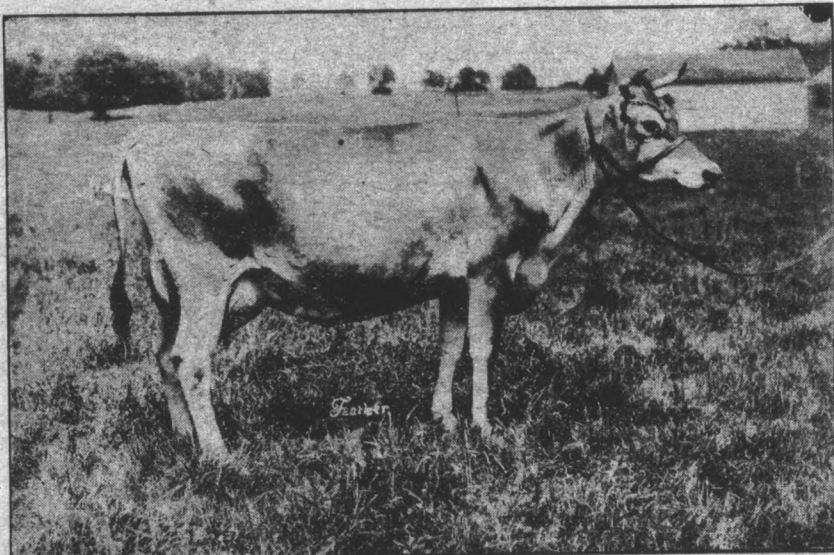
There is no dairy in the country whose efficiency in producing clean milk cannot be raised to a standard far above that of the present time. Some farms are far beyond redemption, but on the main dairy farms, whether those of small farmer class, with a herd of a dozen cows or less, or a score of cows, are capable of a great improvement and this is of simple and inexpensive means.

The very fact that milk is a food, not only for infants but for grown people as well, will suggest to every man that the rules of cleanliness are far below what they should be. The need of cleanly precautions is increased because milk has a peculiarly active capacity for absorbing all odors, and is a very favorable medium for the growth and development of disease

out suffering contamination. A soft and muddy surface should be drained, the pools filled in, and a new surface made with some available material at moderate cost, such as crushed stone, gravel or cinders.

The sanitary conditions must travel from the yards on down the path to the stable. It would be of no value to have a clean yard without a sanitary stable, when the farmer, on the approach of winter, puts his herd indoors to afford them shelter against cold and stormy weather, he exposes them to danger hardly less fatal. Even if the buildings which may be described as a cow barn is constructed to suit the needs of the dairy cattle, in a majority of instances the winter quarters are a combination structure used for feed storage, horse stable, wagon shed, and general rubbish disposal, and generally the herd will be allotted the basement or ground floor beneath a low, dirty ceiling, with scanty window space and poor ventilation, keeping in circulation the foul air for months.

Inside the barn the manure is the common source of contamination. The sight of a dairy cow with manure flanks is so common that it has come to be accepted as the distinction badge of a dairy animal. It denotes neglect and shameful laziness on the part of



Cows Kept Under Sanitary Conditions Produce Clean Milk.

bacteria, its color and taste are by no means an indication of its quality.

The number of bacteria which contaminate the milk at milking time vary immensely with the conditions of the stable. If milking takes place immediately after feeding and cleaning the stable the number of bacteria from this source is very high. Fresh air out-of-doors does not contain many bacteria and if milking could take place in the open, free air, this source of contamination would be almost excluded.

Milk is the only article of food in which nearly all bacteria grow rapidly, and in it they multiply in an almost incredible manner. From a single germ as many as two hundred may be produced in three hours, ten thousand in six hours, and two million in eighteen hours, and as the bacteria grow and increase in number they impair the nutritive value of the milk, and produce new substances which in many cases are poisonous.

In order to produce better milk we must improve our sanitary conditions. The practice of enclosing cows in a small yard between two buildings, or in a narrow, filthy pen should be abandoned. If a man cannot dispense with the small, undesirable enclosures, he should at least keep them sanitary, so not only the herd, but also the members of the family may cross it with-

the animals' keeper and the man who stands by and watches the noxious stuff thicken day by day, is unfit to associate with the dairy cow.

It is accepted that if an animal is dirty, the keeper, and not the animal, is to blame. In summer when she is pastured and at liberty to follow her own devices, she can select her own bed, and it is a clean one: she uses the brush for a comb, and water provided by nature and aided by her tongue, washes and grooms her own body, keeping it free from bacteria.

The milker should take all possible sanitary measures as well as forcing them on the cow. Before milking he should thoroughly wash his hands and arms in warm water well supplied with soap, dress in special jacket and cap in order to avoid all dusting, and distributing of undesirable organisms. Before beginning to milk the milker should wipe off the teats with a towel, which should be kept in the pocket of the jacket at milking time. The milker should be careful not to handle a dirty milking stool, wipe the udder or teats, or brush the side of the animal with the naked hand. The practice of leaning the head against the cow's body should be abandoned, and the practice of using covered milk pails should be encouraged.

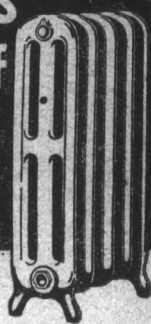
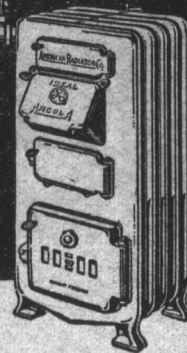
In general, few articles should be used in the ordinary dairy routine, and

NEW WAY of Heating

cellarless Houses

Complete outfit of Hot Water Heat

\$131



The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5, or 6 AMERICAN Radiators and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See prices below for various sizes of outfits.

Here is the greatest comfort for farm life offered to you at pre-war price. The IDEAL-Arcola heating outfit will never wear out. It will outlast the building itself. There is no other contrivance which will heat your home with as much economy in the use of fuel. Nothing else is as safe or as easy to run. It is the solution of the farm-house-heating-problem.

IDEAL-Arcola Radiator-Boiler Farm Home Heating Outfits

Any Dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B Size IDEAL-Arcola with 100 sq. ft. of Radiation	\$131
	" 2-B " " " " " " " " " " " "	150
	" 3-B " " " " " " " " " " " "	163
	" 4-B " " " " " " " " " " " "	198
	" 5-B " " " " " " " " " " " "	234
For Hard Coal	No. 1-A Size IDEAL-Arcola with 135 sq. ft. of Radiation	\$150
	" 2-A " " " " " " " " " " " "	161
	" 3-A " " " " " " " " " " " "	191
	" 4-A " " " " " " " " " " " "	234
	" 5-A " " " " " " " " " " " "	279

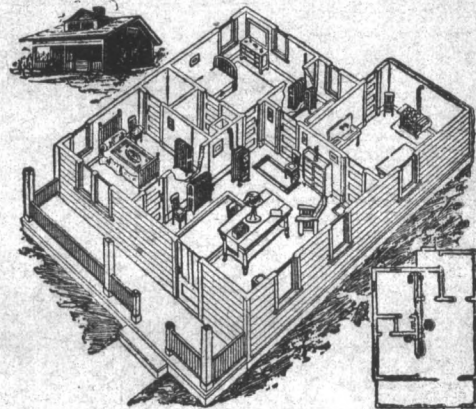
Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. EASY PAYMENTS, if desired. Outfits shipped complete f. o. b. our nearest warehouse—at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.



Simple way of heating a 5-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and 4 AMERICAN Radiators. Ask for catalog (free) showing open views of heating layouts of 4-, 5-, 6-, and 7-room.

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

AMERICAN RADIATOR COMPANY

Write to Department F-3. Chicago

Best Locking Device Ever Made



West Bend BARN EQUIPMENT

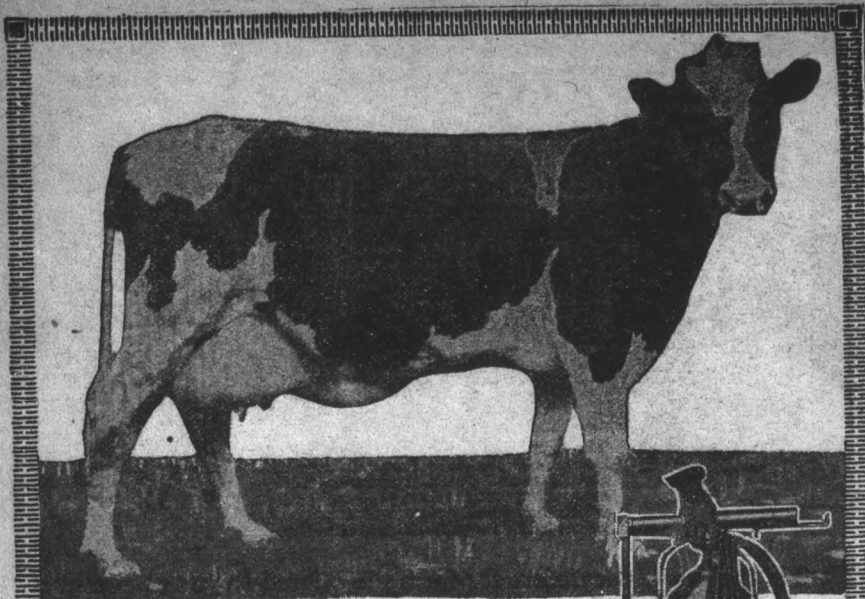
An improvement found only on West Bend Barn Equipment. One lever locks in or releases from 2 to 50 cows instantly, and also operates cow-stops. Saves thousands of steps. Simple, practical and indestructible. Used on the best dairy farms everywhere. Our steel stalls, mangers, pens, litter carriers, ventilators, water bowls and other dairy barn necessities are your best investment. Get our

Big, FREE Barn Equipment Book

Explains entire line, also our special FREE service to farmers building new or equipping old barns with the best labor-saving devices. Blue prints furnished. Drop us a postal for full information. We are helping thousands of farmers make more profit out of their barns. Why not you?

Write TODAY

WEST BEND EQUIPMENT CO. 280 South Water Street WEST BEND, WIS.



Milking Good Cows Everywhere

Not only is the Hinman Milker being used on thousands of the country's finest cows, but it is milking many cows that were hard to milk by hand and that other machines couldn't milk at all.

The above is a record cow, May Altoona Cornucopia, 3rd. Note the size teats. The Hinman has different sized teat cups to fit different sized teats—and so the Hinman will milk a cow with small teats the same as one with large.

HINMAN MILKER

The simplest of all milkers, the one that has stood the longest test of time and that has been used on more cows than any other. And, because it is so simple, its first cost and upkeep cost are low and it requires less power to operate it. It is by far the easiest milker to keep thoroughly clean and therefore helps always to produce clean milk.

Have You Seen This Catalog?

If not, write for a free copy, because it is worth reading and has many interesting pictures. A post card will bring it.

Hinman Milking Machine Co., Oneida, N. Y.

these should be of simple construction. Every surface which milk touches offers an additional chance for contamination, so in the passage from the cow to the consumer the fewer vessels it touches the better. All utensils should be washed at once after use, as the milk thickens on the sides and bottom of the vessel, while the bacteria are increasing at a tremendous rate.

A very common practice, and yet a poor one, is to store apples, vegetables, and other products in the dairy rooms, with milk, milk products, and utensils. The dairy room should be reserved for its set purpose because of the necessity of its being always kept scrupulously clean, no storage should be permitted, and all small animals should be excluded.

Good milk can no longer be decided on the grounds that it contains a required percentage of solids and is free from deleterious chemicals, but it

must also be subject to the test of bacterial contamination. Since bacterial contamination may result in the conveyance of contagious diseases, such as typhoid, diphtheria, scarlet fever, and tuberculosis, it will be admitted that it is a factor deserving of attention.

Cheapness is the one consideration, and low-priced milk is accepted, regardless of the condition of the dairies, the health and treatment of the cows, and the unclean person handling the milk.

Improving the sanitary condition of the dairy is like helping people who will not help themselves, but in the progress of the movement for clean milk this phase of it must sooner or later receive attention. It is so great and affects so large a proportion of the population that eventually the state will have to grapple with it. Until then, let us see what we can do.

Dorr D. Buell

MORE of our readers will want to know what a good-looking fellow the executive board of the Michigan State Farm, Bureau selected to head the biggest cooperative business enterprise ever undertaken in the country. Here he is—Mr. Dor D. Buell. He has very successfully guided the Michigan Potato Growers' Exchange through two seasons of unusually big business. He depends upon good reason and diplomacy to get results rather than upon bluff or force. He takes things as they are, looks matters over calmly, gathers all facts in the case, hears whoever wants to speak, and then tries, and usually succeeds, in giving a square deal to all concerned.



Congress, Good Roads, Profiteers

(Continued from page 730).

face a one billion dollar increase in their annual sugar bill.

It has been shown at the hearings that in August and September last the Sugar Equalization Board recommended to the President the purchase of the Cuban crop of 1919, as had been done in the case of the 1918 crop. It was said that the Cuban crop could be purchased for six and a half cents a pound at that time, a price which would have permitted the sale of sugar in the United States at eleven or twelve cents a pound retail. The President withheld this approval and in November when sugar was selling at retail at ten cents a pound, the attorney-general concurred in a price of seventeen and eighteen cents at the plantations for Louisiana sugar. The effect of this action was to advance the Cuban sugar price from six and one-half to eleven cents a pound and it has since gone to eighteen cents. A conference between representatives of the big refineries has been held, but with little results, so far as I have been able to discover.

Secretary of Agriculture Meredith is appealing to business men and college students to spend their vacations working on farms. He says carefully compiled reports to the department indicate that the supply of farm labor is only seventy-two per cent of normal, compared with eighty-four per cent last year, notwithstanding an increase of twenty-five per cent in wages.

The National Forest Reservation Commission, composed of the secretaries of Agriculture, interior and war, and four members of congress, recommends the purchase by the government of land in the eastern mountain districts not suitable for agriculture to the extent of thirty million acres, and that they be used for growing timber. The government now owns one million eight hundred thousand acres of this territory.

Colonel W. B. Greeley, chief of the national forest service, strongly urges not only the government purchase and planting of tillable lands to forests, but the encouragement of private interests to plant and develop forests, as a means of guarding against further paper famines, and lumber shortage.

I am reliably informed that the juniper report favorably on the Capperdiciary committee of the house will Hersman farmers' collective bargaining bill, but there is a fair chance for the Volstead bill to get out onto the floor of the house this session. The committee on agriculture has ordered a favorable report on the cold storage regulation bill, under which all articles excepting fresh fruit and vegetables stored for more than thirty days must be stamped to show the length of time in storage.

The "don the overall" fad is popular in Washington now, but it is questionable whether it will very seriously punish the clothing profiteers. There are several million farmers and wage earners in this country who wear overalls. Possibly throughout the nation, after the "blue denim" movement has subsided, it will be found that two hundred thousand clerks, business and professional men and politicians have joined the overalls army. But the publicity given the movement has already enabled the dealers to boost the price of overalls and jumpers. If the price is boosted one dollar a pair because of this movement, it will cost the wage earners and farmers in the aggregate millions of dollars, while the clerks will have the satisfaction of postponing the buying of their usual supply of clothing a few weeks. The trouble districts not suitable for agriculture to the extent of thirty million acres, and that they be used for growing timber, just and the unjust, and seldom accomplish the results desired by those who are carried away by them.

E. E. R.

GALLOWAY'S SALE OF SEPARATORS



You get your new Galloway Sanitary Separator right fresh from my factory floor. You buy in the most economical way—the modern way of doing business. That's just why the price is lower.

EASY PAYMENTS

When you buy from Galloway you have your choice of five easy buying plans—cash, bank deposit, half cash, half note; full note; installment. Select the plan which suits you best.

Write TODAY!

Send for Galloway's big, new Separator Book with full particulars, or order from this ad. Satisfaction guaranteed or money refunded.

The Wm. Galloway Co.
Box 183
Waterloo, Iowa

Shipped from Close-by Points

"B-V-T" Silo

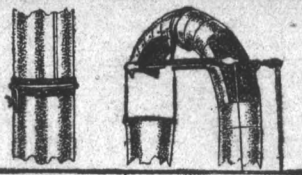
Will last forever. You will never have to rebuild it! Neither will your grandchildren. Built from the famous BRAZIL VITRIFIED FIRE CLAY. The "B-V-T" has been on the market nine years without a failure.

Send for Catalog D
Brazil Hollow Brick and Tile Company
BRAZIL, INDIANA

Cabbage Plants, 400,000. June and July delivery. Ball Head, other leading varieties. Parcel Post, prepaid. 100, 50c; 500, \$1.00; 1,000, \$2.75; 5,000, \$12.50. Cauliflower, 100, 75c. Every plant a good one.
W. J. MYERS, R. 2, MASSILLON, OHIO

Ito San Soy Beans. Genuine Grimm and Montana grown Alfalfa. Seed Potatoes. Write today for special seed price list. A. H. FOSTER CO., Allegan, Mich.

A Hard Job Cut in Half



Pulley to raise inside pipe from ground. Easy thumb nuts that can't lose, connect pipe quickly and hold it rigid. Cast iron inside elbow prevents wear. Thicker gauge galvanized pipe gives almost double wear.

APPLETON Silo Filler

Has adjustable cutter bar, real shear-cut knives, roller bearing feed table, extra feed web above the throat. Blower and knives belted separately. A score of other advantages described in free book No. K Write.

APPLETON MFG. CO.
Batavia, Ill. Minneapolis, Minn.
Omaha, Neb. Columbus, Ohio.

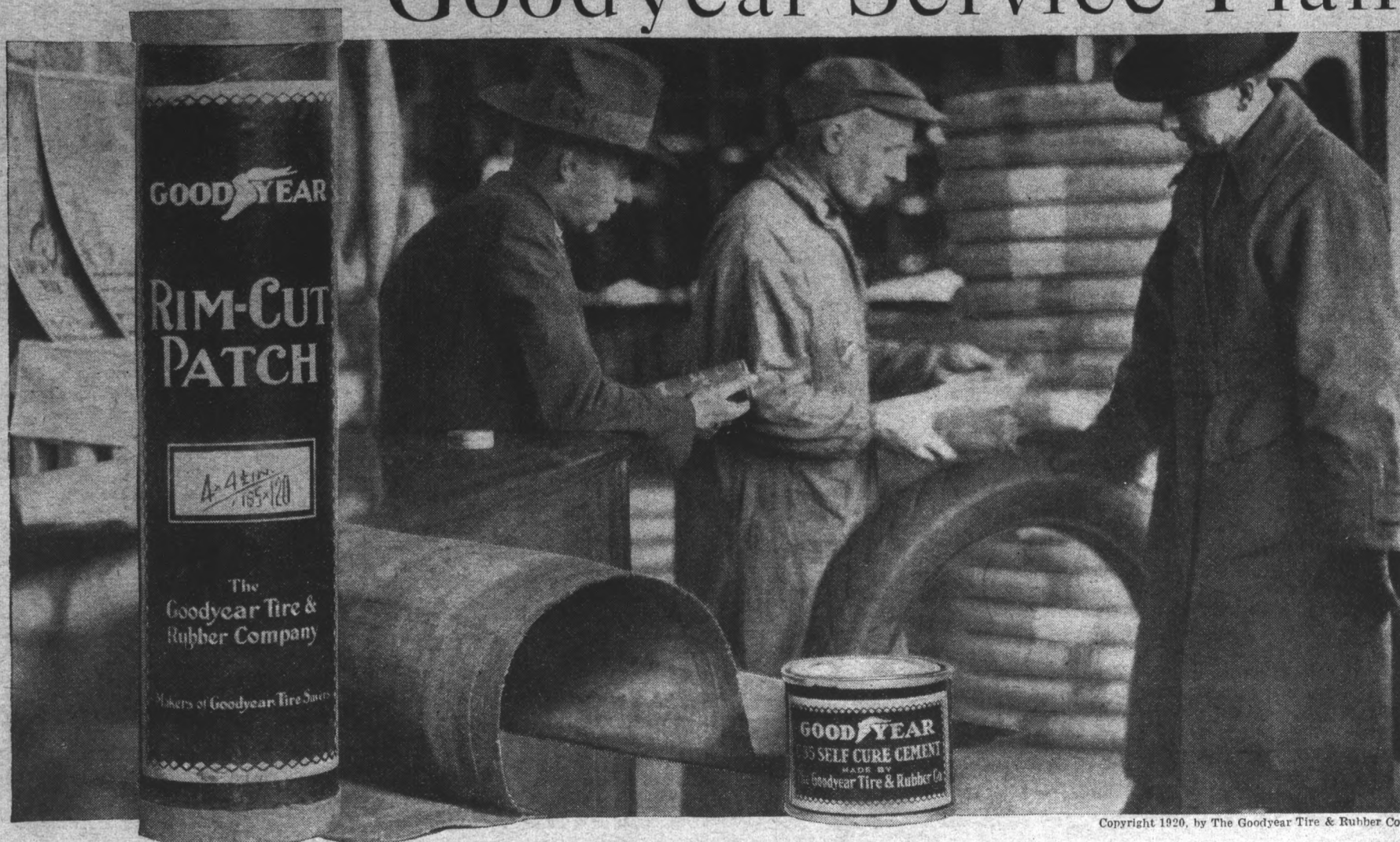


GET FREE BOOK

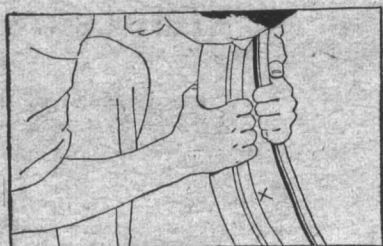
Binder Twine

and Hay Rope. Get our prices before buying. A. H. FOSTER CO., Allegan, Mich.

Greater Tire Mileage—and the Goodyear Service Plan



Copyright 1920, by The Goodyear Tire & Rubber Co.



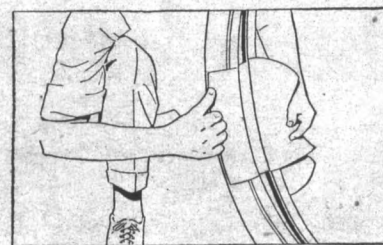
FABRIC BREAK

A fabric break may be repaired on the road by using the Rim-Cut Patch without cement. It should be vulcanized later. If the tire is too old to be worth vulcanizing, a satisfactory repair can be made by using the Rim-Cut Patch and CEMENTING IT IN with Goodyear C-35 Patching Cement. To do



RIM-CUT PATCH BEING INSERTED

this follow these directions: First be sure that the fabric at the break is dry; then clean the inside of the tire at the break with gasoline; after it is dry apply two coats of C-35 Patching Cement, allowing each to dry. Give the outside of the patch the same treatment; insert the patch by seating the toe of



REPAIR COMPLETE

the tire bead in the crease in the patch wing. Now work the patch down all the way across the tire, pressing it down firmly and smoothly, and then adjust the other wing of the patch around the other bead. For cord tires, the Goodyear Cord Patch is the ideal tire saver to use.

EVERY Goodyear Tire Saver, like the Rim-Cut Patch illustrated, is designed to insure that greater mileage which is the purpose of the Goodyear Service Plan.

To the fine quality of Goodyear Tires and the convenience of their distribution, this plan adds effective means of prolonging the usefulness of injured tires.

In the case of a fabric break, for example, it provides in the Goodyear Rim-Cut Patch a dependable emergency repair which protects

the tire until a permanent repair can be made.

But in addition to tire savers, the Goodyear Service Plan provides also tire conservation lessons, instructive advertising and the helpful advice of Goodyear Service Station Dealers everywhere.

Take full advantage then of the Goodyear Service Plan. Ask your Goodyear Service Station Dealer for the Conservation Bulletins; use his advice; keep Goodyear Tire Savers in your car—these are the means to greater tire mileage.

GOODYEAR

TIRE SAVERS



—“and from there we went to Japan”

Talk about adventures!

Men in the Navy come home with the kind of experiences that most chaps read of only in the books.

Here's your chance!

Uncle Sam has, as you know, a big Navy and gives red-blooded young fellows like you an opportunity to step aboard and “shove off”.

What will you get out of it? Just this:

A chance to rub elbows with foreign folks in strange parts of the world.

The chance for good honest work on shipboard—the kind of work that teaches you something real: the kind of work that puts

beef on your shoulders and hair on your chest.

You will get 30 care-free vacation days a year, not counting shore leave in home or foreign ports.

You will have the kind of comradeship in travel that sailors know.

You will have regular pay, over and above your meals, lodging and your first uniform outfit—good stuff all of it.

You can join for two years. When you get through you'll be physically and mentally “tuned up” for the rest of your life. You'll be ready through and through for SUCCESS.

There's a Recruiting Station right near you. If you don't know where it is, your Postmaster will be glad to tell you.

To any Father and Mother:—

In the Navy your boy's food, health, work and play, and moral welfare are looked after by responsible experts.

Shove off! - Join the U. S. Navy

BICKMORE'S

YOU LOSE MONEY
every time you lay your horses up for sores. Use Bickmore's Gall Cure—cure them while they work! Money back if it fails. At all dealers, 35c, 70c, and \$1.40. Also ask for Bickmore's Horse Liniment.

For yourself, always keep handy Bickmore's XYZ Skin Ointment and Bickmore's XYZ Family Liniment. Ask your dealer for them.

GALL CURE

DICKEY GLAZED TILE SILOS

“The Fruit Jar of the Field”

Your Banker Will Tell You That a Good Silo is Good Investment.

Send for catalog No. 9.

W. S. DICKEY CLAY MFG. CO.,
MACOMB, ILL.
Kansas City, Mo. Chattanooga, Tenn.

Farm Hand, married and a good worker wanted on Michigan Farm. Good wages and excellent working and living conditions.
O. F. FOSTER, Pavilion, Mich.

Please mention the Michigan Farmer when writing to advertisers.

Warranted to Give Satisfaction

Gombault's Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeney, Capped Heel, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

Tonic for HORSES run down or affected with Heaves

A run-down, sluggish, “heavy” horse can't do its full share of work. Tune up his system, cure the Heaves and you have a horse worth its full value in work or in money. Send today for

Fleming's Tonic Heave Powders
\$1.04—over tax paid—per plug. Satisfaction or money back. Fleming's Vest-Pocket Veterinary Adviser helps you distinguish Heaves from other ailments. Write for the Adviser. It is FREE.

FLEMING BROS., Chemists
252 Union Stock Yards, Chicago, Illinois

Our Service Department

MARL AS A FERTILIZER.

I have on my place a marl bed of very high test. My land is gravelly loam and run down. Will this marl be of any use as fertilizer on this land?

Barry Co.

A. N. C.

Experience has shown that marl is carbonate of lime deposited by small plants in shallow lakes. Many gravelly soils contain enough lime so that lime is not necessary, or is at least, only used in small quantities. However, the practical way of knowing whether or not enough lime is in your soil is to ask yourself whether or not you have had a good stand of clover recently. Considering the loss of clover seeding from drought or from other causes, ninety-five per cent of the lack of seeding in the state is due to lack of lime in the soil.

Every farmer should know that the function of the lime is not only that it is of value to the plants which are grown on a lime soil, but that its greatest value comes in feeding the germs of the soil which take the nitrogen out of the air and make it available for plant use, and which live in the soil and on the roots of legumes, in the tubercles and nodules of clover, alfalfa, soy beans and cowpeas. The germs which break down the insoluble substances in the soil need lime; the germs which convert organic matter into soluble material need lime, and so the answer to the question as to whether or not marl will be of any use as a fertilizer can be stated affirmatively, even if you are getting a fair stand of clover. It should be noted in this connection that marling is a common practice in European countries, particularly in the British Isles has it reached a very high point of perfection. The practice of going over the farm every six or seven years so that every field has had a very heavy application of marl once in seven years, is very good. Speaking with old Scotch farmers, one will find that this is considered most essential in their agriculture.

The procedure you ought to follow is this: Find out by having a simple test made by your county agent or the agricultural college, whether or not your soil is acid, then it will be necessary for you to do a little testing of your own, as to how much marl should be applied, applying in strips of various quantities, up to as high as seven yards to the acre, and see for yourself what application brings the best results. You will be readily convinced that the drawing of marl is a profitable practice, if the marl is accessible.

H. J. M.

POULTRY HOUSE QUESTIONS.

We are planning on building a hen house this summer and would like some advice. We are putting up a silo of cement staves made by pressure, staves eight inches by thirty inches, and the company claims that it would be suitable for a hen house. Is cement the proper material, and will it make a hen house damp and cold, even with proper ventilation? Is the semi-monitor style any better than the common slant roof? Also what about muslin curtains? Does one need to provide any more protection in cold weather?

Washtenaw Co.

Mrs. P. C.

The cement staves made by pressure might make a good hen house as the company claims. We have never had experience with them and would advise you to ask them for addresses of poultry owners who have constructed such hen houses and then write the poultrymen for their opinion of the

houses. Few farmers like to be the first to try out a new building material at the present price of construction as they can hardly afford to be experiment stations.

Cement has been used with success in making hen houses and does not seem to be too cold or damp when the ventilation is right. However, most commercial poultrymen have been sticking to the houses built of lumber because they have been as cheap as any material and have always given satisfaction.

The semi-monitor style of poultry house is no better than the shed-roof type of house. Some poultrymen like the shed-roof the best as it is cheaper to build and they consider it a little warmer than the semi-monitor. Where the open-front windows are protected with muslin curtains no other protection is needed and the curtains are only lowered during storms and very cold weather. Most poultrymen like some glass and some open-front on their poultry houses. Then the houses will be light even on days when the curtains are down. Of course, the open-front should also be protected with quarter-inch mesh wire cloth nailed on the inside to keep out sparrows and thieves and keep in the birds. The wire cloth helps to break the wind.

R. G. K.

PIN-HEAD OATS.

What are pin-head oats? What are steel-cut oats?

Mason Co.

G. E. C.

“Pin” oats or “pin-head oats,” are terms used in describing thin, poorly filled kernels. During adverse seasons oats may fail to fill properly and there will be a large proportion of these pin oats. Some varieties tend to carry a greater proportion than others of poorly filled oats. Oftentimes pin oats will consist of only the husks with a mere vestige of kernels. A high proportion of pin oats lowers the weight per bushel and the feeding value of the oats.

I am not familiar with the term “steel-cut oats,” but think it may refer to “clipped” oats. Clipped oats are oats which have been driven by a strong blast of air against a steel cylinder, which clips off the ends of the oats, increasing the weight per bushel and reducing the volume. Oats are often put through the process of clipping when they are to be shipped a long distance.

J. F. C.

PLANTING SUN-BURNED POTATOES.

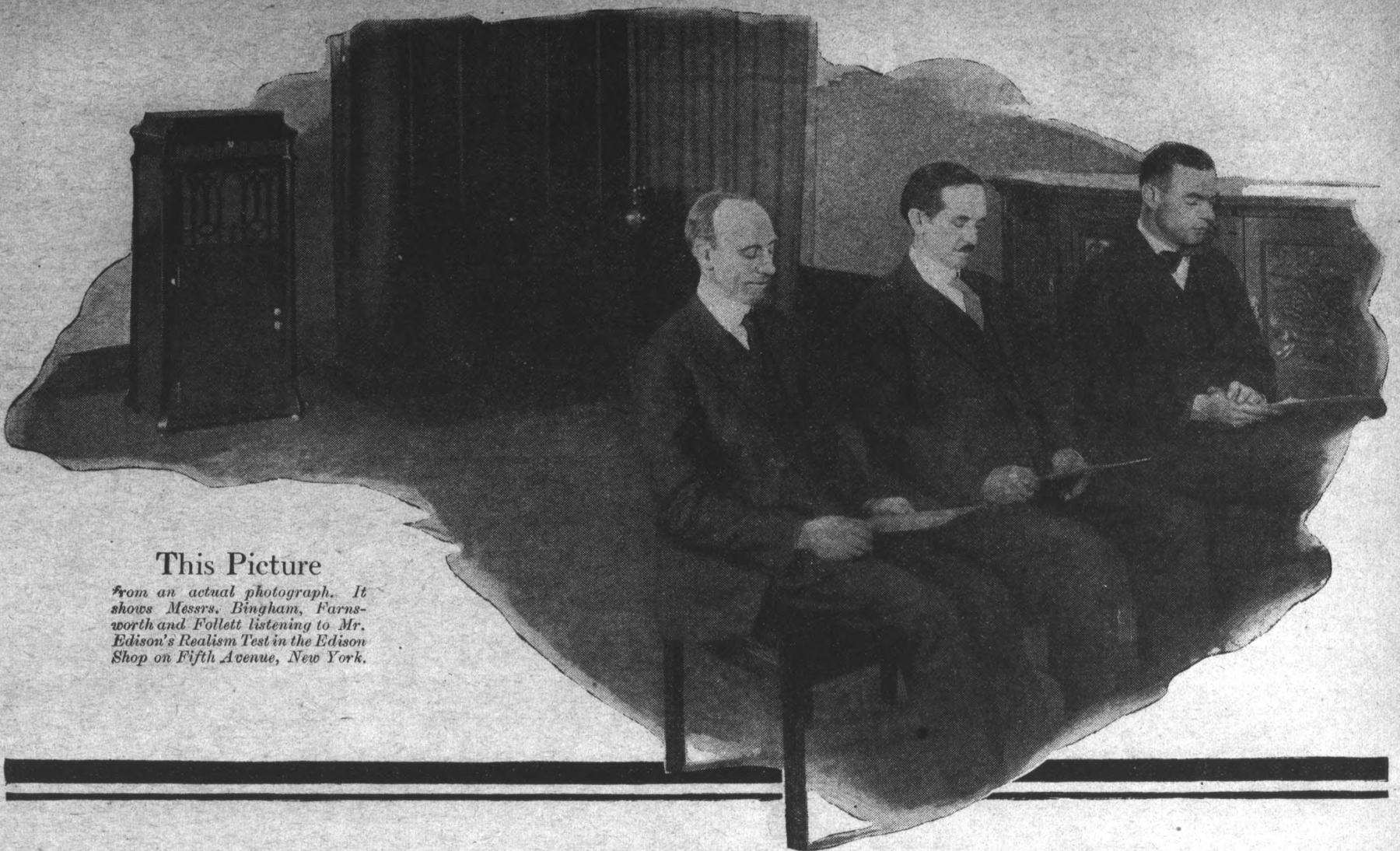
I have some potatoes, grown last season, of which quite a number are green at the ends, due to not being covered with earth. Will these potatoes be good for planting this year?

St. Clair Co.

A. B.

Potatoes which have been exposed to the sun are in no way injured for seed purposes. If these tubers are of good form and not diseased, there is no reason why they cannot be used for seed purposes. In fact, there is some advantage in having the tubers “greened,” or “green sprouted,” by exposing them to the light for several weeks before planting. Potatoes that are treated in that way will come up very quickly and the tubers which will not make good growth can easily be detected after the sprouting process has gone on for some time. If the seed is to be treated this should be done before the sprouting is started.

C. W. W.



This Picture

From an actual photograph. It shows Messrs. Bingham, Farnsworth and Follett listening to Mr. Edison's Realism Test in the Edison Shop on Fifth Avenue, New York.

Famous Psychologists Try the REALISM TEST

—Scientists from American universities find that strange things happen during Mr. Edison's new musical test. Wouldn't you like to try the same test?

THERE'S no woman in this picture. Anybody can see that. Yet these three men declared they heard her. I was there when they made their astounding statements—in the Edison Shop, on Fifth Avenue, New York.

In the rear of this temple of music is a great hall, where there's usually a concert going on. On this particular day its doors were half open. Inside it was half dark—and silent as a church at midnight.

Then a voice floated to my ears from within. It was an exquisite voice, singing just a sweet, simple song. It had that appealing sort of beauty that reaches down inside you and makes you feel lumpy in your throat.

I looked through the doors to see the singer. But I saw no singer at all—just three men seated with their backs toward a phonograph. Their heads were bowed. The magic beauty of the ballad had fixed them with its spell.

The music died away. The three men did not stir. They seemed lost to the world.

Finally one found his voice: "I could have sworn there was a living singer behind me. It was marvelous. Carried me back to a certain summer I spent in my youth."

The second man said: "I felt the presence of a living singer. She was singing—

free and unrestrained. The accompaniment seemed by a separate instrument."

The third then spoke up: "The music filled my mind with thoughts of peace and beauty."

I didn't know what to make of it until some one explained. It was Mr. Edison's famous Realism Test. These three distinguished men of art and science had been trying it on themselves—to see whether listening to the New Edison caused the same emotions as listening to a living singer.

Director Bingham and his colleagues

THE man who first spoke is a famous psychologist. He experiments with music and how it makes us feel and dream. He has found how music can speed you up, or slow you down, why it soothes your nerves, how it takes away that tired feeling. He is Dr. W. V. Bingham, Director of the Department of Applied Psychology, Carnegie Institute of Technology.

One of his colleagues is Professor C. H. Farnsworth, Director of the Department of Music, Teachers College, Columbia University. Professor Farnsworth knows music just as the physician knows medicines. If you want music that cheers, or music that inspires, or music that "peps you up," he'll tell you which music to play.

Wilson Follett, Esq., looks at music just as do you. He likes good music, and he

knows how he likes it. He is a distinguished author and music critic.

When such famous psychologists feel the presence of a living singer, although she isn't present at all—when such highly critical minds experience strange and vivid sensations through the Realism Test, it is proof that the Realism Test provides a valuable scientific method of testing your capacity to enjoy music.

You can try the same test

MR. EDISON'S Realism Test is an ideal way for you to judge the New Edison. It tells you just how the New Edison is going to please you and your friends in your home.

Wouldn't you like to try the same test? There's an Edison dealer near you, who has equipped himself to give the Realism Test. Watch for his announcement in the local newspapers, and stop in his store the next time you are in town. He will give you the Realism Test just as it was given for the noted psychologists in the Edison Shop on Fifth Avenue, New York.

If you can't find his announcement, write us and we'll send you a special card of introduction to him, and also mail you a copy of that absorbing story, "Edison and Music," which tells how Mr. Edison brought the phonograph to its perfection. Just send your name and address to

THOMAS A. EDISON, Inc., Orange, N. J.

The NEW EDISON
"The Phonograph with a Soul"



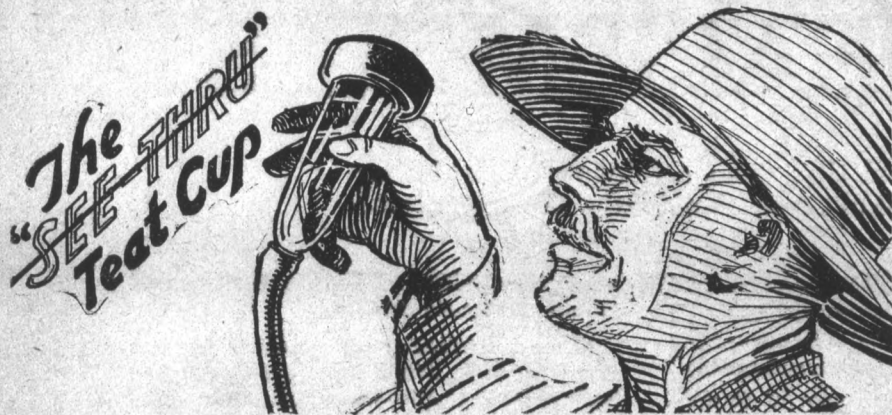
A lot of things play havoc with a Cord tire: Sand blisters, tread separation, blowouts, heat, cold, poor traction, imperfect cord formation, too much or too little resiliency. Get rid of those evils—and you have a Cord Tire of real value. Exactly what we have accomplished in the manufacture of Gillette Cord Tires. The exclusive Gillette Chilled Rubber Process toughens rubber as iron is toughened when changed to steel. Makes sand blisters next to impossible. Tread separation and blow-outs almost unknown. Reduces the destructive effects of heat and cold—scientific formation of both tread and body prevents uneven strain and uneven wear.

Second year sales of Gillette Tires were far greater than second year sales of any other tire ever produced. Put one Gillette or a full set on your car now. Write our general sales office, if there is no Gillette dealer in your town.

GILLETTE RUBBER COMPANY
Factory, Eau Claire, Wis. Gen. Sales Office, 1834 Broadway, N.Y.

Gillette

TIRES A BEAR FOR WEAR TUBES



The Greatest Improvement in Milking Machines

Think of a mechanical milker that exactly reproduces the nose action of a sucking calf—that massages the cow's udder more perfectly than by hand—a milker with teat cups you can see through and know at all times which teats are milking. This is the kind of milking machine you have wanted. This is the kind in successful use on thousands of dairy farms.

UNITED MILKER

With the Famous "See-Thru" Teat Cup

The patented rubber top massages the cow's udder while the smooth, regular, even vacuum action draws down the milk with perfect comfort. No metal touches or corrodes the cow. It is as easily cleaned as a china dish. It is furnished in individual units—keeps each cow's milk separate so you know what the cow is doing. The United is the most practical, easiest installed. It is light in weight, a boy or girl can easily handle it

Write us for particulars—Your name on a post card will do—Send today

United Engine Company

Dept. M13 C. L. Sprinkle, Pres. Lansing, Mich.

OTHER UNITED PRODUCTS (4)

Gasoline Engines, Kerosene Engines, Feed Mills, Light Plants, Cream Separators, Saw Frames, Washing Machines



BALANCED RATION FOR COW.

Kindly send me your opinion of a good balanced ration, grain and hay, for a fresh cow. I have a quantity of alfalfa. Is it wise to use it as feed more than once a day, and when?

Newaygo Co.

J. P.

If you have plenty of alfalfa hay it would be advisable to feed all the alfalfa hay the cow will eat up clean twice a day. There is nothing better. Besides this she should have a suitable grain ration also, ground corn and oats mixed equal parts by measure with wheat bran. It makes a splendid combination with alfalfa alone for roughage. I do not think you could beat it. You should feed about one pound of this mixture of grain per day for every three to four pounds of milk, which your cow yields in a day. If your cow gives forty pounds of milk a day she ought to have ten pounds of grain per day, and so on.

To have a dairy cow do her best it is practically necessary to have some succulent food in the ration, like beets, carrots, corn silage, anything that has succulency. It is now so near grass that this question of succulency will soon be settled because your cow will get some fresh grass, which is the best succulent feed of all. If you have no pasture you can mow a little grass to give her once a day, or even occasionally. It will aid in keeping the cow in excellent condition.

C. C. L.

HAY SUBSTITUTE.

I have ten acres of fall-plowed black loam soil on which I would like to raise a hay substitute. Would you advise me to sow millet or Sudan grass.

F. O. P.

I don't think you could raise anything on this black loam soil that will give you as good results as field peas and oats. This makes a prime hay. A splendid substitute for clover or alfalfa and on this rich soil you can raise a good crop. A ton and one-half to two tons per acre of good hay and possibly more, depending upon the condition of the soil.

Millet will make better hay than Sudan grass. It is a better plant and in either case you would want to sow it thickly so as to get a finer stem, which will make a better quality of hay. The Sudan grass would probably come up the second time and make pasture. This might be an advantage that the other plants would not have.

C. C. L.

WHICH BREED OF GEES?

Which kind of geese would you advise a farmer to purchase, the Toulouse or African? Are the African a large and hardy goose? How many eggs would a goose cover? And how should I take care of and feed the small goslings?—H. B.

The Toulouse goose is most commonly seen on the farms, but the African is also popular and has many friends. The African is large and hardy and increases in weight very rapidly. Some breeders consider the African the most profitable goose to raise. The adult gander should weigh twenty pounds and the goose eighteen pounds. The young gander should weigh sixteen pounds and the young goose fourteen pounds. Some breeders of geese are learning to like the White China geese as they are heavy layers and said to average around sixty eggs per year. They should weigh around twelve pounds for the adult gander and ten pounds for the adult goose. Some breeders find them better than the heavy geese for use on the home table as they are not so greasy and believed by some to have a better flavor than the heavier breeds. However, the fact that the Toulouse is so generally grown proves that it is giving considerable satisfaction. Very often the selection of a breed is largely a matter of personal preference. Men succeed and fail with any of them.

A goose should cover about ten or twelve eggs. Some breeders prefer to hatch with hens and give each good-sized hen four goose eggs. Grass is the first feed for goslings. It is given on the second day after the yolks have had time to be absorbed. After that a mash can be given three times a day. Sometimes scalded cracked corn is given. Keep the mother goose confined for about a week so she will not take the goslings too far on the range and lose them or tire them out. After two weeks they need only one feeding a day if they have a pasture rich in green food.

R. G. K.

A ROOT CELLAR.

I am building a concrete cellar under my haymow, for storage of cowhorn turnips. Building entirely underground and putting concrete floor over cellar and balance of haymow. Will turnips keep in such a place without a ventilating flue? Also will you tell me what is the best way to keep sugar beet tops for feeding, either in a silo or otherwise?

I. M.

This excavation under the haymow will, of course, make an excellent root cellar, but means ought to be provided for ventilation. You could do this by having one or two large tiles open into the cellar and these can be easily fixed so that you can close them if the weather gets too cold. But when turnips are first placed in the cellar in the fall there should be some means of ventilation.

Cowhorn turnips make good feed but they are not considered as valuable as rutabagas or beets because they are liable to have a rather rank flavor and the most of them are tough or more fibrous than rutabagas or beets. Nevertheless they furnish a very good succulent food.

Probably the best way to keep beet tops is in a silo, but you can put them in shallow pits in the ground as you do potatoes, covering them so that they will not freeze.

C. C. L.

ANCONAS AND CAMPINES.

Can you describe Anconas and Silver Campines as to color, size and habits? I want to keep two flocks of hens separately, and would like a small breed of hens similar to the Silver Laced Wyandottes.

Mrs. P. C.

The Anconas are a type of bird similar to the Leghorn and the color is mottled black and white. They often look like black birds splashed all over with large snowflakes. The weights for the breed are cock, five and a half pounds; cockerel, four and a half pounds; hen, four and a half pounds; pullet, three and a half pounds.

The Silver Campine is an attractive bird. The male has white head plumage and the neck feathers are white with a little barring at the base. The back is greenish black and barred with white and the same applies to the remainder of the plumage. The same combination of colors applies to the hens. The weights of the Campine are cock, six pounds; cockerel, five pounds; hen, four pounds; pullet three and a half pounds.

Both of the breeds are considered fine layers of large white eggs. At present the Ancona seems to have the widest distribution but the Campines have many friends also. They are very attractive when carefully bred according to the Standard.

R. G. K.

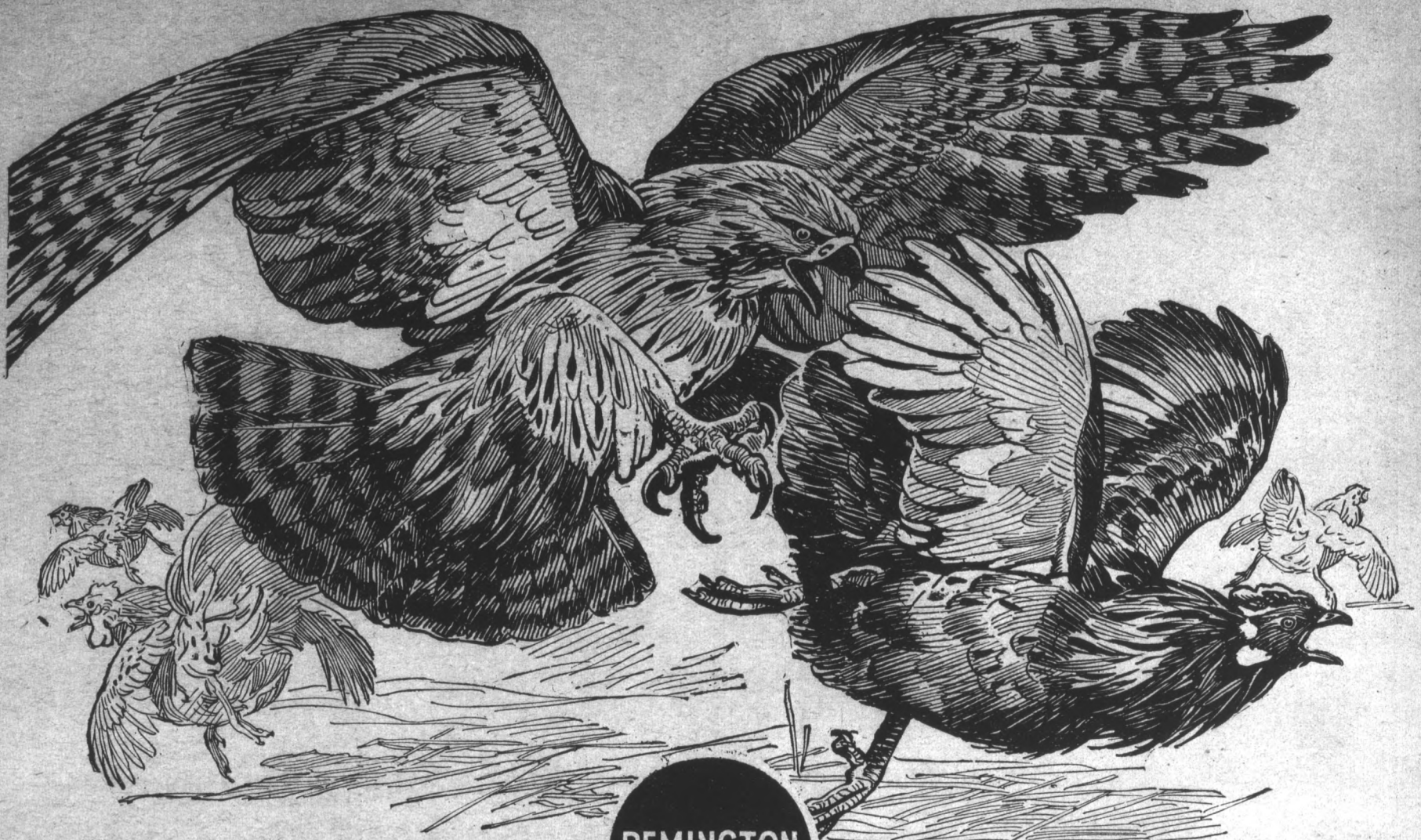
SEX OF GEES.

I have a few gray Toulouse geese, and as I wish to put part of them on the market at Christmas time, I want to know how to distinguish the sex. Last year I sold the goose, as I was unable to tell, and have never been able to find anyone who could tell me definitely how to distinguish them.

Van Buren Co.

J. M. L.

The Toulouse gander is somewhat more massive than the goose. Otherwise the male and the female are so closely identical in plumage that the sex can only be determined by the voice and actions.



REMINGTON
UMC

Does This Ever Happen On Your Farm?

THE pest nuisance costs you real money every year. While you may realize this, do you make every possible effort to get rid of the troublesome birds and animals on your place?

Mr. Chicken Hawk likes nothing better than to grab off one of your nice pullets when he gets half a chance. Br'r Rabbit is always on the alert to help himself in your truck patch. Foxes, rats and weasels live high where your chickens scratch and roost. Crows pull out the young corn, as you well know. Gophers, prairie dogs, ground squirrels and badgers are worse than a nuisance to the ranchman, the fruit grower and the farmer.

Remington
UMC
for Shooting Right

A Remington pump action or autoloading shotgun will help to solve the pest question. Whether you're after chicken hawks or whether you're going duck or quail shooting you surely want a gun that will do full justice to your shooting skill. Since the first Remington was turned out in 1816, Remington has been a leader in invention and improvement in the firearms and ammunition field.

Another example of thinking ahead in serving the sportsmen of the country is the Wetproof process applied to all Remington UMC shotgun shells. Wetproof shells are treated in body, crimp and top wad with a patented waterproofing compound which absolutely seals the shell against wet. When you ask your dealer for "Nitro Club" and "Arrow" (smokeless powder) or "New Club" (black powder) shells, you'll get Wetproof. The Remington UMC Red Ball is on every box.

Send for Catalog showing the entire Remington line, delivered post paid, and mention this paper

The Remington Arms Union Metallic Cartridge Company, Inc.

Largest Manufacturers of Firearms and Ammunition in the World

Woolworth Building, New York City



Careful Inspection of Every Part

DE LAVAL

For Forty Years The World's Standard

Perfectly designed, with a staff of skilled engineers constantly striving to improve it, the De Laval is built of the best of materials, by the best of mechanics, and with the best of equipment—with forty years of experience behind it.

Every piece of material and every part is carefully inspected and tested. The limit of permissible variation in size of most of its parts is less than one-thousandth of an inch.

These are the basic reasons why the De Laval costs more, does better work, produces a better product, requires less attention, and lasts far longer than inferior separators.

Your local De Laval Agent will be glad to demonstrate the superiority of the De Laval. If you don't know him please simply address the nearest main office, as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway
NEW YORK

29 East Madison Street
CHICAGO

61 Beale Street
SAN FRANCISCO

50,000 Branches and Local Agencies the World Over

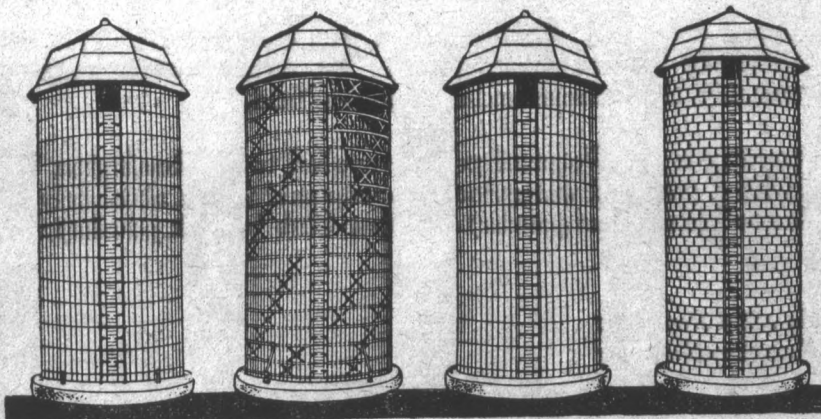
Work half the number of acres, produce the same results with a silo —you can do it without increasing your labor

Here are four Saginaw Silos, each one makes good silage. Choose the one best adapted to your needs.

Write for Saginaw Big 4 Booklets. Address Dept. 10.

Saginaw, Mich. **THE McCLURE COMPANY** Cairo, Illinois

See the New Whirlwind Silo Filler with Automatic Feed. Ask us about it.



Saginaw
Steel-Built
Wood Stave

Saginaw Hollow Wall
Wood Stave
with Cross-Truss

Saginaw Leader
Wood Stave
Silo

Saginaw
Purified
Clay Silo

MICHIGAN LIVE STOCK INSURANCE COMPANY

INDEMNIFIES Owners of Live Stock—Horses, Cattle, Sheep and Hogs
Against Death by Accident or Disease
308 Davidson Building, Bay City, Michigan

Dairy Problems

A ONE-CROP ROTATION OF CORN.

I am a dairy farmer owning eighty acres of heavy clay land, forty acres permanent pasture, eighteen acres of land too wet to work in spring, which I expect to seed to one quart of timothy, three quarts of alsike, cut two years, plow after haying, and reseed the same way. Twenty acres of higher land which I expect to keep into corn, covering with cow manure every year and sowing 400 pounds of 2-12-2 commercial fertilizer. What condition will this land be in at the end of ten years? Will the yield increase or decrease? This field without manure or fertilizer last year produced fifty-eight tons of silage on four and a half acres. This was Eureka silage corn planted June 17 and cut September 20. If I should sow two tons of fine limestone per acre how long before I should have to sow again? I can buy all the straw necessary for bedding purposes.

Branch Co. R. J. U.

I think if you carry out your plan as stated, that at the end of ten years this field will grow a larger crop of corn than it will now. Ordinarily we have to grow sods in order to keep up the organic matter in the soil. There isn't enough stable manure produced and could not be to keep all the land in good condition in growing a crop like corn year after year. That kind of farming has been tried in the cotton fields of the south and also has been tried in the Red River Valley of the north with wheat, and in every instance after a certain number of years the land gets into such poor physical condition that profitable crops cannot be grown, even though the land is rich in plant food. It is just as necessary to have a supply of organic matter (humus) in the soil as it is to have nitrogen and phosphoric acid and potash, the fact is, if it was not for the necessity of this organic matter, farming would be very much simplified, because we can furnish these essential elements of fertilizers in the form of commercial fertilizers, but we cannot furnish the organic matter unless we grow sods to be turned down, or unless we supply this organic matter in stable manure.

The stable manure will furnish the organic matter just as well as sods, and by the use of commercial fertilizer and the plant food in the manure there is no question but what you can increase the yield on the average year after year. As a matter of fact, this very same idea has been tried out in a careful way at Cornell University by Professor Roberts, who was for many years dean of the agricultural department. He performed the very same experiment that you are contemplating, raising corn for a period of ten years on the same field, giving the field an application of stable manure annually and the yield of corn kept gradually increasing. The tenth crop was a much better crop than the first one, so there is no theory about this. If I remember correctly, Professor Roberts did not use any commercial fertilizer, simply the stable manure.

By using your commercial fertilizer and then all the manure you produce on this one field, I think that you will more than keep up the fertility of the soil on your plan and taking your farm into consideration it seems to me that this is a mighty wise plan. C. C. L.

RATION LACKS PROTEIN.

I have five cows milking fresh and I don't know how to feed them out of what we have on hand. We have timothy hay, bean pods, plenty of cornstalks, ground oats and barley. Also, I purchased 100 pounds of cottonseed meal but the cows don't seem to relish it, and during the day they help themselves to wheat, oat, and rye straw. I can also get some corn, ground, for them if necessary.

Tuscola Co.

C. Y. Timothy hay, bean pods and corn-

stalks can all be utilized in making a good ration for dairy cows, but they are not considered first-class. The timothy hay and cornstalks are quite deficient in protein. Bean pods have got more protein. Many bean pods are practically spoiled by trying to cure beans in field and many of them are worthless. Where the beans were pulled at the proper time, and good weather was experienced in curing bean pods they are quite a valuable roughage food.

Oats and barley are splendid grains and cannot be improved for a portion of the concentrates. They are, however, deficient in protein. What you need in this ration is cottonseed meal and oil meal. I cannot understand why your cows do not like the cottonseed meal. Most cows are very fond of it, especially after they get used to it. If your cows have never been fed cottonseed meal before, I would at first mix the cottonseed meal with oats and barley or some other grain and if they once get used to it you will have no trouble in getting the cows to eat this food. I would suggest that you grind one hundred pounds of oats, one hundred pounds of barley, and one hundred pounds of corn and mix with this one hundred pounds of cottonseed meal, that is, one-fourth of the grain ration will be cottonseed meal. Feed your cows all of the roughage they will eat up clean, and then feed them one pound of grain per day for every four pounds of milk that they produce in a day. In this case where you have no succulent food in the ration I would prefer to use oil meal in place of cottonseed meal. I think you would get better results. C. C. L.

GROWING SOY BEANS.

What is the best method of raising soy beans and what ground is the most suitable for the crop? Osceola Co. M. L. P.

When one says to grow soy beans as you would corn, you say about all there is to it. Of course, you can put the rows closer together, twenty-eight inches is enough room. It is better to drill them than to plant in hills. You can get a larger yield. Otherwise prepare the land and cultivate as you would to get the best crop of corn. If they are intended for hay, cut them with a mowing machine when the pods are nicely formed. Do not wait until they get ripe, and cure as you would clover hay. They can be left in swaths much longer than clover hay and not bleach out, because they do not seem to absorb moisture. When ready to rake, which may be one or two days, time they should be put in cocks and left till they go through the sweating process. Do not hurry them on account of weather.

The best land for soy beans is the best land for corn, although soy beans will make a better growth on poor land than corn will, but if you want to get a big crop you have got to have good soil the same as for any other crop.

Where soy beans have not been grown on field before, the seed should be inoculated with proper bacterin. This can be done by the glue method, that is, getting soil from near the roots of soy beans that contain well developed nodules, drying and fining this soil and sprinkling on seed that has been covered with a preparation of glue, or you can purchase of the Michigan Agricultural College, or the Edwards Laboratory at Lansing, the commercial culture already prepared to mix with beans. It is quite essential that beans be inoculated. C. C. L.

NOW That Coupon is Worth \$2 on a Famous New Butterfly

More Than 175,000 New Butterfly Cream Separators Now in Use

How the COUPON Saves You \$2

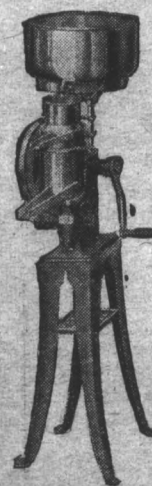
By ordering direct from this advertisement you save all expense of catalogs, postage, letters and time. And we give you the benefit of this saving if you send the coupon below. Furthermore, isn't it better to have one of these big money-making machines to use instead of a catalog to read? Wouldn't you like to compare the New Butterfly with other Separators in your neighborhood regardless of price? Wouldn't you like to see just how much more cream you would save if you owned a Separator? We believe you would, so we send you a machine from our factory to try 30 days. Then if you decide you want to keep it the coupon counts the same as a \$2 payment. You take that much right off from our factory price on any size Separator you select. For example—if you choose a \$44 machine you have only \$42 left to pay in 12 easy payments or only \$3.50 a month. If you select the \$56 machine you will have only \$54 left to pay in 12 easy payments of only \$4.50 a month—and so on

The Coupon Makes First Payment And the Separator Itself Pays the Rest

You get the benefit of the great saving in time and work while the separator is paying for itself. After that the profit is all yours, and you own one of the best separators made—a steady profit producer the year 'round—a machine guaranteed a lifetime against all defects in material and workmanship and you won't feel the cost at all. If you decide to keep the separator we send you, you can pay by the month, or you can pay in full at any time and get a discount for cash. The coupon will count as \$2 just the same. The important thing to do now is to send the coupon, whether you want to buy for cash or on the easy payment plan. We have shipped thousands of New Butterfly Cream Separators direct from our factory to other farmers in your State on this liberal plan.

Pick Out the Size You Need

Order Direct From This Advertisement on Thirty Days' Trial. Use the Coupon.



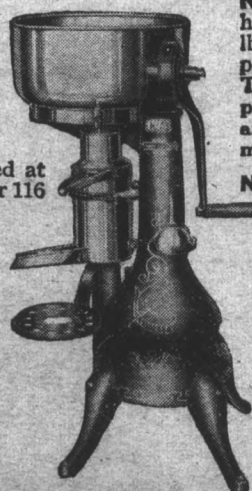
You take no risk whatever. You have 30 days in which to try the New Butterfly we send you before you decide to keep it. Every machine we build carries a written Lifetime Guarantee against defects in material and workmanship.

No. 2 1/2—Machine illustrated at left. Capacity up to 250 lbs. or 116 qts. of milk per hour. Price, \$44.00

Terms: Free \$2.00 coupon with order. Balance, \$3.50 a month for 12 months.

No. 3 1/2—Machine shown at left. Capacity up to 400 lbs. or 195 qts. of milk per hour. Price, \$56.00

Terms: Free \$2.00 coupon with order. Balance, \$4.50 a month for 12 months.



No. 4 1/2—Machine shown here. Capacity up to 500 lbs. or 250 qts. of milk per hour. Price, \$65. Terms: Free \$2 coupon with order. Balance, \$5.25 a month for 12 months.

No. 5 1/2—Machine shown here. Capacity up to 600 lbs. or 300 qts. of milk per hour. Price, \$74.00

Terms: Free \$2.00 coupon with order. Balance, \$6.00 a month for 12 months.

No. 8—Machine shown here. Capacity up to 850 lbs. or 425 qts. of milk per hour. Price, \$78.80

Terms: Free \$2.00 coupon with order. Balance, \$6.40 a month for 12 months.

It is Always Best—

to select a larger machine than you now need. Later on you may want to keep more cows. Another thing—remember, the larger the capacity the less time it will take to do the work.

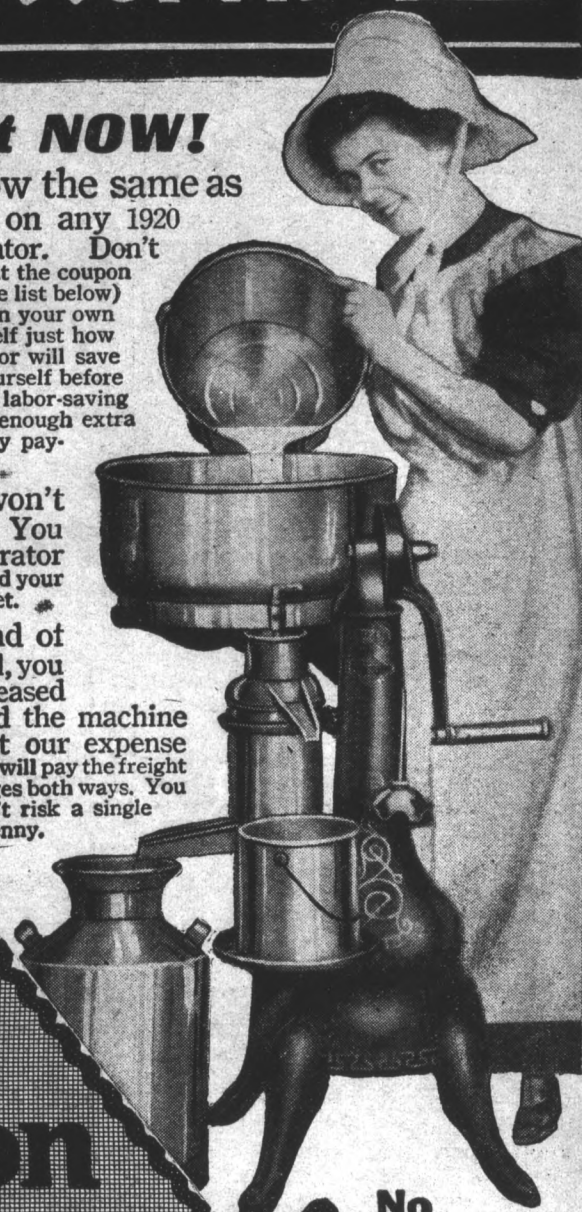
ALBAUGH-DOVER CO. 2340 Marshall Blvd., Chicago MANUFACTURERS

—But You Must Act NOW!

We will accept the coupon below the same as cash for full first payment of \$2 on any 1920 model New Butterfly Cream Separator. Don't send a single penny in advance. Just fill out the coupon telling us which size machine you want (see list below) and we will ship it for you to try 30 days in your own home. Then you can find out for yourself just how much a New Butterfly Cream Separator will save and make for you. You can see for yourself before you pay a cent how easily this great labor-saving money-making machine will save enough extra cream to meet all the monthly payments before they are due.

In this way you won't feel the cost at all. You will have the Separator to use on your farm and your money in your pocket.

If at the end of 30 days' trial, you are not pleased just send the machine back at our expense and we will pay the freight charges both ways. You don't risk a single penny.



No Discs to Clean

The New Butterfly is the easiest cleaned of all Cream Separators. It uses no discs—there are only 3 parts inside the bowl, all easy to wash. It is also very light running with bearings continually bathed in oil. Free circular tells all about these and many other improved features.

FREE COUPON

ALBAUGH-DOVER CO., 2340 Marshall Blvd., CHICAGO
Gentlemen: Please ship me on 30 days' FREE TRIAL, in accordance with your offer in

one New Butterfly Cream Separator, size..... If I find the machine satisfactory and as represented by you, I will keep it and you are to accept this coupon as \$2 first cash payment for same. If I am not pleased, you agree to accept the return of the machine without any expense to me, and I will be under no obligation to you.

I keep.....cows.

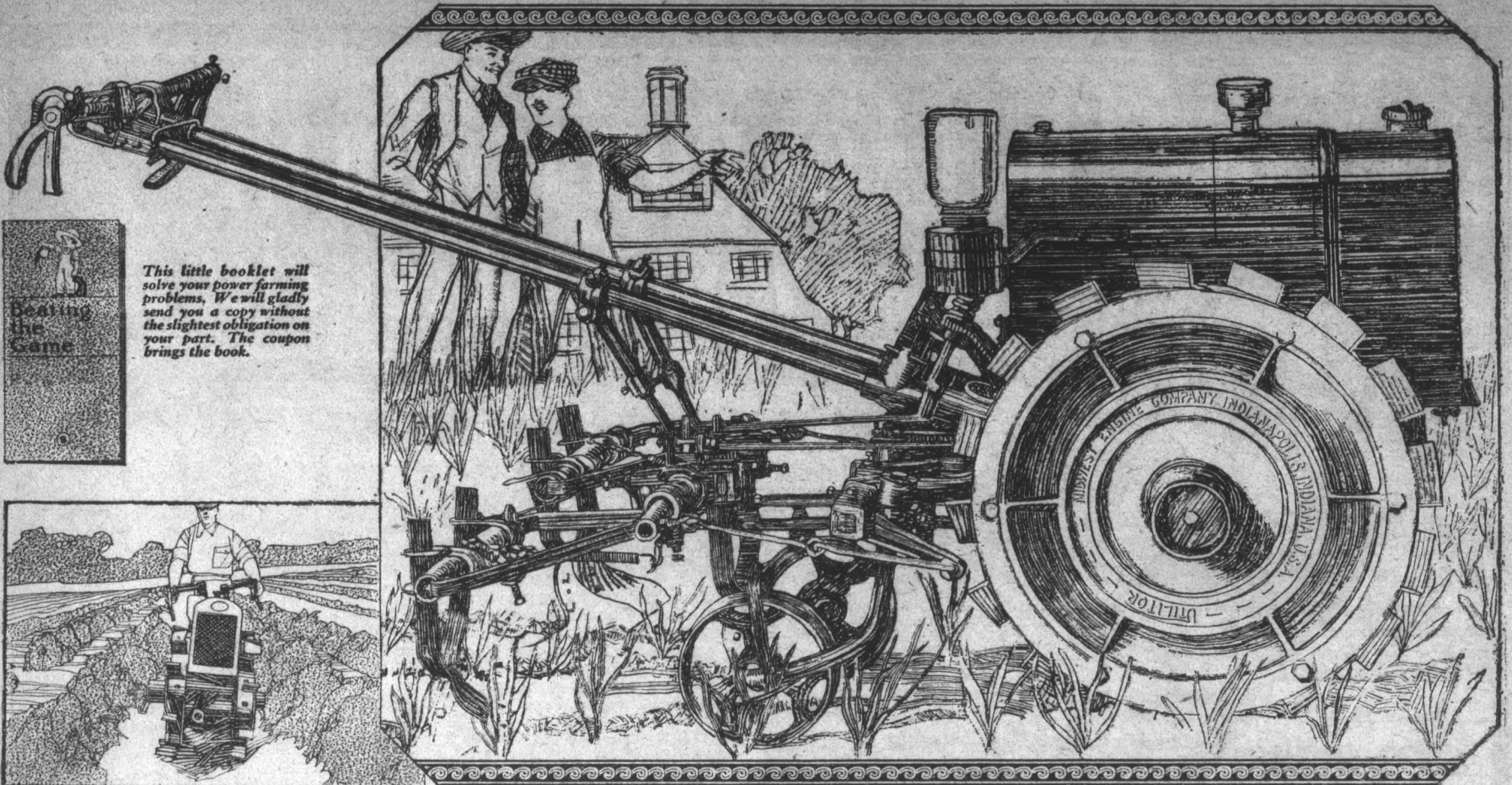
I wish to buy on.....terms.
(Cash or easy payment)

Name.....

Shipping Point.....

State.....Post Office.....

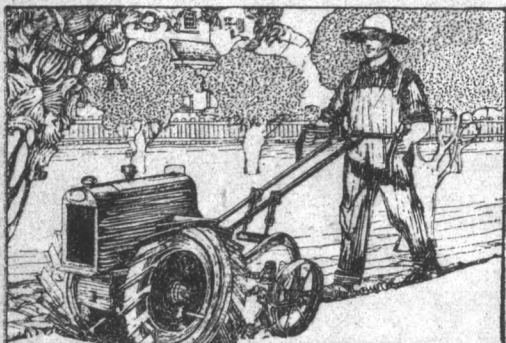
Name of Your Bank.....



This little booklet will solve your power farming problems. We will gladly send you a copy without the slightest obligation on your part. The coupon brings the book.



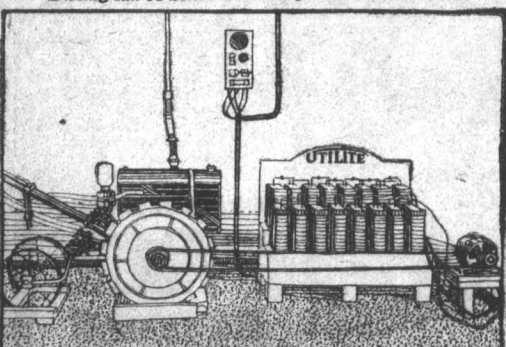
Its width makes the Utilitor ideal for cultivation.



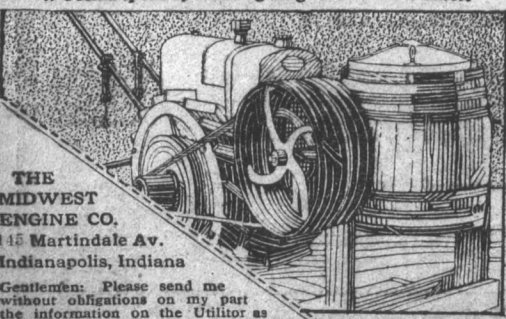
The Utilitor will plow to your entire satisfaction.



Discing can be done better and faster with a Utilitor.



We sell a specially made lighting set with the Utilitor.



A belt use—operating butter churn.

THE
MIDWEST
ENGINE CO.
145 Martindale Av.
Indianapolis, Indiana

Gentlemen: Please send me without obligations on my part the information on the Utilitor as checked below:
☐ Booklet "Beating the Game" ☐ Who is my nearest dealer?
[If you will give us the information requested below we will be better able to show you how the Utilitor fits your particular problem.]

I own _____ acres. I have under cultivation _____ acres.

I am raising _____ Nature of soil _____

Level _____ Rolling _____ Hilly _____

Name _____

City _____ State _____

The Farmer Has Got To Take Matters In His Own Hands

—isn't it about time to RUN YOUR OWN FARM in your own way? You've got to cut costs. No matter how much you get for what you raise, you *can't make money* if it takes all you make to buy feed for your horses and your hands and to pay wages. Horses and Farm Help will eat, are eating, up your profits faster than you can possibly make them. Find out ALL ABOUT THE

MIDWEST UTILITOR

A Practical Substitute for Horse or Mule Power

Here is our statement that you, yourself can **VERIFY**:

The Utilitor is a mechanical, handy man and gasoline driven horse **COMBINED**. It can pull as much as any horse. It plows, harrows, discs, cultivates, hauls—does all the work of one horse.

—and the work of a gasoline engine besides. It will run your pump for filling watering troughs anywhere on the farm, drive a cream separator, churn, cut wood.

Will Work in the Field all Day and Help Light Your House at Night

We have a farm lighting set especially meant to be charged by means of the Utilitor, and this feature, because of its tremendous saving, is of vital interest to you.

You, yourself, will find many new uses for the Utilitor after you get it on your farm.

You Can See a Utilitor Work Before You Buy It

We don't ask you to buy it till you know all about it—who makes it, what it will do on your farm, how quickly you can get spare parts if anything should break, and all the various uses to which it can be put. And the quickest way to get this information is to write for this little **FREE** booklet, "Beating the Game," which we will send you if you will fill out this coupon. You are not in any way obligated. Fill the coupon out **TODAY—NOW**.

Dealers Are Selling Utilitors

Farmers, fruit raisers and truck gardeners are buying Utilitors because this machine is a necessity. We want the right dealer representation in open territory. You want active merchandise. The Utilitor is the most active merchandise on the market today. Write or wire us today for our selling plan.

MIDWEST ENGINE COMPANY, Indianapolis, U. S. A.

Dependable Power

WORLD EVENTS IN PICTURES



President Wilson's Cabinet leaving the White House following a conference on the railway situation. From left to right they are, Secretaries Meredith, of the Department of Agriculture, Payne, Baker, Daniels and Colby, the new Secretary of State.



French patrol in occupied German territory protecting food which is being delivered to sentries on duty about Frankfort.



This well-known commuter is doing his best to help move trains during the outlaw strikes.



Beautiful Russian Princess becomes student nurse in American hospital.



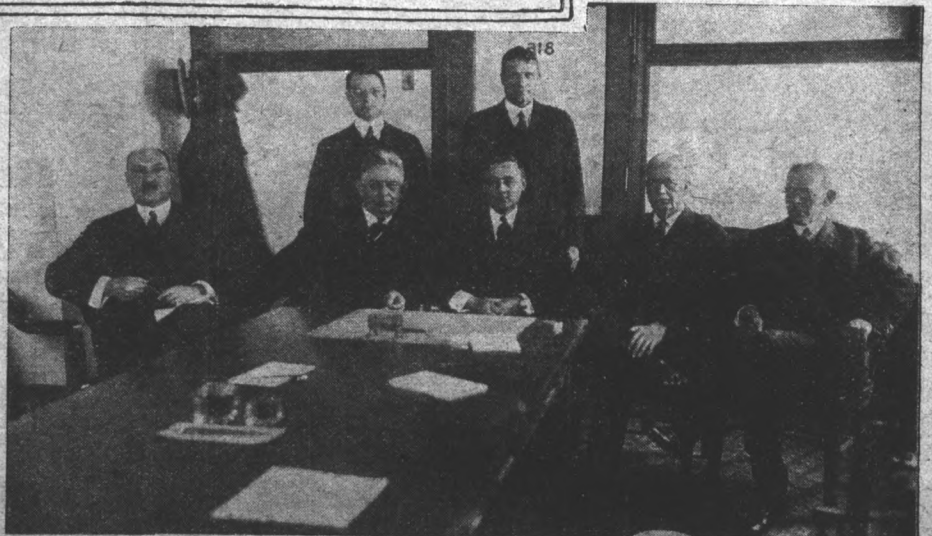
U. S. Senator Dial, of South Carolina, is leader of the overall movement in the senate.



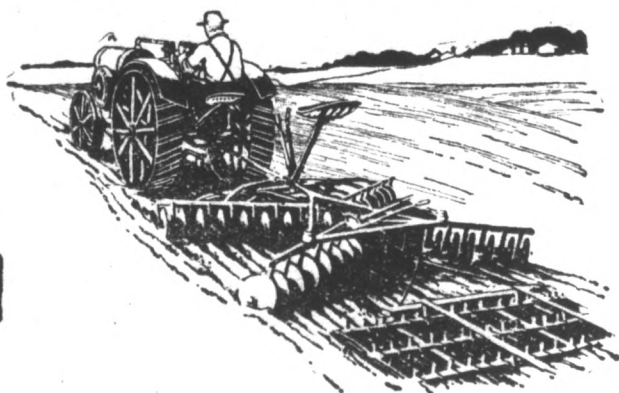
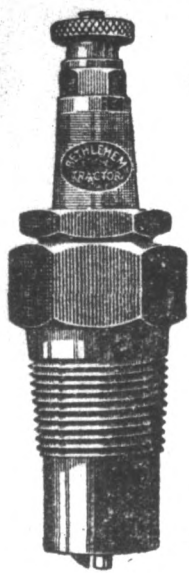
America's enthusiastic golf players who will meet English women golf champions this month in northern Ireland, sail from New York on S. S. Baltic.



Housing is so scarce in England that unoccupied prison cells are being used by homeseekers.



Members of Railroad Labor Board during the first meeting in the office of former Director-general of Railroads in Washington.



Spark Plugs and Harrowing

WHEN you're out in the field, far from the barn, and one of your spark plugs starts to "miss"—you have to hold up the harrowing till you can put in a new plug. Valuable time lost.

The special construction of Bethlehem Spark Plugs is your best assurance against such delays. In the de Luxe Tractor Plug, the mica is wrapped around the center spindle, then reinforced with mica washers pressed into a granite-like whole—the only kind of tractor-plug that can "stand the racket."

The great International Harvester Company, after exhaustive tests, has adopted Bethlehem plugs as standard equipment. Bethlehem Automobile and Truck Plugs are equally dependable. Studebaker, Marmon and 48 other manufacturers equip with Bethlehem.

Write for free copy of "Hit or Miss?", which tells you what you want to know about spark plugs.

BETHLEHEM SPARK PLUG CORPORATION
E. H. Schwab, President
Bethlehem, Pa.

Bethlehem
SPARK PLUGS
"They Pull You Through"

Instant Postum

still sells at the same low price as before the general rise in costs

—and great is the number of families who now use this table beverage in place of coffee.

Attracted to its use by continued low cost, they found its agreeable coffee-like flavor much to their liking.

With no health intent behind their action they discovered better nerves followed the change.

All Grocers sell Postum
and your trial is invited
"There's a Reason"

Made by POSTUM CEREAL CO., Inc.
BATTLE CREEK, MICHIGAN

Greater Things Than These

By N. A. McCune

"The whole multitude of the disciples began in their joy to praise God for all the mighty deeds they had witnessed."

LAST year a certain denomination celebrated the one hundredth anniversary of its work in America. On the day of the big prize fight in Toledo the papers reported about one-third as many people at the fight as there were at the church celebration at Columbus. When we read that the disciples were praising God for the "mighty deeds" they had witnessed, the question naturally rises, did not the disciples have the advantage over the people of today? Had they not seen greater events than we have? Had they not more reason to be filled with joy than the ordinary church-going man? They had seen Him still the waves of furious Galilee, and his disciples were amazed and asked what manner of man this could be, who could compel obedience from wind and wave. They had seen Him go into a house where a little girl lay dead. Around her stood the weeping father and mother, the sympathetic neighbors. They had seen Him take her by the hand and lift her up to life and strength. Have we seen anything like that in these days?

Answer—we have seen greater events than these. When our Lord went away from earth He said that his followers would do greater things than had been done, because he was going to the Father. It has been so. It is so now. When Jesus was here, He only wrought His great deeds when He was personally present. He only taught when He was personally present to speak the word. But now he is multiplied ten thousand fold. Thousands are toiling in His name, and thousands speak for Him, where one wrought or taught in the days of His flesh. The other day I read of a "mighty deed." One great denomination in America is spending twelve and a half millions of dollars, mind the figures, twelve and a half millions, for aiding the suffering peoples of Europe. One shipload of necessities has already been sent. A list of its cargo reads like the invoice of a general store. There are forty-five thousand pairs of shoes, two tons of sugar, three tons of rice, half a ton of coffee, half a ton of tea, half a ton of cocoa, thirty or forty thousand bars of soap, on and on, through a long list. Some of it was going to northern France where the people are living in dug-outs to the Balkans. That surely where the children are starving, some out, some of it to Vienna, is a "mighty deed," and it could not have happened in the days of our Lord. Then, too, what of that manifesto from the prime ministers of Great Britain, Canada, Australia, New Zealand and South Africa? These men in high office have issued this statement to the millions of subjects of the British king, saying that peace and prosperity depend not on science, commerce, education, capital, but on good will among men, and that good will depends on the great eternal spiritual values. Such a manifesto could not have been issued in the days of Christ. Joseph of Arimathea has many descendants among the men of honorable estate. Men who hold the highest trusts in politics and business are among the earnest followers of Him who had but twelve pupils, in the long ago.

There is an increasing percentage of business men who acknowledge their indebtedness to Christ. When religion strikes a man's pocketbook, you know, it is getting down to business. But here is a crockery merchant who vowed that if God would give him success, he would sell out and devote his entire time to Sunday school work, and he has kept his word. Here is a man who pledged \$2,500 to the local Y. M. C. A. He had to borrow the \$2,500, but he paid it. Shortly after disaster overtook him, and he lost all. What he had left were nine children and a mortgage on his home. He and his family came to know the pinch of poverty. Yet he had the conviction that somehow the Master he served would see him through it. Later he began the manufacture of a drug product, now well known. He discovered the formula by accident. The money began to roll in. It is still rolling in. He gives and gives and gives. He is but one among many men, who we call men in big business, who give a regular percent, and who give time and energy to the cause they hold most dear. That could not have happened on that day when the disciples praised Him for his mighty deeds. We have more cause to praise Him today than they had then.

M. A. C. News Letter

WITH the cost of nursery stock at an use sufficient explosive to blow all its present level, fruit growers the top soil away.

and others will do well to exercise "The holes if dug much in advance the greatest possible care in planting of planting time will get very dry and trees, vines and shrubs this spring, may cause loss unless water is supplied. Stand the trees in water or according to I. T. Pickford, extension horticulturist at M. A. C. liquid mud for hauling into the orchard. Wet sawdust is also good. Failure to exclude air spaces next the roots when planting is probably the most prolific cause of failure.

It is never advisable to be careless in planting since the loss of a year or two because of a dying tree is far more serious than the first cost of the stock, but high prices furnish added reason to make the purchaser more thoughtful. "Prune off the broken roots and sufficient others to allow firm tamping of the soil. If the season is advanced or if the soil is dry it will pay well to except in cases of impervious hard-use water in the partly filled hole. The pan," says Mr. Pickford. "Do not blast surface soil is best left unflooded. It when the soil is quite moist as it will is never safe to put commercial fer-

compact an area below the hole. Nev-

(Continued on page 755).

KEEP FERTILITY AT THE TOP
NOTCH.

(Continued from first page).

lime alone has been \$6.00; that for lime and phosphorus over lime alone has been \$10, and that for lime, phosphorus, potassium and nitrogen over lime alone has been \$19.

On a part of this land open-yard manure has been applied at the rate of four tons per acre to corn and wheat, or eight tons for each five-year rotation, resulting in a total annual value of produce of \$42. This manure should have carried as much nitrogen as has been given in nitrate of soda, together with about half as much potassium as has been given in muriate of potash. It should also have carried three-fourths as much phosphorus as has been given in acid phosphate, but its effect has been materially lower than that of the full dressing of chemicals.

In another experiment on limed land on the same farm, the same quantity of eight tons of open-yard manure has been applied in one dressing to corn, grown in a three-year rotation of corn, wheat and clover, and has produced an annual value of \$45. When this manure has been reinforced with 320 pounds of acid phosphate, the annual value of produce has risen to \$55, thus giving the same increase for acid phosphate that has been recovered in the longer rotation. We may fairly assume, therefore, that eight tons of ordinary farm manure reinforced with 320 pounds of acid phosphate, forty pounds to the ton of manure, has produced as large a yield of crops as a chemical fertilizer consisting of 320 pounds of acid phosphate reinforced with nitrate of soda and muriate of potash carrying seventy-six pounds of nitrogen and 128 pounds of potassium.

Following are some of the points brought out in these experiments:

1. At the prices used, there has been an annual loss of \$3.00 to \$4.00 an acre, or a total loss for the eight tons of manure of \$9.00 to \$12, for allowing the manure to lie in the barnyard instead of spreading it immediately from the stable.

2. The manure has fallen far short of supplying the demand of the soil for phosphorus, 320 pounds of acid phosphate having added \$9.00 to \$10 annually, or a total of \$27 to \$30 for each rotation, to the effect of the eight tons of manure.

3. That the manure has been an effective and economical carrier of nitrogen and potassium is shown by comparing this table with the one first given. On most farms the net value of the produce, after deducting cost of the treatment, will be very much greater when the nitrogen and potassium are furnished in manure than when they are purchased in chemicals.

GOOD EXAMPLE.

A little girl in Jersey who had a bantam was disappointed at the smallness of the first egg laid by the bird. Her ideal egg was that of the ostrich, a specimen of which lay on the table in the parlor. One day the ostrich egg was missing from its accustomed place. After a prolonged search it was found near the bantam's nest, and on it was written these words:

"Something like this, please. Keep on trying."

JES' LEFT.

A negro was trying to saddle a fractious mule, when a bystander asked: "Does that mule ever kick you, Sam?"

"No, suh, but he sometimes kicks where I'se jes' been."—Boys' Life.

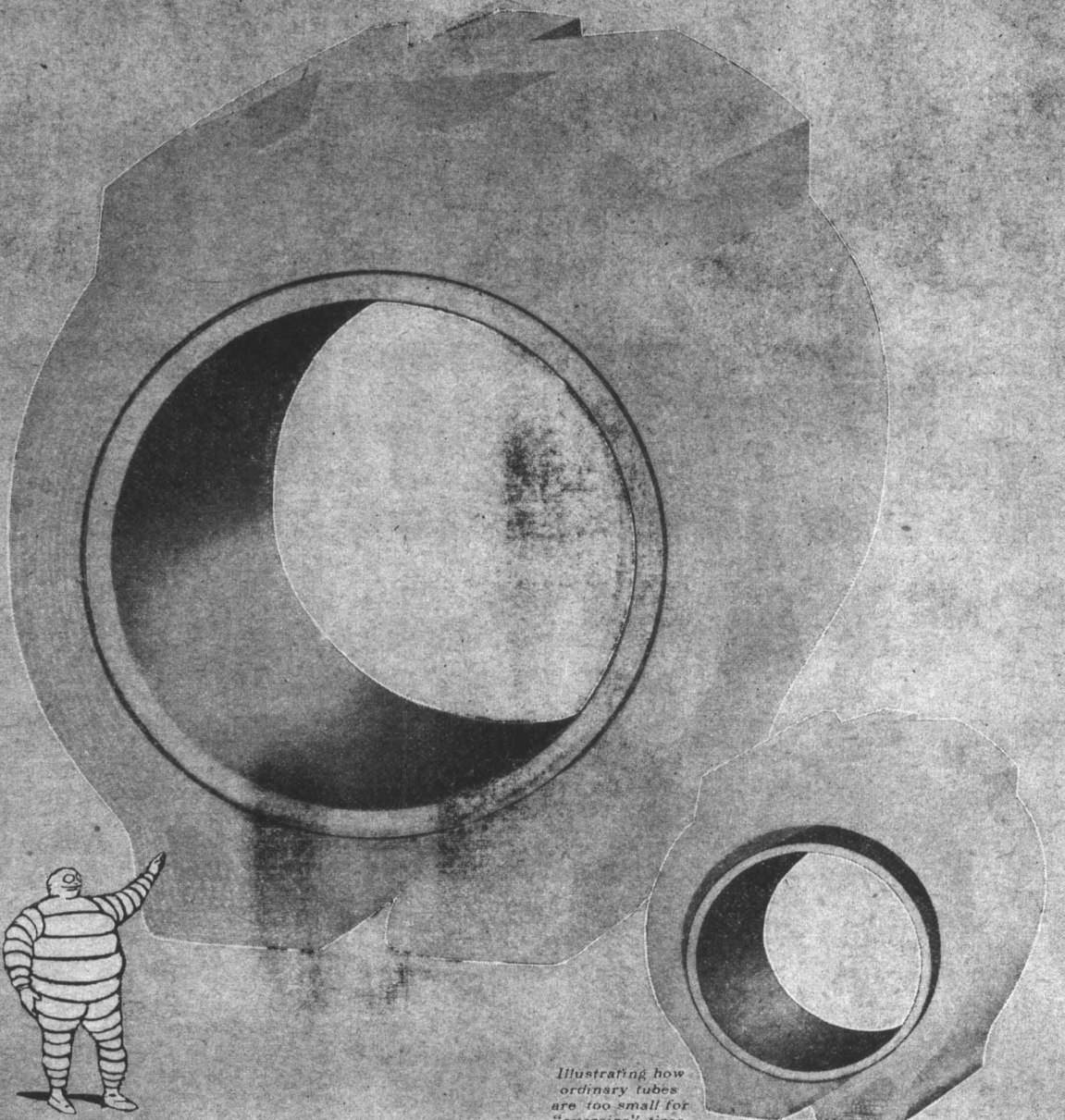
ASK DAD.

Farmer's Scout Son—Don't you like short tramps?

Farmer—No. Nor tall ones either.

MICHELIN

tubes fit "oversize" casings



Illustrating how ordinary tubes are too small for "oversize" tires.

Michelin Tubes are not only made ring-shaped to fit the casing without wrinkling, but in addition are full size in cross-section, and are therefore not stretched thin when inflated. This is especially important when buying tubes for Cord Tires, which are nearly all "oversize".

Tubes that are not really large enough for normal size casings work under a still greater disadvantage in "oversize" casings. Therefore it is greatly to the motorist's advantage to specify Michelin Ring-Shaped Tubes, the only tubes that both fit and fill the tube space in the casing.

Michelin Tire Company, Milltown, New Jersey

Other factories: Clermont-Ferrand, France; London, England; Turin, Italy.

Dealers in all parts of the world

PAGE FENCE
RESISTS RUST

ARMCO
AMERICAN
INGOT IRON

Lasts two to three times as long as the best steel fence, by actual tests. Made of the purest and most rust-resisting commercial iron known, by the oldest manufacturer of woven wire fence. Send for catalogue.

PAGE STEEL & WIRE CO.
Dept. 15, 29 S. LaSalle Street, Chicago

BUY FENCE POSTS direct from factory. Prices delivered your station. M. M. care of Michigan Farmer

Learn Auto and Tractor Business
by RAHE PRACTICAL METHOD In the oldest and greatest school in America. Twice more equipment used daily than any other auto school.

EARN \$150 to \$400 A MONTH after a few weeks. Thousands of waiting opportunities ready for your choice upon graduation here.

WRITE for FREE 68-page Book and proof.

Rahe Auto & Tractor School
World's Oldest and Greatest
Dept. 2592 KANSAS CITY, MO.

\$19.95 upward
SEPARATOR
On Trial. Easy running, easily cleaned. Skims warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address

AMERICAN SEPARATOR CO., Box 5061 Bainbridge, N.Y.

BARN PAINT \$1.32 PER GALLON
Get factory prices on all paints. We guarantee quality. We pay the freight.
Franklin Color Works, Dept. 14, Franklin, Ind.



INSYDE TYRES
—genuine inner armor for auto tires. Double mileage; prevent punctures and blowouts. Easily applied without tools. Distributors wanted. Details free.

American Accessories Company Dept. 712 Cincinnati, Ohio

LEARN AUCTIONEERING
at the World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught. Write today for free catalog.

JONES NAT'L SCHOOL OF AUCTIONEERING
28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

SAMSON

Heavy Duty Horse Power for Draw Bar and Belt.

Horsepower—*plenty of it*—stripped of all unnecessary dead weight! Horsepower for draw bar and belt! At the right price—for both first cost and upkeep! That's what every farmer wants. That is what the designers, engineers and producers had in mind when they developed the SAMSON MODEL M TRACTOR.

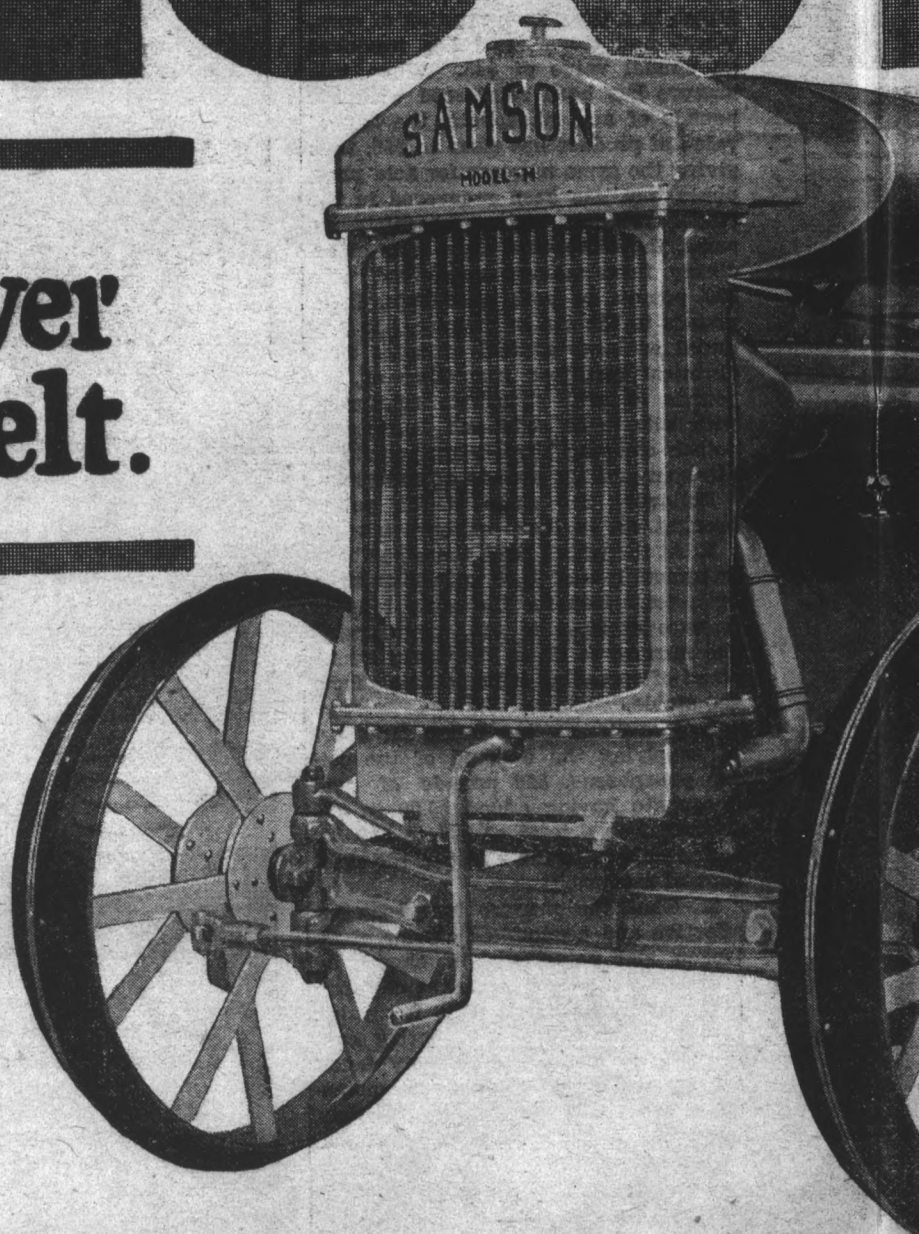
You want a tractor that will take the place and perform the duty of a barn full of horses, without costing you a fortune or a big part of your crop to buy and maintain. That is exactly the kind of tractor you get in the SAMSON MODEL M.

It's the last word in modern, down-to-the-minute tractor construction. It is not like the average "I" beam and channel steel frame tractor that weighs so much that it takes a large amount of its power for self-propulsion. It is a close-coupled power unit all by itself from radiator to rear wheels.

Every working part is enclosed and protected against dust, mud or rain. It has no lost motion, for it is built and lubricated throughout like a \$3000.00 automobile, insuring great efficiency, ease of operation, maximum length of life and service. The price—the unheard of figure of \$840.00—is due to correct designing, engineering and quantity production.

The even distribution of weight, compact unit design, and low center of gravity, give the SAMSON great stability, making it hug the ground and preventing all danger of rearing up and tipping over.

The SAMSON MODEL M is the one tractor you should look at before you buy a tractor of any make or kind. It's not too heavy, it's not too light. It is accessible, easy to operate, dependable and sure.



Booklet Sent FREE!

Ask your dealer for a demonstration of the SAMSON MODEL M or write today for FREE booklet which gives you a comparison in figures showing the cost of maintaining the SAMSON MODEL M compared with horses. You will be surprised at these figures. Horseflesh is an expensive luxury—to say nothing of the chores three times a day, every day in the year, and the drudgery they cause you.

Every farmer should have a copy of this instructive book. Sent FREE!

SAMSON TRACTOR COMPANY, 110 Samson Avenue, JANESVILLE, WISCONSIN

Division of General Motors Corporation

Manufacturers of Samson Trucks, Samson Passenger Cars, Samson Tractors and Samson Farm Implements

Here, Mr. Farmer, is the tractor that does not take a fortune to buy or the profits from your farm to maintain

Write for FREE Booklet

What the Samson Does:

Draw Bar

- will pull a two or three-bottom plow.
- will pull a tandem disc harrow.
- will pull two 20-foot spike-tooth harrows.
- will pull two 4-horse grain drills.
- will pull two 7-foot binders.
- will pull large road grader or do any other heavy-duty, draw-bar job.

Belt Power

- will handle any heavy-duty belt power job.
- will run a 22 to 24-inch grain separator.
- will run a 4 to 6-hole corn sheller.
- will run a heavy buzz saw.
- will run a heavy-duty grinder or ensilage cutter up to 14 inches.
- will run a centrifugal water pump for irrigation purposes.
- will handle stone crusher or large concrete mixer
- will handle large hay balers and in fact will do any belt power job requiring steady, reliable power within the range of the machine, from morning till night.

Complete with Platform and Fenders.
Governor, Power take-off, Brackets for
Canopy Top and Regular Cleats.
Price f.o.b. Janesville, Wis., \$840.
Price, f. o. b., Stockton, California, for
Pacific Coast Delivery, \$940.
Prices subject to change without notice.

\$840

The power and light plant authority
in your locality is the

Phelps
dealer



IN selecting the "Phelps" he has solved your problem as to which power and light plant is best for you. He has studied all makes from every angle. His choice of the "Phelps" is your safeguard.

He knows that to be a money-making investment for you, your power and light plant—



must do every power chore of less than tractor size—must have a belt pulley for line shaft work, —must be so powerful as to furnish electric POWER and LIGHT to every building on your farm



He knows "Phelps Farm POWER Farm LIGHT" is the only plant that will do all this work. More than this—he knows it to be so simply built that the housewife can take care of it.

That is why the best dealers sell "Phelps." That is why power farmers everywhere choose it.

Write for Free Catalog

Learn how "Phelps Farm POWER Farm LIGHT" does away with chore drudgery; how it pays for itself in labor and time saved. Address

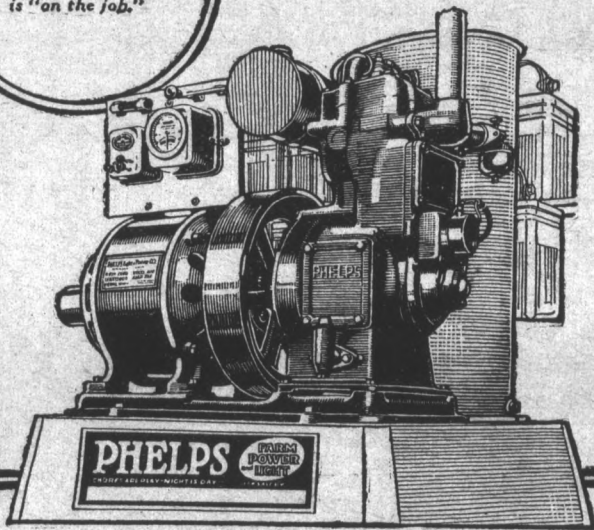


Every hour of the day and night "Phelps" is "on the job."

Phelps Light & Power Co.

World's Largest Manufacturers of 1,500 Watt Units

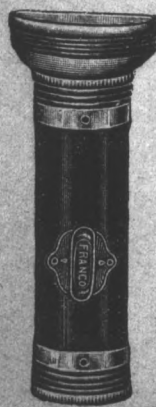
607 First St., ROCK ISLAND, ILL.



Phelps

Flash Light and Battery

Yours Without Cost



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

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

THE MICHIGAN FARMER,
Detroit, Michigan



One Man Saws 25 Cords a Day

The Ottawa Log Saw falls trees or cuts off stumps level with ground. Saws up logs, cuts up branches, ice cutter, runs pump jack and other belt machinery. Mounted on wheels. Easy to move anywhere. 10 Year Guarantee. 30 Days Trial. Write for Free Book and Cash or Easy Terms. OTTAWA MFG. CO., 1501 Wood St., Ottawa, Kans.



I Can Ship Your Engine

When You Want It—Save You \$15 to \$500. Any Style—Stationary, Portable or Saw Rig. Any Size—2, 3, 4, 6, 8, 12, 16, 22 or 30 H.P. Cash or Easy Terms. B.O.B. Ignition on order. Catalog FREE. WITTE ENGINE WORKS 2184 Oakland Ave., Kansas City, Mo. 2184 Empire Bldg., Pittsburgh, Pa.

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

THE VALLEY OF THE GIANTS

A ROMANCE OF THE REDWOODS

By Peter B. Kyne

"Only because it is an unusual down to the bay, to crash through the thing for a young man to do, although log-boom at tidewater and continue after all, why shouldn't he send me a out to the open sea. In his mind's eye blackberry pie if he thought a black- he could still see the red-ink figures on berry pie would please me more than the profit-and-loss statement Sinclair, an armful of roses? Besides, he may his father's manager, had presented a send the roses tomorrow." the end of that year.

"Most extraordinary!" the Colonel The old man appeared to divine the reiterated. trend of his son's thoughts. "Yes,

"What should one expect from such Bryce, that was a disastrous year," he extraordinary crinkly smile that is declared. "The mere loss of the logs extraordinary fine-looking young man was a severe blow, but in addition I with an extraordinary scowl and an had to pay out quite a little money to extra-ordinary crinkly smile that is settle with my customers. I was load- friendly and generous and free from ed up with low-priced orders that year, masculine guile. Why, I think he's although I didn't expect to make any just the kind of man who would send money. The orders were merely taken a girl a blackberry pie." en to keep the men employed. You

The Colonel noticed a calm little understand, Bryce! I had a good crew, smile fringing her generous mouth. the finest in the country; and if I had He wished he could tell, by intuition, shut down, my men would have scat- what she was thinking about—and tered and—well, you know how hard it is to get that kind of a crew togeth- er again. Besides, I had never failed my boys before, and I couldn't bear the thought of failing them then. Half the mills in the country were shut down at the time, and there was lots of distress among the unemployed. I

CHAPTER IX.

NOT until dinner was finished and father and son had repaired to the library for their coffee and cigars did Bryce Cardigan advert to the subject of his father's business affairs.

"Well, John Cardigan," he declared comfortably, "today is Friday. I'll spend Saturday and Sunday in sinful sloth and the renewal of old acquaintance, and on Monday I'll sit in at your desk and give you a long-deferred vacation. How about that program, pard?"

"Our affairs are in such shape that they could not possibly be hurt or bettered, no matter who takes charge of them now," Cardigan replied bitterly. "We're about through. I waited too long and trusted too far; and now—well, in a year we'll be out of business."

"Suppose you start at the beginning and tell me everything right to the end. George Sea Otter informed me that you've been having trouble with this Johnny-come-lately, Colonel Pennington. Is he the man who has us where the hair is short?"

The old man nodded.

"The Squaw Creek timber deal, eh!" Bryce suggested.

Again the old man nodded. "You wrote me all about that," Bryce continued. "You had him blocked which- ever way he turned—so effectually blocked, in fact, that the only pleasure he has derived from his investment since is the knowledge that he owns two thousand acres of timber with the exclusive right to pay taxes on it, walk in it, look at it and admire it—in fact, do everything except log it, mill it, and realize on his investment. It must make him feel like a bally jackass."

"On the other hand," his father reminded him, "no matter what the Col- onel's feeling on that score may be, misery loves company, and not until I had pulled out of the Squaw Creek country and started logging in the San Hedrin watershed, did I realize that I had been considerable of a jackass myself."

"Yes," Bryce admitted, "there can be no doubt but that you cut off your nose to spite your face."

There was silence between them for several minutes. Bryce's thoughts harked back to that first season of logging in the San Hedrin, when the cloud-burst had caught the river filled with Cardigan logs and whirled them a strip of level, fertile land, perhaps

John Cardigan here spoke of a most important factor in the situation. The crying need of the country was a feeder to some transcontinental railroad. By reason of natural barriers, Humboldt county was not easily accessible to the outside world except from the sea, and even this avenue of ingress harked back to that first season of logging in the San Hedrin, when the at a stretch when the harbor bar was cloud-burst had caught the river filled on a rampage. With the exception of a strip of level, fertile land, perhaps

five miles wide and thirty miles long and contiguous to the seacoast, the heavily timbered mountains to the north, east, and south rendered the building of a railroad that would connect Humboldt county with the outside world a profoundly difficult and expensive task. The Northwestern Pacific, indeed, had been slowly building from San Francisco Bay up through Marin and Sonoma counties to Willits in Mendocino county. But there it had stuck to await that indefinite day when its finances and the courage of its board of directors should prove equal to the colossal task of continuing the road two hundred miles through the mountains to Sequoia on Humboldt Bay. For twenty years the Humboldt pioneers had lived in hope of this; but eventually they had died in despair or were in process of doing so.

"Don't worry, Dad. It will come," Bryce assured his father. "It's bound to, some time."

"Yes, but not in my day. And when it comes, a stranger may own your San Hedrin timber and reap the reward of my lifetime of labor."

Again a silence fell between them, broken presently by the old man. "That was a mistake—logging in the San Hedrin," he observed. "I had my lesson that first year, but I didn't heed it. If I had abandoned my camps there, pocketed my pride, paid Colonel Pennington two dollars for his Squaw Creek timber, and rebuilt my old logging-road, I would have been safe to-day. But I was stubborn; I'd played the game so long, you know—I didn't want to let that man Pennington out-game me. So I tackled the San Hedrin again. We put thirty million feet of logs into the river that year, and when the freshet came, McTavish managed to make a fairly successful drive. But he was all winter on the job, and when spring came and the men went into the woods again, they had to leave nearly a million feet of heavy butt logs permanently stranded in the slack water along the banks, while perhaps another million feet of lighter logs had been lifted out of the channel by the overflow and left high and dry when the water receded. There they were, Bryce, scattered up and down the river, far from the cables and logging-donkeys, the only power we could use to get those monsters back into the river again, and I was forced to decide whether they should be abandoned or split during the summer into railroad ties, posts, pickets and shakes—commodities for which there was very little call at the time and in which, even when sold, there could be no profit after deducting the cost of the twenty-mile wagon haul to Sequoia, and the water freight from Sequoia to market. So I abandoned them."

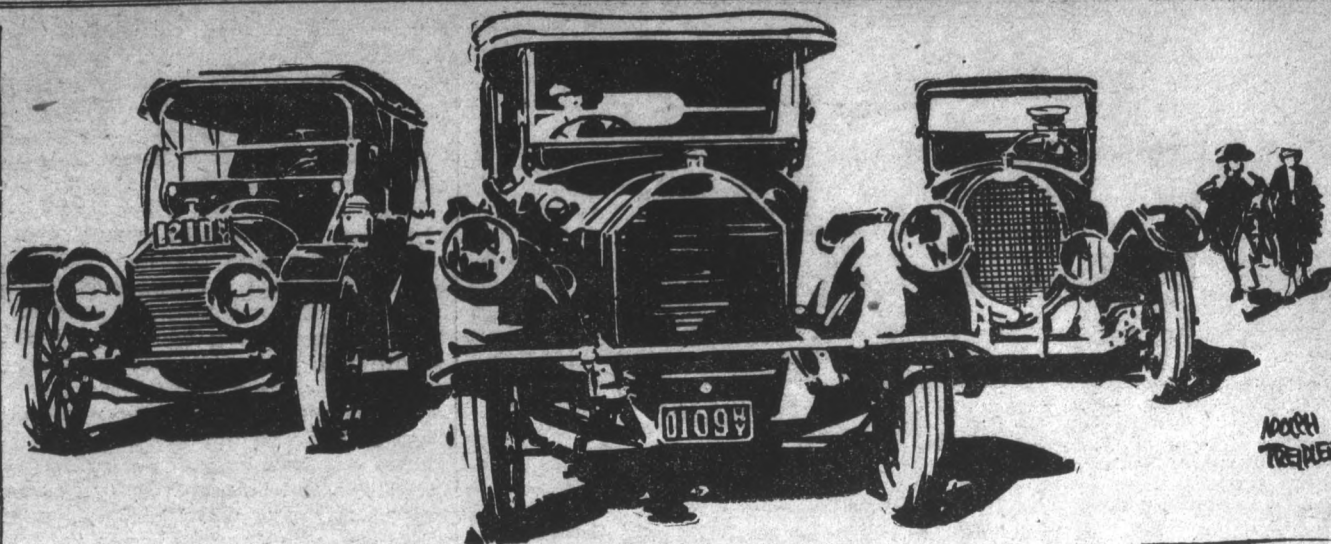
"I remember that phase of it, old partner."

"To log it the third year only meant that more of those heavy logs would jam and spell more loss. Besides, there was always danger of another cloud-burst which would put me out of business completely, and I couldn't afford the risk."

"That was the time you should have offered Colonel Pennington a handsome profit on his Squaw Creek timber, pal."

"If my hindsight was as good as my foresight, and I had my eyesight, I wouldn't be in this dilemma at all," the old man retorted briskly. "It's hard to teach an old dog new tricks, and besides, I was obsessed with the need of protecting your heritage from attack in any direction."

John Cardigan straightened up in his chair and laid the tip of his right index finger in the center of the palm of his left hand. "Here was the situation, Bryce: The center of my palm represents Sequoia; the end of my finger represents the San Hedrin timber twenty miles south. Now, if the



YOUR CAR WILL TELL YOU HOW TO OIL IT

WHAT car do you own?

Is it a small car, a big car, a high-powered car?

How much is it worn?

Is its mileage under 5,000, over 5,000, over 15,000?

The answers to these questions will determine which oil you should use to get the most power and mileage from your machine.

The LAW of LUBRICATION

FOR EVERY MACHINE, of
EVERY DEGREE of WEAR there
is A SCIENTIFIC SINCLAIR
OIL to SUIT its SPEED AND
CONSERVE its POWER.

The Sinclair Dealer has a booklet that will help you apply this Law to your car. Ask for a copy.

SINCLAIR REFINING CO., CHICAGO

Atlanta
Brooklyn
Buffalo
Cleveland
Denver
Detroit
Houston
Kansas City



Louisville
Minneapolis
Newark
Norfolk
Omaha
Rock Island
Tulsa
Wichita

Stop at the Sign of

Sinclair Service

Fertilize Your Swamp Land with GERMAN POTASH

KAINIT, 20% POTASH MANURE SALT
and MURIATE OF POTASH. Also with
NITRATE OF SODA.

While there is not a full supply of either, there is enough to do a lot of good to those who apply in time to get it. For prices write

NITRATE AGENCIES COMPANY
Columbus Ohio

PAINT \$1.35 PER Gallon

ORDER DIRECT FROM FACTORY

We will send you as many gallons as you want of good quality red or brown

BARN PAINT

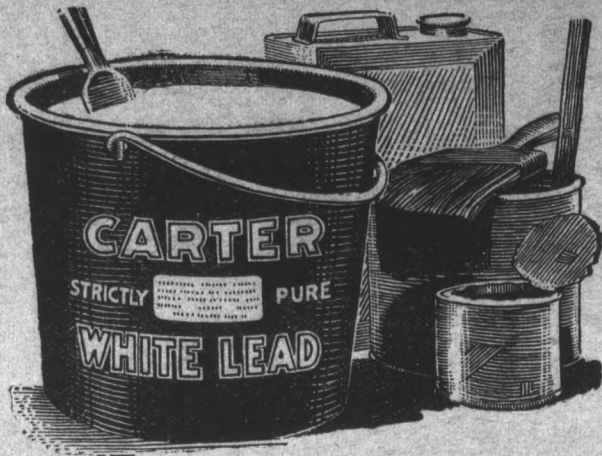
upon receipt of remittance. We are paint specialists and can supply you with paint for any purpose. Tell us your wants and let us quote you low prices. We can save you money by shipping direct from our factory. Satisfaction Guaranteed. On orders for thirty gallons or over we will prepay the freight within a radius of three hundred miles.

AMALGAMATED PAINT CO.
Factory: 383 Wayne St., JERSEY CITY, N.J.

WANTED:

Two good men, one for straight farming and one for stock farm, 200 acres each, must be capable and furnish references. Lake Side Stock & Fruit Farm, Finckney, Michigan. (Address all correspondence to Detroit Office), 536 Grand River Ave., Detroit, Mich.

Man-Man, The Michigan Farmer When Writing Advertisers



The Key to Economy in Painting

is not cheaper paint but *better* paint — the best paint money will buy — and no amount of money will buy anything better than CARTER WHITE LEAD and pure linseed oil — the *painter's* paint.

Cost per gallon figures less than you think.

Cost per square yard covered figures less than many lower priced paints.

Cost per year for *keeping your house well painted* is less than when any other paint is used.

All paint stores sell tinting colors, ground in oil, for making colored paint of CARTER WHITE LEAD, which, at the same time, is best for white paint because it is *whitest*.

"Save the surface and you save all" *Paint & Varnish*

Carter White Lead Co.,

Chicago, Illinois

Good Clubbing Offers

OFFER No. 102.

The Michigan Farmer, one year..\$1.00
Woman's World, one year..... .50
Needlecraft, one year50

Total value\$2.00
All for \$1.60.

OFFER No. 103.

The Michigan Farmer, one year..\$1.00
American Boy, one year 2.00

Total value\$3.00
Both for \$2.50.

OFFER No. 104.

The Michigan Farmer, one year..\$1.00
Christian Herald, one year..... 3.00

Total value\$4.00
Both for \$2.50.

OFFER No. 105.

The Michigan Farmer, one year..\$1.00
McCall's Magazine, one year..... 1.50
Youth's Companion, one year.... 2.50

Total value\$5.00
All for \$3.75.

OFFER No. 106.

The Michigan Farmer, one year..\$1.00
Woman's World, one year50
Little Folks' Magazine, one year.. 1.50

Total value\$3.00
All for \$2.10.

Dye Old, Faded Dress Material

"Diamond Dyes" make shabby apparel stylish and new—
So easy too.

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods, dresses, blouses, stockings, skirts, children's coats, draperies—everything!

A Direction Book is in package.

To match any material, have dealer show you "Diamond Dyes" Color Card.

NINE MONTHS TO PAY

Immediate possession on our liberal Easy Monthly Payment plan—the most liberal terms ever offered on a high grade bicycle. **FACTORY TO RIDER** prices save you money. We make our bicycles in our own new model factory and sell direct to you. We put real quality in them and our bicycles must satisfy you. **44 STYLES**, colors, and sizes to choose from in our famous RANGER line. Send for big, beautiful catalog.

Many parents advance the first payment and energetic boys by odd jobs—paper routes, delivery for stores, etc., make the bicycle earn money to meet the small payments. **DELIVERED FREE** on Approval and 30 DAYS TRIAL. Select the bicycle you want and terms that suit you—cash or easy payments. **TIRES** wheels and parts for all bicycles—at half usual prices. **SEND NO MONEY** but write today for the big new catalog, prices and terms.

MEAD CYCLE COMPANY
Dept. A-77 Chicago

HIGH SPRAYERS

Pressure 35 Years
Experience
Ospraymo Catalog Free
With special features all their own. They claim your kind attention. In every size . . . for every zone. They furnish sure protection.

railroad built in from the south, you would win. But if it built in from Grant's Pass, Oregon, on the north from the base of my hand, the terminus of the line would be Sequoia, twenty miles from your timber in the San Hedrin watershed!"

Bryce nodded. "In which event," he replied, "we would be in much the same position with our San Hedrin timber as Colonel Pennington is with his Squaw Creek timber. We would have the comforting knowledge that we owned it and paid taxes on it but couldn't do a thing with it!"

"Right you are! The thing to do, then, as I viewed the situation, Bryce was to acquire a body of timber north of Sequoia and be prepared for either eventuality. And this I did."

Silence again descended upon them; and Bryce, gazing into the open fireplace, recalled an event in that period of his father's activities: Old Bill Henderson had come up to their house to dinner one night, and quite suddenly, in the midst of his soup, the old fox had glared across, at his host and bellowed:

"John, I heard you've bought six thousand acres up in Township Nine."

John Cardigan had merely nodded, and Henderson had continued:

"Going to log it or hold it for investment?"

"It was a good buy," Cardigan had replied enigmatically; "so I thought I'd better take it at the price. I suppose Bryce will log it some day."

"Then I wish Bryce wasn't such a boy, John. See here, now, neighbor. I'll fess up. I took that money Pennington gave me for my Squaw Creek timber and put it back into redwood in Township Nine, slam-bang up against your holdings there. John, I'd build a mill on tidewater if you'd sell me a site, and I'd log my timber if—"

"I'll sell you a mill-site, Bill, and I won't stab you to the heart, either. Consider that settled."

"That's bully, John; but still, you only dispose of part of my troubles. There's twelve miles of logging-road to build to get my logs to the mill, and I haven't enough ready money to make the grade. Better throw in with me, John, and we'll build the road and operate it for our joint interest."

"I'll not throw in with you, Bill, at my time of life. I don't want to have the worry of building, maintaining, and operating twelve miles of private railroad. But I'll loan you, without security—"

"You'll have to take an unsecured note, John. Everything I've got is hocked."

"—the money you need to build and equip the road," finished Cardigan. "In return you are to shoulder all the grief and worry of the road and give me a ten-year contract at a dollar and a half per thousand feet, to haul my logs down to tidewater with your own. My minimum haul will be twenty-five million feet annually, and my maximum fifty million—"

"Sold!" cried Henderson. And it was even so.

Bryce came out of his reverie. "And now?" he queried of his father.

"I mortgaged the San Hedrin timber in the south to buy the timber in the north, my son; then after I commenced logging in my new holdings, came several long, lean years of famine. I stuck it out, hoping for a change for the better; I couldn't bear to close down my mill and logging-camps, for the reason that I could stand the loss far more readily than the men who worked for me and depended upon me. But the market dragged in the doldrums, and Bill Henderson died, and his boys got discouraged, and—"

A sudden flash of inspiration illumined Bryce Cardigan's brain. "And they sold out to Colonel Pennington," he cried.

"Exactly. The Colonel took over my contract with Henderson's company."

along with the other assets, and it was incumbent upon him, as assignee, to fulfill the contract. For the past two years the market for redwood has been most gratifying, and if I could only have gotten a maximum supply of logs over Pennington's road, I'd have worked out of the hole, but—"

"He manages to hold you to a minimum annual haul of twenty-five million feet, eh?"

John Cardigan nodded. "He claims he's short of rolling-stock—that wrecks and fires have embarrassed the road. He can always find excuses for failing to spot in logging-trucks for Cardigan's logs. Bill Henderson never played the game that way. He gave me what I wanted and never held me to the minimum haulage when I was prepared to give him the maximum."

"What does Colonel Pennington want, pard?"

"He wants," said John Cardigan slowly, "my Valley of the Giants and a right of way through my land from the valley to a log-dump on deep water."

"And you refused him?"

"Naturally. You know my ideas on that big timber." His old head sank low on his breast. "Folks call them Cardigan's Redwoods now," he murmured. "Cardigan's Redwoods—and Pennington would cut them! Oh, Bryce, the man hasn't a soul!"

"But I fail to see what the loss of Cardigan's Redwoods has to do with the impending ruin of the Cardigan Redwood Lumber Company," his son reminded him. "We have all the timber we want."

"My ten-year contract has but one more year to run, and recently I tried to get Pennington to renew it. He was very nice and sociable, but—he named me a freight-rate, for a renewal of the contract for five years, of three dollars per thousand feet. That rate is prohibitive and puts us out of business."

"Not necessarily," Bryce returned evenly. "How about the state railroad commission? Hasn't it got something to say about rates?"

"Yes—on common carriers. But Pennington's road is a private logging-road; my contract will expire next year, and it is not incumbent upon Pennington to renew it. And one can't operate a sawmill without logs, you know."

"Then," said Bryce calmly, "we'll shut the mill down when the log-hauling contract expires, hold our timber as an investment, and live the simple life until we can sell it or a transcontinental road builds into Humboldt county and enables us to start up the mill again."

John Cardigan shook his head. "I'm mortgaged to the last penny," he confessed, "and Pennington has been buying Cardigan Redwood Lumber Company first-mortgage bonds until he is in control of the issue. He'll buy in the San Hedrin timber at the foreclosure sale, and in order to get it back and save something for you out of the wreckage, I'll have to make an unprofitable trade with him. I'll have to give him my timber adjoining his north of Sequoia, together with my Valley of the Giants, in return for the San Hedrin timber, to which he'll have a sheriff's deed. But the mill, all my old employees, with their numerous dependents—gone, with you left land-poor and without a dollar to pay your taxes. Smashed—like that!" And he drove his fist into the palm of his hand.

"Perhaps—but not without a fight!" Bryce answered, although he knew their plight was well-nigh hopeless. "I'll give that man Pennington a run for his money, or I'll know the reason why."

The telephone on the table beside him tinkled, and he took down the receiver and said "Hello!"

"Mercy!" came the clear, sweet voice

of Shirley Sumner over the wire. "Do you feel as savage as all that, Mr. Cardigan?"

For the second time in his life the thrill that was akin to pain came to Bryce Cardigan. He laughed. "If I had known you were calling, Miss Sumner," he said, "I shouldn't have growled so."

"Well, you're forgiven—for several reasons, but principally for sending me that delicious blackberry pie. Of course, it discolored my teeth temporarily, but I don't care. The pie was worth it, and you were awfully dear to think of sending it. Thank you so much."

"Glad you liked it, Miss Sumner. I dare to hope that I may have the privilege of seeing you soon again."

"Of course. One good pie deserves another. Some evening next week, when that dear old daddy of yours can spare his boy, you might be interested to see our burl-redwood-panelled dining-room Uncle Seth is so proud of. I'm too recent an arrival to know the hour at which Uncle Seth dines, but I'll let you know later and name a definite date. Would Thursday night be convenient?"

"Perfectly. Thank you a thousand times."

She bade him good-night. As he turned from the telephone, his father looked up. "What are you going to do tomorrow, lad?" he queried.

"I have to do some thinking tomorrow," Bryce answered. "So I'm going up into Cardigan's Redwoods to do it. Up there a fellow can get set, as it were, to put over a thought with a punch in it."

"The dogwoods and rhododendron are blooming now," the old man murmured wistfully. Bryce knew what he was thinking of. "I'll attend to the flowers for mother," he assured Cardigan, and he added fiercely: "And I'll attend to the battle for father. We may lose, but that man Pennington will know he's been in a fight before we fin—"

He broke off abruptly, for he had just remembered that he was to dine at the Pennington house the following Thursday—and he was not the sort of man who smilingly breaks bread with his enemy.

(Continued next week).

SIMPLE WANTS.

If a fairy offered to grant you a wish, you might choose an automobile, or a palace, or perhaps a soda fountain. But fancy desiring above all things a lead pencil! Yet, according to letters from missionaries, there is nothing that the boys of North China crave so much. One little lad, who received a pencil of his very own, tied it about his neck and wore it for many days as an ornament before he could be persuaded to sharpen it.

IF YOU LIVED ON THE MOON.

Of course you couldn't really live on the moon, because there is no air there; but if you didn't die—

You could jump thirty-six feet in the air, since the force of gravitation is one-sixth of what it is here.

You could not speak, because there would be no air to make sound waves.

You could not smell, because smelling requires air to carry particles of the substance to your nose.

You would have a whole month to work and play in every day; for the moon takes a complete spin on its axis in just the same time that it takes to go around the earth—that is, twenty-seven and one-third days, or what we call a lunar month.—Everyland.



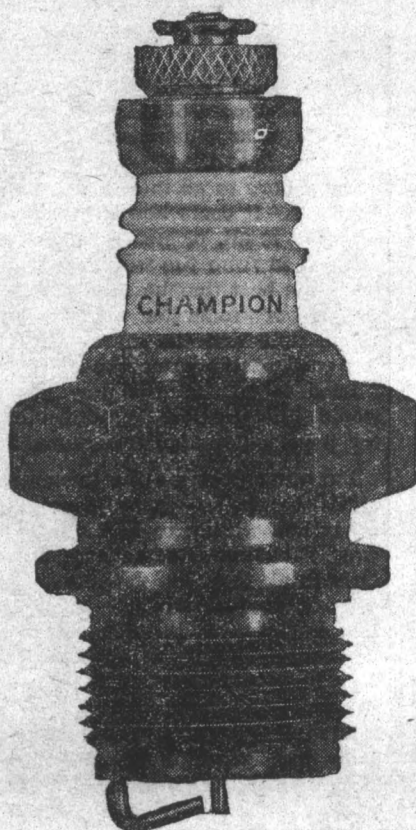
Champion

Dependable Spark Plugs

80% Tractor Equipment

WORKING under full load ten to twelve hours at a stretch, the tractor gives spark plugs their most severe test. It means sustained power and terrific engine heat.

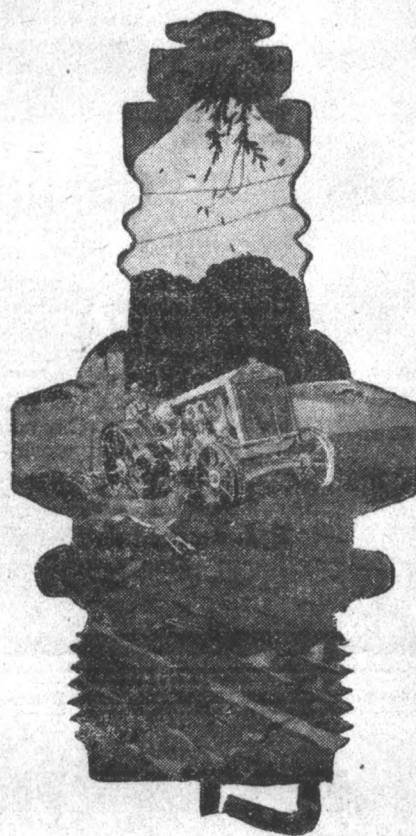
Champion Spark Plugs with their famous No. 3450 Insulators are so universally recognized as the plugs best adapted to fit these unusual conditions of shock, heat and temperature changes that they have been chosen as factory equipment on 80% of all the tractors being built today.



There is a Champion Spark Plug for every type of motor car, truck, tractor, motorcycle and stationary engine. Order a set from your dealer today.

Be sure the name Champion is on the Insulator and the World Trade Mark on the Box

Champion
Spark Plug Company
Toledo, Ohio



Don't be dog-tired after milking

NO NEED to be now that the Empire has established the economy and reliability of machine milking. Everywhere all over the world today men have come to realize the necessity for conserving human labor—cutting down the hours per day so a man can live a longer life of usefulness.

You owe it to yourself, your boys and your help to adopt the modern way of milking.

Write for our catalog 23M and find out all about it.

Empire Cream Separator Co., Bloomfield, N. J.
Chicago, Denver, Atlanta, Toledo, Syracuse, Minneapolis,
San Francisco, Montreal and Toronto.

Also manufacturers of The Separator with The
MILLION DOLLAR BOWL



"The Standard of the Better Dairies"

EMPIRE

MILKING MACHINES

ORNAMENTAL FENCE

6 Cents per Foot and up. Costs less than wood. 40 designs. All steel. For Lawns, Churches and Cemeteries. Write for free Catalog and Special Prices.
Kokomo Fence Machine Co. 47 North St., Kokomo, Ind.

DYNAMITE

Blast out those Stumps and Boulders with Dynamite. Magazines in all parts of United States. Write us for prices.
ACME EXPLOSIVES CO.
Terre Haute, Indiana.

BINDER TWINE 13 3/4¢

Standard Binder Twine, 500 ft. to lb., 185¢ per lb. Less in carloads. Write for circular.
J. H. Burt & Sons, Milwaukee, Wis.

BEEKEEPERS Send for Griggs' big, free catalogue of beekeepers' supplies. Also for prices of fine Italian Bees. **THE GRIGGS BROTHERS CO.**
Toledo, Ohio. Dept. 27.

BINDER TWINE

Get our astonishingly low price to Granges, Equity Unions, Farm Bureaus, etc. Farmer agents wanted. Free samples.
J. H. Burt & Sons, Box 46, Melrose, Ohio.

Every farmer a prospect for our article of unusual merit. Agents making big money. Write for our special offer and territory. Address Box O-51, care of Michigan Farmer, Detroit, Mich.

Please Mention The Michigan Farmer When Writing to Advertisers

convenient!



For Ditching

Inserting in holes in the ground a number of cartridges primed with electric blasting caps, connecting the cap wires with a blasting machine, thrusting down its handlebar and releasing the sudden strength of twice ten thousand men—that's ditching the modern way with



Red Cross Dynamite

Seventy-five million acres of swamp land in the United States lie waiting to be drained, and on nearly every farm there are stumps and boulders to be removed, trees to be planted. Put this Giant Farm Hand to work for you. If your project warrants, we will send a demonstrator to show you the safe, easy, inexpensive way of doing your work—the Red Cross way.

See your Dealer. In any case, find out what Red Cross can do for you—and how. Write for "Handbook of Explosives" today.

E. I. du Pont de Nemours & Company, Inc.

Sales Dept.: Explosives Division
Wilmington, Delaware

POTASH PAYS

The Potash shortage of the last five years has been felt most severely by the farmer of

Swamp Land

Some Kainit, 20 per cent Potash Manure Salt, and Muriate of Potash have come forward from Germany, not so much as formerly, but enough to help those who insist on having it.

Urge your dealer to get it for you at the earliest possible moment.

Soil & Crop Service Potash Syndicate

H. A. HUSTON, Mgr.

42 Broadway

New York

STANDARD GRADE 2-INCH TANK SUCTION HOSE



HOFFMAN COMPANY,

With good smooth bore to reduce friction. Good quality rubber and duck with inserted spring steel wire to prevent collapsing and enlarged ends to fit over pump connections. Sold in 25-foot pieces only. Price, including two galvanized steel clamps \$10 per section.

SANDUSKY, OHIO

Our Boys' and Girls' Page

Help for Young Folks

*The Stitch in Time that Saves Nine,
—Maybe More—By Uncle Ed.*

OF all the letters that come to me, there are none that I prize more than those that are written by boys and girls. I am always thankful

when these young folks have confidence enough in me to sit down and tell me their hopes and aspirations and ask what I think about the plans they have for carrying on their life work.

Every little while a letter comes asking if I would advise the writer to do this, that or the other thing. Not long ago a boy from Maryland wrote me asking if I knew where he could get a little place to raise hogs on. He wanted to go into it on quite a big scale and felt sure he would succeed. He thought it might be that the locality where I lived, the southern tier of New York state, would be a good place to start in.

Well, I had to tell this young friend that the farmers of this section do not raise hogs as much as they do cows, and that I doubted the wisdom of his coming here to go into the hog raising business. It costs heavily to buy feed here, as it all, or nearly all, must be shipped in from the west. So it seemed to me best that he should go where the cost of production would be as low as possible and the markets for selling good at the same time. In short, I tried to counsel this boy just as I would like another to advise one of my boys under similar circumstances.

But what does me the most good of all is to see so many young folks ready and willing to be helped in this way. You know, sometimes boys and girls think they can get along without a great deal of advice. They do not like to listen to the counsel of those who have had more experience than they have themselves. This is sometimes a dangerous way to look at it. I have known of a good many who have just gone ahead and followed their own desires and made bad work of it. It is a very delicate piece of business to venture to advise other folks, at best. So many times we do not understand all the conditions well enough to speak intelligently. Then

we may send a boy or a girl in the very direction that would be worst for him or her.

But to be willing to sit down with a good man or woman and talk things over heart to heart certainly does speak well for the young folks. Often when we are not just sure what we should do in a crisis, if we go to one who knows life and has read many chapters out of the book of experience, we may get the very word we need most to send us on the way to a successful and happy life.

It takes a good spirit on the part of a young man to do this. Tell some boys and girls that it is dangerous to contract such and such habits or to do certain things and they will simply laugh at it and go on doing just as they have a mind to. I remember once taking a little trip on a small steamer just below the falls of Niagara. An old man was the pilot. I sat where I could watch him. A young fellow stood by his side, who wanted to get the feel of the wheel on his hands; and the old pilot stepped back and let him try it. For a time the water was smooth and all went well, but as we got up nearer to the great cataract the river was rougher and the little craft began to quiver. Then the old man stepped to the front and took the wheel out of the hands of the boy. He knew the course and the danger. He did not dare to trust the young man with that precious cargo.

Now, there is something for us here. Not yet have young folks learned the channel of life. Those who are older have, and they have learned, often by bitter experience, where the danger lies, and how anxious they are to keep their boys and girls and young friends from making the mistakes that may cost peace and happiness in later life! So I say, it is fine to want the counsel of older people and splendid to be willing to follow it after it has been given. The making of a choice lies at last with each one of us, but we do well to seek carefully all possible light upon the best way of making that choice. Then, listen patiently and do not hurry, but decide very carefully.

Boys' and Girls' Club Work Covers Michigan



Map shows state-wide scope of Boys' and Girls' Club work in Michigan. (O) with a dot indicates location of state offices at Lansing and Marquette. Counties marked with (X) employ paid county club leaders for full time; those marked with (P) have paid leaders for part time, while those marked (V) have volunteer or local leaders.

DEVELOPING BLUE RIBBON FARMERS.

(Continued from page 728).

pin, of Ypsilanti, winner of the high score in dairy judging at the state fair in September, represented Michigan at the National Dairy Show in Chicago, early in October. Judging against champions from Minnesota, Wisconsin, Indiana, Illinois and Iowa,



Brothers and Sister Win Detroit Championship in 1919).

Galpin made a splendid score in the national event and upheld the honors of state club members in splendid style.

Many Divisions of Work.

The branches of work taken up by different clubs are many. The projects covered might be divided roughly into four main divisions: Garden, live stock, household, and handicraft work. Corn clubs, bean clubs, potato clubs, and general gardening clubs fall under the first group, the home garden work enlisting the largest number of supporters. Pig, calf, poultry and rabbit clubs are chief among the live stock units; while garment making, hot lunch, and canning groups appeal particularly to the young housekeepers.

All of this great variety of club work, however, works toward the same general end. Better methods of agriculture and a higher plane for rural life in general are goals toward which the boys and girls strive, and experiences these young farm people go through in their club activities will leave their mark upon future generations.

The development of trained leaders is an important factor. In summarizing the vital principles back of the whole club system, R. A. Turner, state leader, has the following to say:

"To teach and demonstrate new and better practices in farming and in



The State Bankers' Association Corn Club Cup which Goes to Championship Club.

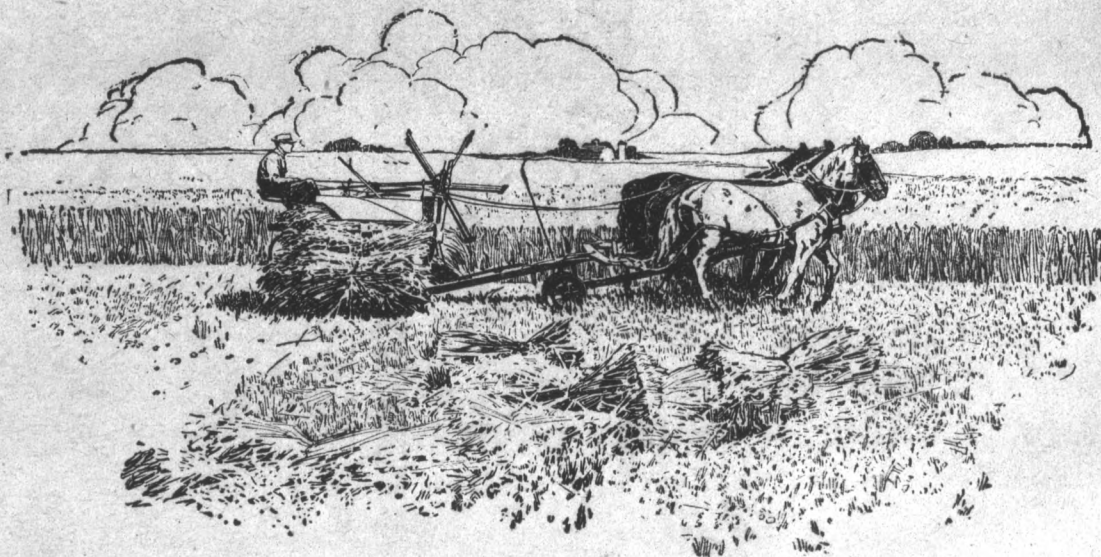
country life through bringing members of groups together in a common undertaking, to furnish avenues for the development of rural leadership, and to tie up the school more closely with the community are fundamental principles back of all our club work."

The boys of today are the farm managers of tomorrow; the girls of today are the home-builders of tomorrow, and to them we look for better agricultural conditions in the future.

THE HEALTH-HOUSE.

The Turkish word for "hospital" is "sick-house," but the Armenians who have received the blessed benefit of its shelter do not like this word, and in their own picturesque vernacular they speak of it as the "Health-House."

Make Short Work of Short or Long Grain



WHEN some of your grain comes up short and stunted, especially on dry, gravelly knolls, and some of it grows tall and heavy, so that it lodges and tangles—then you have a harvesting problem—unless you own a **McCormick, Deering, or Milwaukee Grain Binder.**

With these binders it is possible to cut 1 3/4-inch stubble—get right down close to the ground. The curve of the guards and wide range of platform adjustment permits doing this. And the reel is designed to handle grain in any condition. It can be lowered, raised, swung forward or thrown back almost instantly to accommodate short, long or tangled grain. The binding attachment can be adjusted quickly for short or tall grain, and has a band-placing range of from 10 to 24 inches from the butt of the bundle.

The names **McCormick** and **Deering** and **Milwaukee** are favorably known wherever there is agriculture. They are guarantees of high quality and operating efficiency. Almost 90 years of harvesting machine development and satisfactory service in the fields of the world stand behind them.

See your nearby International dealer now in regard to your binder for early delivery. Place your reliance also on **McCormick, Deering, or International high-quality twine.** Meanwhile, may we send you a descriptive catalog showing latest improvements and features in the world-standard harvesting machines?

INTERNATIONAL HARVESTER COMPANY

CHICAGO

OF AMERICA
(INCORPORATED)

USA

Agricultural Gypsum

A Proven Food for Alfalfa Clover and Other Crops

Tests made in recent years by Agricultural Stations in various parts of the country have shown conclusively:

1. That alfalfa, clover, cow peas, soy beans, vetch, cabbage, turnips, rape, onions, potatoes, tobacco, etc., use much sulphate sulphur.
2. That sulphate sulphur is supplied most economically by AGRICULTURAL GYPSUM.
3. That by increasing legume growth AGRICULTURAL GYPSUM increases the nitrogen in the soil and assures increased future crop yields.
4. That AGRICULTURAL GYPSUM preserves barnyard and hen manure and adds greatly to its value by fixing the ammonia which is rich in nitrogen.

Insure profitable returns from your high priced clover seed, alfalfa seed, etc., by applying this

Economical Plant Food

Your local building supply dealer can furnish you with Agricultural Gypsum. Give it a trial this spring on a test strip.

Send a postcard to-day and we will forward you free our new book "The How and Why of Agricultural Gypsum." Write quickly.

GYPSUM INDUSTRIES ASSOCIATION
Dept. F 111 W. Monroe Street
CHICAGO, ILL.



Take a Premo Jr. Camera with You This Summer



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

The instrument is fitted with an automatic shutter, which works for both time and "snap shot" exposures, and the best grade of single achromatic lens that can be obtained. It has two finders, one for vertical, the other for horizontal pictures,—in fact, it is as well equipped a camera as could be wished for in the box type. It will produce first-class results in all ordinary amateur photographic work, such as snapshots in good light, time exposures, home portraits, landscape and street photography, and the like. This camera is unusually simple to load and operate. A complete book of instructions is included with each one, and even a schoolboy who never had a camera in his hands before, can make good pictures with the Model B Premo Jr. within half an hour after getting it. Sent charges prepaid for 3 Subscriptions, or for One Subscription and \$1.50 additional.

DYNAMITE. I sell direct to the farmer. If you live in Michigan I can save you money.
V. O. DOANE, R. 2. BEAVERTON, MICHIGAN

The Michigan Farmer, Detroit, Mich.

Lowe's



Before
you paint
send for this book

It tells how to do
more painting with less paint

Not so much that it tells you how to use so much less paint when painting; but that it makes it very plain how to do it so you needn't paint so often.

Like growing corn or making jelly—there are one or two ways of painting that are better than any number of other ways that are in use.

This Happy Happening Book (for that's its name) tells you how to use less paint and still do more painting. It will save you paint; save you painting; save you money. Send 10 cents in stamps for the book. Lowe Brothers' Paint is always sold by the one best dealer in each town.

The **Lowe Brothers** Company

499 EAST THIRD STREET, DAYTON, OHIO

Boston New York Jersey City Chicago Atlanta Kansas City Minneapolis Toronto

Paints

Let the **PHONOGRAPH**
—not a salesman
convince you of its quality

You may try this for ten
days—in your own home

It is a wonderful reproducing instrument. True and clear, equipped with silent mechanism, and adjustable to play any kind of disc record made. It is a better Phonograph—it is a

Cornish

We send 12 double disc records—24 selections—with it, and if at the end of the 10 days you wish to, you may return it and we will pay freight both ways. We sell at factory price. Our

terms are very liberal—we make them to fit your pocket-book. Write today for The Cornish Phonograph Booklet and full information regarding a purchasing plan that will greatly interest you—and save you money. A postal or letter will bring it to you promptly.

Cornish Co.

Dept. MF

Washington, N. J.



BEE HIVES

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

BEEWAX WANTED.



BERRY BASKETS

and 16 Qt. crates. Send for Price Card.

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

Please mention The Michigan Farmer
when writing to advertisers.

Woman's Interests

"Service"

THE American people are great orientals than months of investigating on catch words. Someone coins at first hand could accomplish.

a phrase or makes use of a little known word, and over night everyone from Maine to California is working his mind overtime in an effort to get the new expression into his conversation as often as possible. Some of them stick because they are so useful, while many more die of overwork in side of a season. One which has been with us a long time and bids fair to stay is "Service." There are public service corporations, service stations for autoists, the service promised by every progressive firm, and hotels with "the finest service."

On every hand we hear of "service," but few, very few of us, ever get it. What sort of service does your phone give? I'd hate to hear you answer, so I'll hasten on to the mails, the express companies, the man that promised you glass for your windows, and the dealer who was going to have your new flivver for you weeks ago. Mostly you are still waiting for deliveries of everything promised.

And the much talked of service to the state, where is it? Plenty of men and women to serve on election boards, serve on commissions, that work only one day in the year and that on pay day. Plenty to act on investigating committees, thousands to make speeches and tell what the country needs, but how many to take off their coats and go to work? One hundred congressmen and their families stand ready to serve the country by taking a trip to investigate the Orient, while tens of hundreds of farmers will be unable to raise a full crop because of lack of help. One hundred congressmen wouldn't go far towards lightening the labor shortage, but if they should take service with some farmer this summer and do their bit towards raising the food the world needs they'd do more towards helping the starving

The trouble with us all is that we are all looking to get service and none of us ready to give it. I'll amend that by saying few of us are ready to give it; for a pitiful few among us still have the old-fashioned idea that it is better to give than to receive. Two thousand years ago One came to the earth who preached a new doctrine—the doctrine that happiness lies only along the line of doing for others. He went about doing good, not seeking money nor fame nor empty honors. He was among men as One who serves and in every generation since then there have been a few who have followed His example.

It is these few who will save the world today, the few who are willing to give with no thought of reward; whose thought is of the quality of the work they do and not of the amount of pay they draw. The few who realize that what the country needs is deeds, not empty talk. They are not making much stir; indeed, they are scarcely noticed. Their quiet self-effacement is rather scorned, but they can afford to overlook the contempt of men, for they, only, have the key to happiness.

Service is a grand word if we consider it from the right angle. But we must always think of it in the light of what we give, and not what we are to get. If we all make it our business to give service, we can trust to getting it.

DEBORAH.

A FAVORITE FOR HOME GARDENS.

THERE is no flower that returns more of compelling beauty and ornamental effect to the amateur for the small amount of care and attention required than the dahlia. With its great variety of forms and coloring, its dense masses of dark green foliage



The Graceful Cactus Dahlia, so-called Because of its Long, Pointed Petals.



Chi-Namel
FLOOR VARNISH

Heels, hot water or hard use will not harm Chi-Namel floors. The characteristic toughness and durability of Chi-Namel is due to the secret process of treating a waterproof, self-leveling Chinese Oil. Anyone can apply it without laps or brush marks. Each can tells fully how to use it.

Visit Your Nearest Chi-Namel Store

One representative merchant in each locality distributes Chi-Namel products. In his store you may be sure of courteous attention and prompt service. Go in and ask questions. Your Chi-Namel store will furnish color cards, finished samples, quality tests, and estimates. Please write us direct if you cannot locate a Chi-Namel Store.

The Ohio Varnish Co., Cleveland, Ohio

and brilliant flowers standing out in sharp relief, it is a most useful plant for obtaining striking yet harmonious effects. The flowers range in color from maroon, which is almost black, to a pure white, including many combinations of tints and shades, in brilliancy rivaling the salvia, and in delicacy approaching the orchid.

The simplicity of its culture, adaptability to soils, and production of numerous flowers make the dahlia a general favorite in climates where atmospheric conditions are moderate. The plant is a perennial but tender to frost, so that it is necessary to lift the roots in the fall, store them during the winter, and plant out in the spring.

The planting of entire clumps sometimes leads to failure in producing flowers, the strength of the plant being spent in foliage growth. It is therefore advisable to divide the old clumps, using but a single tuber. As this tuber should contain a part of the collar of the plant where the new buds occur, it is best to wait until buds develop before planting.

The distance apart for planting varies with the varieties, but for general purposes three to four feet are usually left between the plants. The time of planting has been a matter of dispute, but there is little doubt that early planting is not as satisfactory as late. To flower properly the wood must be young and succulent, this condition being obtained only through a continuous period of growth without a check. Early-started plants are severely checked by the heat of midsummer and either fail to flower at all or are killed by frost before flowering. The last of May or early June is considered the best period for planting.

Light soils are best suited for dahlias. On very light soils manure or other humus-producing substances should be introduced to improve the moisture-holding capacity, while heavy soils should be lightened by the introduction of sand, lime, sheep manure, or bulky straw manure.

Dahlias may be allowed to develop unrestricted, a stake being driven to each plant to support the stem; or the terminal shoots may be pinched out after three to four pairs of leaves are formed, this checking the terminal growth and producing heavy, stocky stems capable of self-support.

Thorough cultivation to conserve moisture is essential. A mulch of leaves, grass clippings, or well rotted manure may be used during the summer for this purpose. Watering should only be practiced if done regularly, the ground being thoroughly soaked at intervals, depending upon the weather. Mere sprinkling of the ground is deleterious, though spraying the tops during particularly hot weather is very beneficial.

For satisfactory use as cut flowers the blooms should be cut early in the morning or late in the evening. The stems should be placed in deep water in a cool place. The keeping quality may be improved by removing most of the foliage, plunging the stems in hot water and then placing in cold water to which a teaspoonful of salt to the gallon has been added.

After a killing frost in the fall the stems should be cut close to the ground and the tubers carefully dug, avoiding the breaking of necks. After allowing them to dry for a day, the clumps should be stored in a cool, dry place, tops down. If the temperature is likely to rise much above fifty degrees F., or should the atmosphere be too dry, they should be buried in moist sand, fine coal ashes, or sawdust. Excess of moisture should be avoided.

Some flowers in the garden will add materially to its beauty. A row of poppies or others which bloom along about the time the vines start to die, brightens up the brown spots considerably.

PARAMOUNT

—A Real Achievement In Tone Quality

TRUE progress in phonograph building begins with the tone mechanism. The tone is the thing you enjoy. So make sure, first of all, that the tone mechanism of your phonograph is the most improved type.

Three Essential Units

The Sound Box, Tone Arm and Tone Chamber are the three units on which tone quality rests. Beauty of tone and life-like reproduction can be secured in fullest measure only when each of these units has been properly and scientifically developed.

This has been done by the Paramount Organization. The Paramount Sound Box has exclusive features of ingenious construction — features which add distinctive refinement to its interpretation of records. The Tone Arm and Tone Chamber are also specially constructed resulting in perfect tone transmission. You hear no scratchy noises or tinny vibration, but pure, smooth tones — clear, full and resonant.

Plays All Records

The Paramount always reproduces faithfully no matter what make of records is used. There is no limit to the scope of your musical library, if you own a Paramount. Hear it played at your dealer's and hear the latest hits on Paramount Records which are recorded in our specially equipped laboratories.

And remember: You can buy your Paramount for immediate delivery. Choice of six cabinets, exquisitely built. If you don't know the name of the Paramount dealer, nearest you, write us.

Made by
Paramount Talking Machine Co.
Port Washington, Wis.

E. R. Godfrey & Sons Co.
Distributors Milwaukee, Wis.



The Michigan Farmer Pattern Service

No. 3154—Frock for School or Play. Cut in four sizes, 4, 6, 8 and 1 years. Size six will require 2½ yards of 36-inch material. Price 12c.



No. 2852—Girl's Dress. Cut in four sizes, 6, 8, 10 and 12 years. Size 10 will require 3½ yards of 36-inch material. Price 12c.

No. 3200—Child's Dress. Cut in four sizes, 4, 6, 8 and 10 years. An eight-year size will require 3½ yards of 27-inch material. Price 12c.

No. 2813—Girls' Dress. Cut in five sizes, 3, 4, 6, 8 and 10 years. Size six will require 2¾ yards of 36-inch material. Price 12c.

No. 2842—Ladies' House Dress. Cut in seven sizes, 36, 38, 40, 42, 44, 46 and 48 inches bust measure. Size 38 requires 4¾ yards of 44-inch material. Width of skirt at lower edge is about 2¾ yards. Price 12c.



No. 3187—An "Easy to Make" Apron. Cut in four sizes: Small 32-34; medium 36-38; large 40-42; extra large 44-46 inches bust measure. A medium size will require five yards of 36-inch material. Price 12c.

No. 3191—Girls' Dress. Cut in four sizes, 8, 10, 12 and 14 years. A 12-year size will require four yards of 44-inch material. Price 12c.



No. 3199—Juniors' Dress. Cut in three sizes, 12, 14 and 16 years. A 14-year size will require 3¾ yards of 44-inch material. Price 12c.

POULTRY

Hubers Reliable Chicks

500,000 FOR 1920



By Parcel Post Prepaid. Delivered to You. Guarantee Live Delivery. Eggs for Hatching by the Setting or 100.

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

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

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

Hubers Reliable Hatchery
East High St. FOSTORIA, OHIO

DAY OLD CHICKS



HOMESTEAD FARMS

A cooperative work in Pure Breed Practical Poultry. Chicks and eggs delivered at your door prepaid.

Standard Heavy and Laying Breeds.

You will be interested in the Extra Quality White Leghorns inspected and certified as Heavy Producers by the Poultry Extension Specialist of the Agriculture College. Live and healthy chicks and satisfactory hatch from Eggs guaranteed.

S. C. Reds. One pen only Cockerel and five Pullets; large egg conformation. Send for new Catalog with illustrations; it will help you raise your chicks. Also it explains the Homestead Farms plan of cooperation.

STATE FARMS ASSOCIATION,
Desk 1, Kalamazoo, Michigan.

Baby chicks: Standard Bred S. C. White and Brown Also English White Leghorns. Bred to lay large white eggs. Safe arrival guaranteed, shipped up to your door by parcel post. Free catalogue with list. WOLVERINE HATCHERY, R. 2, Zeeland, Mich.

BARRED ROCKS. Eggs from vigorous from heavy laying strain. \$2 per 15, \$3 per 45. Prepaid by parcel post. R. G. Kirby, Route 1, East Lansing, Mich.

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

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

Chicks
Better Produced Day Old Chicks are the kind you want—17 leading breeds at reasonable prices. Our free cat. tells all about them. Send for it today.

Springfield Hatcheries & Poultry Farms, Box K, Springfield, O.

Barred Plymouth Rock eggs for hatching from fullblood prize-winning strain \$2.00 per 15 J. A. BARNUM, Union City, Mich.

Buff Leghorn and White Leghorn Cockerels from 200 egg strains. Eggs and baby chicks. A few pens. Dr. WILLIAM SMITH, Petersburg, Mich.

Barred Rock Eggs from Chicago and Indianapolis winners. Great layers. \$2 per 15, \$4 per 100 and up. Buff Duck Eggs, 28th year. Circular free. G. EARL HOOVER, R. 3, MATTHEWS, IND.

BARRED ROCKS 15 eggs, \$1.75; by prepaid mail. 100 hens laid 10,421 eggs from January 1 to November 1, 1919. Lewis B. Avery, Clinton, Mich.

BUFF LEKHORNS Eggs for hatching \$2.00 per 15; \$12.00 per hundred. White Pekin Duck eggs 25 cents each. LAKE SIDE STOCK AND FRUIT FARM, Pinckney, Mich.

EGGS from trapnested S. O. White Leghorns, Barron strain, also White Wyandottes that lay, at \$10.00 per hundred or \$2.00 per setting of 15 eggs. MACALWHITE POULTRY YARDS, Caro, Michigan

For Sale 4 laying pullets and cock from 260 egg strain and blooded stock. S. C. White Leghorns. Mrs. Henderson, Leesville, Mich.

CHICKS AND EGGS
Rose and Single Comb R. I. Reds. Barred Plymouth Rocks. Superior Color. Prolific Layers. Prepaid by parcel post and safe delivery guaranteed. Illustrated catalog free.

INTERLAKES FARM, Box 39, Lawrence, Mich.

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

CHICKS CHICKS
12,000 chicks a week after Mar. 30. Grand laying strains utility S. C. White Leghorns and Mottled Anconas. Strong, sturdy chicks shipped everywhere parcel post guaranteed safe arrival in lots 25, 50, 100 or more. 12th season, order now. Fine free catalogue.

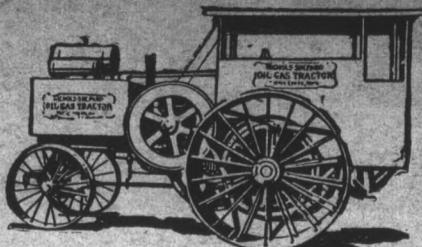
W. VAN APPELDORN, R. 7, Holland, Mich.

Chicks, Leghorns, Minorcas, Spanish, Houdans, Campines, Reds, Rocks, Orpingtons, Brahmas, Wyandottes. Tyrone Poultry Farm, Ponton, Mich.

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

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

Barred Rocks egg contest winners, eggs from strain with records to 290 a year. \$2.00 per setting prepaid by P. P. Circular free. FRED ASTLING, Constantine, Mich.



Burns Kerosene

Drives Like a Steam Engine

"Give me a gas engine strong enough to run a separator," say thousands of threshermen.

Here it is—the

Nichols-Shepard Oil-Gas Tractor

It's the result of 72 years' experience in building threshing machinery.

When gas engines first came into general use, owners wanted to use them on threshers as well as other belt machines about the farm. But the usual gas engine was too light. It lacked the power needed for keeping up speed in the thresher.

We have answered this for you in the design of this Oil-Gas Tractor. Its fly-wheel is extra large and heavy. It insures not only a steady running machine but reserve power not stalled with overfeeding, wet bundles, etc.

Besides being a good thresher power plant it is a practical tractor for general tractor work. Burns kerosene or distillate.

Write for Circulars

NICHOLS & SHEPARD CO.

(In Continuous Business Since 1848)

Builders Exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Tractor Engines Battle Creek, Mich.

Stop Losing Chicks

Put Avicol in the drinking water.

Most people lose half of every hatch, and seem to expect it. Chick cholera or white diarrhoea is the trouble. The U. S. Government states that over half the chicks hatched die from this cause.

An Avicol tablet in the drinking water, will positively save your little chicks from all such diseases. Inside of 48 hours the sick ones will be as lively as crickets. Avicol keeps them healthy and makes them grow and develop.

Mrs. Vannie Thackery, R. F. D. 3, St. Paris, O., writes: "I had 90 chicks and they all died but 32. Then I commenced on Avicol and haven't lost any since. They have grown wonderfully."

It costs nothing to try Avicol. If you don't find that it prevents and promptly cures white diarrhoea and all other bowel diseases of poultry, tell us and your money will be refunded by return mail. Avicol is sold by most druggists and poultry remedy dealers, or you can send 25c or 50c today for a package by mail postpaid. Burrell-Dugger Co., 495 Columbia Bldg., Indianapolis, Ind.

AVICOL stops chicks dying

Sick Baby Chicks?

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

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

is wonder worker for GERMOZONE chicks, chickens, pigeons, cats, dogs, rabbits or other pet or domestic stock. It is preventive as well as curative, which is ten times better. It is used most extensively for roup, bowel trouble, snuffles, gleet, canker, swelled head, sore head, sores, wounds, loss of fur or feathers. 25c, 75c, \$1.50 pkgs. at dealers or postpaid. GEO. H. LEE CO., Dept. F-39 Omaha, Neb.

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

DAY OLD CHICKS S. C. W. Leghorns. Exclusively. Vigorous, sturdy chicks. From heavy laying strain. Seventh season. Send for price list to CITY LIMITS HATCHERY, R. No. 5, Box 11, Holland, Michigan

When Theory and Practice Work Together

Being a Summary of a Back Yard Poultry Venture

By E. V. Root

SCIENCE or theory in farming is rapidly coming into its own. The old type of plodding, conservative farmer is giving place to a generation of agriculturists who are open-minded, willing and eager to take advantage where science points the way. Of course, we are still able to find those who style themselves "practical" farmers, meaning by this that they harbor a profound contempt for anything and everything that the agricultural college or farm bureau attempts to promote. Now, of course, to have any standing as a practical farmer a man must in a measure have made good and it has been my observation that the substantial members of this class belonged to one of two classes.

There are in every locality farms that are easier worked, produce better crops and offer less problems in the way of drainage, etc., than the surrounding lands. Given a farm of this type and any reasonably good farmer will do well. I know farms that have made their owners rich in spite of poor methods and the abuse the land has suffered, and because of their success the owners of these lands are regarded as "practical" farmers.

Again in every community there are men, hard-working and thrifty, who by applying the eight-hour standard to farm work, that is, eight hours in the forenoon and the same in the afternoon, and by denying themselves and their families of all of the luxuries and many of the necessities of life have been able to point with pride to money in the bank and to bear the distinction among the less thrifty in the community of being "practical" farmers. We might add in passing that many of the farmers of this type are not open-minded, they do not favor good roads and good schools and they resent the farm bureau movement. It has also been my observation that few children from these homes remained on the farm or in the country but dark and afford the poorest kind of were actually driven from home by housing.

reason of an over-abundance of hard labor and little or no opportunity for social and recreational diversion. Times, however, are changing for the better in the country and there is now being set up a new standard and the "practical" farmer is going to be the individual who is able to take the find-

ings of the agricultural scientist and apply them to his own condition. In every locality we find men who are doing this very thing. Over in Van Buren county the farm agent, W. C. Eckard, has given considerable time to poultry culling and poultry schools. In this he has had the support of all progressive poultry keepers throughout the county and has been derided by others who "always made money from their flock and never practiced any of that nonsense."

Mr. Eckard has not only preached, but practiced as well. Coming to Paw Paw two years ago he laid the foundation of his flock by buying hatching eggs from high-laying strains of White Wyandottes and Rhode Island Whites. He culled the flock to eighteen birds that were early layers and egg types. From these he hatched five hundred chicks from March to mid June. Because of the small number of birds the chicks varied greatly in age. Cockerels were early sold and the pullets culled to one hundred and forty-five. The earliest hatched began to lay in August and by December all were laying. From this flock egg sales were made as follows: November \$97.16; December \$133.46; January \$107.08; February \$87.16, a total of \$424.86 in the four months not usually regarded as the best for egg production. This flock is producing now about one hundred eggs a day.

Mr. Eckard has not only been able to show this remarkable yield but has accomplished it under the handicap of poor housing. There is no poultry house on the lot where he rents but there is a barn twenty-four feet square. On this barn floor he has one hundred and forty-five pullets. On the north side of the barn there is a shed and here he has housed the eighteen old hens that for more than a year have given better than fifty per cent egg yield. Both of these buildings are in winter by artificial light in order to give a longer working day. He has the building wired for electric light, which he turns on in the morning at five o'clock and the birds are off the

Michigan's Bee Industry is Expanding.



The restricted supply of sweets for human consumption, and the consequent higher prices for them, a better appreciation of the needs of the bee and the improved methods now employed by apiarymen are rapidly bringing the honey industry to one of prominence in the list of agricultural pursuits in Michigan.

perches until seven in the evening, when the lights are dimmed so that the birds will go to roost, and fifteen minutes later are turned off.

Visiting his plant on a cold winter day he found several hens on the nests at five in the afternoon. He feeds a dry mash composed of equal parts of corn meal, ground oats, middlings, bran and beef scrap. His grain, composed of equal parts of corn and wheat, is six pounds per day per hundred birds, scattered in the litter and given half morning and half evening. Sprouted oats are fed the year around and the straw on the floor is changed often to keep floor perfectly dry. In growing his chicks rapidly he uses condensed buttermilk and has just had an experience which might save others some trouble. He has just bought some containers of galvanized metal in which to feed buttermilk and as a result lost a third of a splendid hatch of early chicks; the acid in the milk working on the zinc and producing a poison which was fatal to the small chicks.

Mr. Eckard has been trap-nesting to determine every day layers and his flock the coming year will be "pedigree" hatched. He is not engaged in raising poultry and eggs to sell at a high price for breeding purposes. All of the eggs sold went for market purposes and he is demonstrating that it can be made to pay well. Mr. Eckard's experience indicates that the strain of Rhode Island Whites that he has are a superior utility bird; they mature early, are excellent winter layers and eggs hatch exceedingly well. The demonstration on this "back yard" poultry ranch shows what may be accomplished under even unfavorable circumstances when theory and practice work together.

M. A. C. NEWS LETTER.

(Continued from page 742).

tilizers or manure next the roots. Excellent results will follow using well-decomposed manure in holes both under and around the trees where good top soil is placed in contact with the roots.

"Severe heading back of trees when planting tends to insure more of them living."

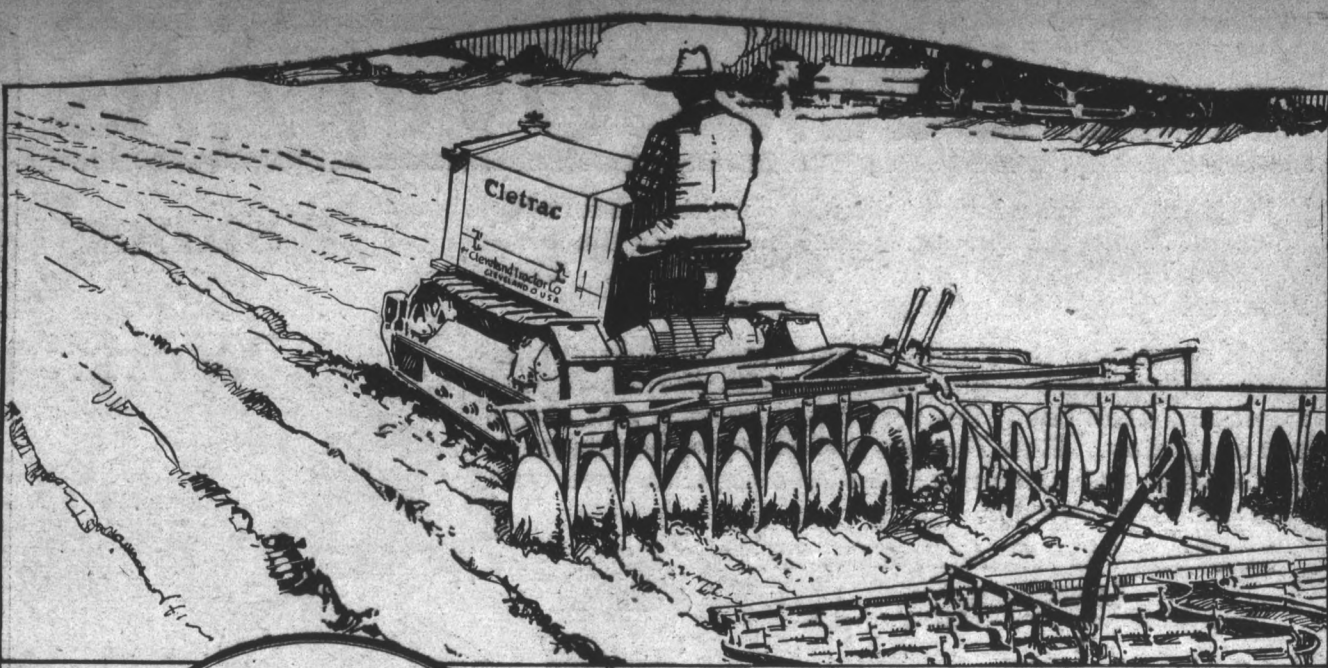
Courses especially planned for rural teachers will feature the six weeks' summer school at M. A. C. from June 21 to July 30, plans for which have just been announced by Director E. H. Ryder. The studies offered will be more complete than ever before and inquiries received at the directors office indicate a heavy enrollment, due to unprecedented demand for country life leaders of all kinds.

The usual special conferences, such as that of the ministers, will be held in connection with the school. In addition there will be general courses in applied sciences, English and economics.

That food prices are bound to continue high and consumers must come to realize this fact, or their boycott methods will force them still higher, is the view of C. W. Waid, potato expert and president of the Potato Association of America. As an instance he cites the potato boycott, which though aimed at profiteers is in reality hitting the innocent producers, since short crop and lack of marketing facilities made high prices inevitable.

Every wage increase received by a large class of laboring men draws many men and boys from the farms and thus lowers the production of foodstuffs, according to Mr. Waid.

"Investigation shows that there are 25,000 less working men on the farms of New York state this season than in 1919," he says, "while Ohio finds a reduction of ten per cent in its farm labor supply. There will be nearly one million acres less in crops in Ohio this year than last."—HENSCHAW.



Cletrac
TANK-TYPE
TRACTOR



Wheels on a track — the
Cletrac way — take less power

Soft Ground Doesn't Stop the Cletrac

From January to January, the Cletrac takes on all the hard jobs over soft, wet ground or mellow seed-beds and never sinks in or packs the soil.

The demand today is for the fast, light-footed tractor—for the tank-type Cletrac. It rides lightly and easily over the top of soft soil and turns practically all of its ample power into direct draw-bar pull.

The Cletrac not only plows but does quick, thorough fitting that gives you a clean, clear seed-bed to start with,

gets all crops in on time and insures a bigger yield.

After planting, it still keeps going on the fill-in work between field jobs and is ready for an early start in haying.

Let us tell you more about the sturdy, economical Cletrac—how it handles all farm work. See the Cletrac Dealer near you or write today for the booklet "Selecting Your Tractor!"

The Cleveland Tractor Co.

Largest Producers of Tank-Type Tractors in the World

19021 Euclid Avenue

Cleveland, Ohio



HILLPOT CHICKS THAT PAY

Strong, healthy chicks from heavy layers. Well bred, well hatched—the sort that start you right in profitable poultry raising. Four big hatches weekly. Post prepaid. Safe delivery guaranteed anywhere in U. S. A.

	Per 100	50	25
White Leghorns	\$20.00	\$10.00	\$5.00
Black Leghorns	22.00	11.00	6.00
Barred Rocks	25.00	12.50	7.00
White Wyandottes	30.00	15.00	8.00

W. F. HILLPOT, Box 69, FRENCHTOWN, N. J.



They Lay and Pay!

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

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

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

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

Orescent White Leghorns; also, Anconas, Brown and Buff Leghorns, Black Minorcas, Reds, Rocks (Barred and White), and Wyandottes (Silver-Laced and White). WE HATCH the eggs of Hoganized flocks on range on separate farms. Orescent Egg Company, Allegan, Mich.

Baby Chicks. Eleven leading varieties, bred from show-stock, to produce eggs, at utility prices. Send for illustrated catalog and price list. Ohio Poultry Yard and Hatcheries, Dept. B, Marion, O.

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

Edgewood Chicks S. C. White Leghorns, Barron Strain \$20 per 100. Guaranteed. EDGEWOOD POULTRY FARM, Brighton, Mich.

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

FOR SALE White R. Eggs for Hatching. Fitchelle Strain. CHAS. KLETZLEN, Bath, Mich.

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

HATCHING EGGS Plymouth Rocks (all varieties), Wyandotte, Ancona, and Rouen Ducks. Catalog 2c. Sheridan Poultry Yards, R. 4, Sheridan, Mich.

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

BIG 5 to 6 POUND White Leghorn hens, 7 pound males. On account of their larger size they stand cold weather better and lay all winter. Free catalog gives winter egg records, describe feeding methods, etc. A. WATCHEK, Gobleville, Mich.

JOHN'S Big Beautiful Barred Rocks are hen hatched grow quick good layers 30 eggs \$1.50; 50, \$3.00; 100, \$5.00. Photos. John Northou, Clare, Mich.

Rhode Island Whites Are the best all purpose birds being year round layers. Egg and chicks and a few good males. H. H. JUMP, Jackson, Michigan.

LOOK: BABY CHICKS AND DUCKS 10 breeds of chicks, 4 breeds of ducks. Utility and Exhibition grades. Postage paid and live delivery guaranteed. Capacity 100,000 weekly Catalog free. Stamps appreciated. **NABOB HATCHERIES, Gambier, Ohio.**

LAYBILT S. C. W. LEGHORNS

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

R. C. Brown Leghorns eggs \$1.50 for 15, \$8 per 100. White Pekin duck eggs \$1.50 for 15, \$8 per 100. 8. White Chinese geese eggs 40 cents each. MRS. CLAUDIA BETTS, Hillsdale, Mich.

Rhode Island Reds for sale. Eggs for hatching at \$5 per fifty. BURT Sisson, Inlay City, Mich.

Rhode Island Reds Eggs for hatching from vigorous birds \$1.50 per 15 or \$8 per 100. MRS. R. S. EDDY, R. 2, Cassopolis, Mich.

Single Comb Rhode Island Red Eggs for hatching. Finest matings, well bred winter layers. \$3.00 per setting; \$8 per 100. Investigate. Babcock and Son, R. D. 6, Battle Creek, Mich.

S. C. Brown Leghorns Excellent layers. Farm range. Eggs postpaid, 15, \$1.50; 50, \$3; 45, \$4; 100 \$8. Floyd Robertson R. 1, Lexington, Indiana.

S. C. B. Minorcas eggs from vigorous stock good layers. After May 1, \$3.15; \$5.30. CHAS. SCHOOK, Allenton, Mich.

S. C. Black Minorcas exhibition stock Northrup strain. Eggs for Hatching \$3.00 for 15—\$12.00 per 100. Cass Poultry Yard. C. J. Deedrick, Vassar, Mich.

S. C. W. ORPINGTONS 15 eggs \$2.50; 100 eggs \$10.50 prepaid. Order from ad or write. M. E. Thompson, Evergreen Rd., Redford, Mich.

Silver Laced Golden and White Wyandotte eggs from best quality only \$3.00 per 15, \$5.00 per 30 by prepaid parcels post. C. W. Browning, R. 2, Portland, Mich.

Additional Poultry Ads on Page 763

Blue Buckle Overalls

Union Made

To turn out the longest wearing, most comfortable work-rig on the market, is the idea back of the manufacture of Blue Buckle Overalls and Coats. That means biggest-value for your money.

You'll appreciate the skillful Union workmanship and the staunch indigo blue denim in Blue Buckles; the non-ripping reinforced back band; the real brass buttons and clasps put on to stay. Blue Buckles will give you premiums in extra-wear and extra-comfort above anything you ever experienced in overalls.

JOBBER OVERALL CO., Inc.

Lynchburg, Va.

Largest manufacturers of overalls in the world.



**"Strong
for
Work"**

Sticking to the

A REVIEW of prices and conditions affecting the swine industry during the past decade proves that the farmer who keeps a reasonable number of good hogs, and does not allow adverse temporary conditions to interfere with his general system of management will during a series of years get reasonably satisfactory results, while the in-and-out hog grower will rarely hit the mark at which he is aiming. Men who have followed a definite system of crop growing and feeding hogs during periods of depression, conducting their business along approved lines with respect to economy, have made as satisfactory profits as those made by the successful farmers in other lines of live stock husbandry.

In common with other lines of live stock breeding and feeding the farmer who feeds hogs must assume his share of the risks during the next two or three years. Hog prices have recently experienced a decline which is sure to result in decreased production of pork in 1920. But with industry on a prosperous basis, labor sharing in the profits to a greater extent than before the war, and with no restrictive measures on meat consumption, the element of risk incidental to finishing hogs for market is not sufficient to cause prudent men to take a pessimistic view of the situation. It is a time, however, when every feeder should adopt a safe and conservative policy and not attempt to feed more hogs than he can finish for market in good condition without investing too heavily in purchased feedstuffs.

Economy in the use of feeds and the adoption of labor-saving methods are imperative, and short feeding periods in which cheap bulky feeds play as important a part as consistent with rapid gains will undoubtedly yield the greatest net profit. High prices for grain feeds are always subject to sudden and violent fluctuations which have a tendency to make the marketing of hogs more of a gamble than is the case during normal times. In the face of present marketing conditions the hog grower is justified in planning his feeding operations so that he can market his hogs at different times of the year, rather than following the common practice of having them all conditioned at one time, and depending upon his good luck to carry him through. Sacrifices that frequently result from this method are sufficient to justify feeders to practice a close-to-shore policy, and not be forced to put their hogs on the market at a time when it does not want them.

Ample provision should be made for the supply of suitable feeding materials. Many a hog grower has overlooked the feed problem only to realize that putting weight on a large drove of hogs involved serious outlays. In his natural environment the hog is a forager and roughage consumer, so that the skill of the farmer to utilize such feeds to the most profitable limits ensures far greater profits than can be made from feeding concentrated feeds alone. Successful hog feeding consists of feeding the materials you have at hand in the proper combinations so that all of the needs of the pig for making the most growth and fat in the quickest time will be satisfied. If the farm does not supply all of the materials, it will be necessary to purchase what is needed. Just what feed will prove the most economical and efficient depends upon the price of feeds and their availability.

While corn is the most important grain feed there are many times when barley and oats may be used to advantage in feeding breeding stock and growing pigs. So the farmer who desires to follow a safe and conservative

BREEDERS' DIRECTORY

Change of Copy or Cancellations must reach us
Ten Days before date of publication

Wildwood Farms Angus

Home of Edgar of Dalmeny one of the world's greatest sires.
He produced Erodemas, the grand champion bull at show in Perth, Scotland in Jan. 1919, and the produced Blue Bell a cross-bred heifer which was awarded the championship at the Smithfield, (Eng.) fat stock show in Dec. 1919. (The latter is Englands, equivalent of our Chicago International.)

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

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

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

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

WILDWOOD FARMS

ORION, MICHIGAN

W. E. SCRIPPS, Prop., Sidney Smith, Supt.

WOODCOTE ANGUS

Established in 1900

Trojan-Ericas and Blackbirds.

Write for 1920 Bull sale list.

WOODCOTE STOCK FARM,
Ionia, Mich.

For Sale My herd bull and eight registered Aberdeen Angus Females. Six due to freshen this spring also two yearling bulls. Information cheerfully given. W. Bradley, Phone 90-5, Brighton, Mich.

For Sale At reasonable prices. Registered Aberdeen Angus bulls from ten to twenty-two months of age. LANG BROS. Davison, Mich.

GUERNSEY BULL CALVES whose sire's dam made 19,460.20 milk, 999.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.80 fat.
T. V. HICKS, Battle Creek, Mich.

FOR SALE Three Aberdeen-Angus bulls, age 20 months, nine months and seven months. Bred from the best stock in America. Also 320 acres land in Isabella County.
BRINTON F. HALL, Beiding, Michigan

Guernsey Bull Calf, Linded of Walter Phipps Farm. Born May 2-1919. \$100.00 f.o.b. Novi or Birmingham. Walter Phipps Farm, 80 Alfred St. Detroit, Mich.

GUERNSEY BULL CALVES FOR SALE

\$50.00 and up. Sired by Noro's Mayking Mayrose Breeding. This is accredited herd against tuberculosis from State and Federal government.
Avondale Farms, Wayne, Mich.

FOR SALE

Guernsey Bull. Serviceable age. A. R. records dam 530 lbs. granddams 766 lbs. and 555 lbs. A son of Anton's May King.
GILMORE BROTHERS, Camden, Mich.

Guernseys Federal inspected herd. Bull 2 yrs old & son of Imp Spotswood Sequel, dam's A. R. record 419 34 lb. E. class G. Bull calf 8 mo's. old, 6 bull calves 2 to 5 mos. old. Satisfaction guaranteed G. W. & H. G Ray Albion, Mich.

Registered GUERNSEYS-Two orders for the same bull calf the same day makes a fellow mad, just one left, that will be old enough for service in a couple of months.
J. M. WILLIAMS, North Adams, Mich.

Reg. Guernsey Bulls for sale cheap from 1 to 12 months old and from good producing and tuberculin tested cows. C. E. Lambert & Sons, Linwood, Mich.

For Sale Registered Guernsey bulls, May Rose breeding cheap if taken soon Come or write.
John Ebels R. 2 Holland, Michigan.

For Sale cows and heifers fresh and springers one or car load lots. Apply
THE JENNINGS FARMS, Bailey, Mich.

Three registered Granger bull calves, May Rose breeding, closely related to Spotswood Daisy Pearl, Dolly Dimples, Langwater Nancy, Langwater Hope, Langwater Daisy and imported Itchen Daisy 3rd cows that have the higher milk and butter fat production of the breed. Calves sired by Albany's King of Anna Dean Farm; his grand dam Spotswood Daisy Pearl. Alec Harper, 54 Edward Lowe, Robinson Rd., Grand Rapids, Mich.

FOR SALE a number of pure bred Holstein stein heifers, age cows and very well bred Holstein bull calves.
JOSEPH H. BREWER, Grand Rapids, Mich.

Facts in BLACK & WHITE

Holstein Breeders and Owners Reap the Benefits

Over \$340,000 has been expended in the past ten years by The Holstein-Friesian Association of America in advertising the merits of the great "Black-and-White" breed. To the farmer who owns Holstein cattle, this far-reaching publicity work is a positive benefit. The continually increasing interests in Holstein cattle throughout America makes for an advance in values, and the breeder of Holstein cattle, wherever he may be, reaps greater profits on the rising market prices of his stock.

If you want to know the way to better, bigger and more profitable dairy cattle breeding, send today for our free booklets.

THE HOLSTEIN-FRIESIAN ASSOCIATION
164 Hudson Street
Brattleboro Vermont.

GENRIDA FARM

OFFERS

BULL CALF, BORN DEC. 26, 1919
Sire: King Flint, who combines the blood lines of 2 families of 3 generations of 30 lbs. cows and 2 generations of 1200 lb. yearly record cows. Dam: Has a 21.39 lb 3 yr. record. Her dam is a 23.99 lb. daughter of Johan Hengerveld Lad.
Walter Hill, Davison, Mich.

REGISTERED Holstein bulls sired by King Zerna R. Alcarra Pontiac, son of the \$50,000 bull; some from good A. R. O. cows. C. H. Giddings, Gobleville, Mich.

Hog Business

system of hog feeding, especially in a region where there is more or less danger of a partial failure of the corn crop to mature sound ears, will find it advantageous from several points of view to grow a few acres of these small grains to help out in his feeding operations in case the corn crop fails. Not only will they prove of great value at such times, but they may be used to good advantage to balance up the protein content of the ration when corn is being fed in liberal amounts to the growing pigs and breeding stock. These feeds will save many dollars in the purchase of protein concentrates and prove an efficient substitute for corn in case of partial crop failure.

Tankage, (meat meal), carrying about sixty per cent protein, is the most efficient and convenient supplement to purchase when corn is being fed. But tankage costs from \$90 to \$100 a ton. So the prudent feeder will look around and see if he cannot substitute such feeds as oilmeal, peanut meal, condensed buttermilk or some other protein feed that can be bought at the right price, at times when pasture supplements are not available. Keeping these things in mind, will enable one to work out a number of ways in which feeding costs can be kept down to the lowest possible figure.

Another factor in economical hog growing at the present time is that of keeping down labor costs. Science and experiments indicate that hogs make more economical gains from the same amount of feeding materials where labor charges are low, that is, on farms where the hogs are allowed to gather a portion of their feed in the fields, and where the grain feeding is simplified as much as practicable by the use of self-feeders. Various feeders report satisfactory results with self-feeders for growing pigs and breeding stock; while other men prefer the old way, inasmuch as it makes it possible for them to make more efficient use of the forage crops and pasture. During the fattening period, however, the hog is the best judge of its own needs, for when left to its choice it will balance its ration to produce the most profitable gain, eating less and less of protein and more and more of carbohydrates as it grows older and fatter. Besides this makes it possible for one man to feed a large number of hogs without neglecting his other work. When conditions justify a full feed of grain there is no doubt that the free choice method of feeding is the most efficient and economical.

Harvesting crops with hogs not only helps to solve the complicated labor problem, but it pays. In test after test in many states it has been found that hogs turned into forage and corn fields waste but little feed and produce cheaper gains than when fed in yards, and they save a lot of work gathering and preparing the feeds. The practice of hogging down corn is so profitable that many farmers sow rape in the corn fields and plan the corn crop so as to extend the length of time during which the hogs can be used in harvesting the crop. Each spring the first corn which they plant consists of a small field of a ninety-day variety. This matures two or three weeks before the main crop and gives the hogs that much more work to do before cold weather comes. The early maturing varieties of corn usually yield rather less than the later ones, but the savings of labor and the extra pork per bushel is full compensation for that. Besides beginning the full feeding period that much earlier makes it possible to hasten the time of marketing the hogs.

W. M. K.



January
Corn-shelling, feed-grinding,
baling, wood-sawing.

February
Corn-shelling, baling, feed-
grinding, wood-sawing, stone-
crushing.

March
Feed-grinding, stone-crush-
ing, corn-shelling.

April
Corn-shelling, feed-grinding.

May
Baling, corn-shelling, feed-
grinding.

June
Baling, pumping.

July
Baling, pumping,
threshing.

August
Baling, pumping,
threshing.

September
Silo-filling,
threshing, bal-
ing.

October
Silo-filling bal-
ing, clover-
hulling.

November
Clover-hulling,
feed-grinding,
wood-sawing,
baling.

December
Corn-shelling,
feed-grinding,
corn-shredding,
straw-baling,
wood-sawing.

Use Your Fordson Every Month

To get full value from your Fordson tractor, 40% of its working time should be spent in operating belt driven machinery—this is the verdict of leading agricultural authorities.

You can profitably use your Fordson for belt work every month from January to December. Study the "Belt Calendar" at the left.

But there is one vitally important thing to remember—to assure the most satisfactory results you should use the belt especially designed for the Fordson tractor—the Little Giant tractor belt.

The Little Giant tractor belt has a clinging grip that conquers pulley slippage. It has a unique construction that withstands the effects of exposure to all sorts of weather conditions necessary in farm work. It is made of four-folds of a single piece of extra quality, heavy weight canvas duck, closely stitched and specially treated to increase the toughness and wearability. The edges are double stitched to increase the resistance to edge wear.

See the Little Giant at your local Fordson dealer's place of business, or write us direct.

United States Rubber Company

Chicago, Ill.

Distributed by

S. W. RAYMOND AUTO SALES CO., Adrian, Mich.

ADDISON FORD CO., Dearborn, Mich.

HUBBELL AUTO SALES CO., Saginaw, Mich.

E. G. KINGSFORD, Iron Mountain, Mich.

For sale by all authorized Fordson Dealers



Winnwood Herd

—SENIOR HERD SIRE—
Flint Maplecrest Boy (166974)

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

—JUNIOR HERD SIRE—
Sir Ormsby Skylark Burke (249 66)

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

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

BUTTER BOY ROSINA PRINCE 25752, Herd sire a 30 lb. cow that made 1345 lbs. in one year, and Dam Butter Boy Rosina 2nd 20054 made 29 lbs., and almost 800 lbs. in ten months, she has a 33 and 34 lb. sister. Have some fine Bulls and Heifers and some heifers bred to him, all from A. B. O. Cows, with records from 22 to 30 lbs. Hampshire Hogs—Fall Boars ready for service, and gilts. Also booking orders for Spring Pigs. Belgian, Percheron Stallions and Mares. Imported and American bred. Write or come and see us. **SAGINAW VALLEY STOCK FARM,** Saginaw, W. S., Michigan. **ELI SPRUNGER & SON, Proprietors.**

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

\$125. gets bull calf born June 1, 19. Sire's six nearest dams av. 33.34 lbs. butter for 7 days. Dam a good producer. **Oscar Wallin, Unionville, Mich.**

Holsteins of Quality

Fifteen High Grade Holstein Cows For Sale
E. A. HARDY, Rochester, Mich.

OUR HERD SIRE

Model King Segis Glista

By a 30 lb. son of Lakeside King Segis Alban De Kol. His dam Glista Fenelle 32.97 lbs. Her dam Glista Ernestine 35.96 lbs. His three nearest dams average over 33 lbs and his forty-six nearest tested relatives average over 30 lbs. of butter in seven days. Write for prices on his sons.

Grand River Stock Farms
C. C. Twiss, Mgr. Eaton Rapids, Mich.

REG. Holstein Bull has been my Senior Herd sire, 20 dams average 31 lbs. must sell to avoid inbreeding as I have 18 daughters of his. **J. R. Hicks, St. Johns, Mich.**

HOLSTEIN BULL CALVES FOR SALE

From dams with good records.
BULL CALVES Sired by 45 lb. BULL.
BULL CALVES Sired by 34 lb. BULL.
BULL CALVES Sired by 33 lb. BULL.
PRICES VERY REASONABLE.

Privilege of return if not satisfied.
A. W. COPLAND,
Birmingham, Michigan.
Herd under State and Federal Supervision.

A BULLY GOOD BULL CALF.

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

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

REGISTERED HOLSTEIN bull calves from an accredited herd for sale. All ages. Apply **MICHIGAN SCHOOL FOR THE DEAF, Flint, Michigan**

Hatch Herd

(State and Federal Tested)

Ypsilanti, Michigan

Offers young sires, yearlings and younger, out of choice advanced registry dams and King Korndyke Artis Vale: Own dam 34.16 lbs. butter in 7 days; average 2 nearest dams 37.61, 6 nearest 33.93, 20 nearest 27.83

Bazley Stock Farm YPSILANTI, MICH.

Who would like a nicely marked Bull calf, whose Sire is a Son of King of the Pontiacs 260, A. R. O. Daughters and whose dam has just made over 20 lbs. of butter in 7 days and who is a grand-daughter of Homstead Girl De Kol Sarcastic Lad 107, A. R. O. Daughters. This young Bull's Dam is also a daughter of Woodcrest De Kol Lad 26, A. R. O. Daughters. Price \$125.00. Herd under State and Federal Supervision. Never had a reactor.

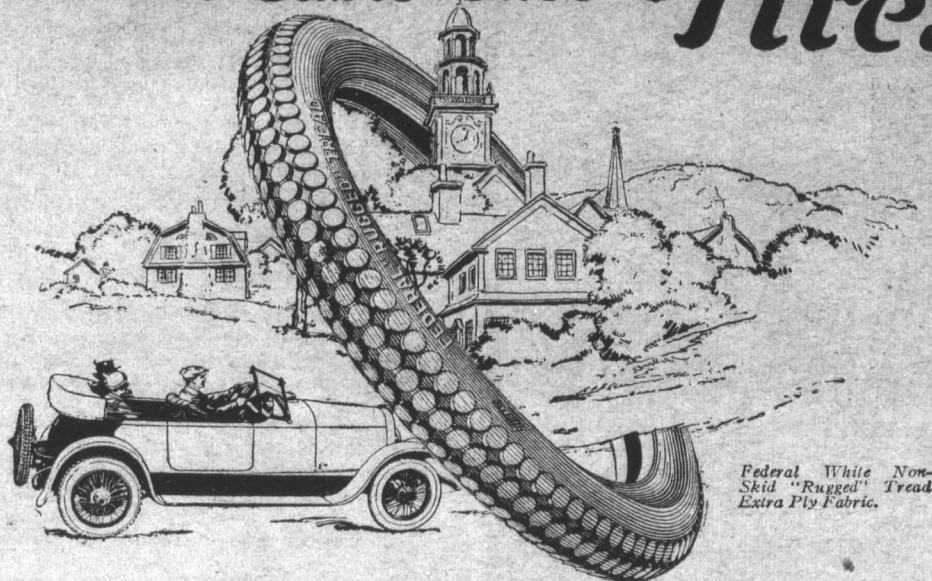
JOHN BAZLEY
319 ATKINSON AVE.
DETROIT, MICHIGAN.

LONG DISTANCE

HOLSTEIN BULL CALF Born Dec. 24, 1919. Seven close up dams average above 1200 lbs. butter and 24,000 lbs. milk in 1 yr. His dam untested \$100. **A. Fleming, Lake, Mich.**

FEDERAL

Double Cable Base Tires



Federal White Non-Skid "Rugged" Tread Extra Ply Fabric.

Rim-Chafe Ended, Road-Miles Extended

The Federal Double-Cable-Base puts a stop to rim-wear which causes blow-outs just above the rim, and other costly forms of rim-damage that permanently end a tire's usefulness.

Four cables of stranded steel grip

the Federal tire in correct position. The miles Federals *save* from the rim, you *use* on the road.

The sooner you begin to use Federal Tires, the more miles you can save.

Why not begin now?

THE FEDERAL RUBBER COMPANY, of Illinois, Factories, Cudahy, Wis.

Manufacturers of Federal Automobile Tires, Tubes, and Sundries, Motorcycle, Bicycle and Carriage Tires, Rubber Heels, Horse Shoe Pads, Rubber Matting and Mechanical Rubber Goods

The Traverse Herd

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

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

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

HARWOOD HEREFORDS

A few young bulls from 10 to 18 months, well bred, in fine condition. Special price for the next thirty days. No females for sale at present. Visitors welcome.

Jay Harwood & Son, Ionia, Mich.
Farm 8 1/2 Miles South of Ionia

HEREFORDS

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

ALLEN BROS.

PAW PAW, MICHIGAN

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

The Wildwood Farm

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

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

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

For Sale Jersey bull calves of Majesty breeding from good producing stock. Herd on Government "Accredited List." Write for price and pedigree to C. A. TAGGETT, R. 2, Fairgrove, Mich.

Combination Dispersal Sale of Holsteins AT ROCHESTER, MICH. MAY 12, 1920

Among the animals to be sold are 14 daughters of 33 lb. bulls. A daughter of a 33 lb. cow that gave 721 lbs. milk in 7 days. A daughter of a 27.83 lb. cow and a 34.75 lb. sire. A fine son of K. K. Sadie Vale from a 26 lb. 3 yr. old daughter of Sir Veeman Hengerveld 2 daughters of a 38 lb. sire about 35 large fine cows, a good many recently fresh and to freshen, and breed to this great son of K. K. S.V. and to a son of Avon Pontiac Echo, who is a son of May Echo Sylvia world's greatest dairy cow. Herds are both under federal inspection, 90 day guarantee for Tuberculosis. Not a blemished animal in the sale. Sale to be held 1 mi. south of Rochester on D. U. R. line. Catalogue on request.

C. G. Hine & E. A. Hardy, Props.

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

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

For Sale Registered Jersey Bulls from NOTTEN FARM, Grass Lake, 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.

Oats and Peas for Silage—By L. M. Johnson

IN the northern states and high altitudes where early frosts make corn an uncertain crop, oats and peas can be grown profitably for silage. Along the northern border of our country, especially in those sections where the frost often prevents the maturing of corn, Canada field peas with a good variety of oats make a most excellent crop for silage. Oats and peas withstand light frosts and make an excellent growth, even with low temperatures. Many of the clay soils in northern Wisconsin and Minnesota are especially adapted to the growth of this crop; and it can be planted very early in the spring, which will enable the grower to mature a crop ready for the silo at about the time of the first cutting of clover. When unfavorable weather for harvesting clover sets in, such as a long rainy spell, the clover can first be put in the silo, after which the oats and peas can be harvested. In sections where corn will not do well on account of a lack of heat, oats and peas, as a rule, will produce more tonnage and the silage will be much better, being nearer a balanced ration. A dressing of barnyard manure will increase the yield, especially on new lands which have not been inoculated by clovers. We have found here in northern Wisconsin the growing of oats and peas the most satisfactory way of getting rid of quack grass; especially when the crop is sowed thickly it will smother out the quack grass. Oats and peas contain more than twice as much protein as corn, and therefore make a ration which is practically well balanced in itself. As a food for dairy cows it is most excellent, and will substitute the best of pasture.

In the fall of 1918 I had an occasion to test the worth of oat and pea silage compared with corn silage. I had been feeding corn silage to a number of dairy cows, and on the twenty-first of January came to the place in the silo where oats and peas had been put in. We noticed at once an increase in the production of milk from our herd. One cow which was nearly dry, giving about fourteen pounds per day, rose quickly to twenty pounds per day; another increased from fifteen pounds to twenty-four pounds, and similar increases were noted by other animals of the herd. This was sufficient evidence for us to prove that oats and pea silage was superior to corn silage, especially when given as we were feeding.

Our method of sowing is to work the ground as early in the spring as it can be plowed and harrowed, then sowing one and one-half bushels of peas to one and one-half bushels of oats per acre. The oats and peas will germinate even when the ground is cold and wet, and late spring frosts will not destroy the plants. The crop will come on in mid-summer, and when the peas are well podded and most of the pods filled, the crop is ready for the silo. It should be cut and put in the silo while still green. Do not allow the forage to become dry and then be obliged to add water; the natural juice of the plants is the best and cannot be replaced by adding water.

Oats and peas can be handled much the same as hay when made into silage. It is better to cut, however, when the dew is on to prevent peas and oats from shelling. The land is cleared in ample time to prepare the ground for winter rye or wheat. This is a special advantage when considerable land is being farmed and labor is scarce and hard to get. Oats and peas are much easier to raise than corn as they can be planted fully a month earlier and will not be damaged by frosts. More than that, no cultivation is needed, and where quack grass is bothersome,

a heavy yield will choke out and destroy the quack grass.

Farmers who live in the northern states can well afford to test out this valuable crop, especially if they are finding it difficult to mature good corn for the silo. Oats and pea silage will come as near duplicating June pastures as any feed I know of, and it is well worth the trial, especially by those farmers who are conducting dairies in the northern states.

KAFFIR CORN FOR A FORAGE CROP.

THE old policy of following the same old rut worn deep by the old timers leads to farm failure. It pays to experiment a little and keep on the lookout for something better. I am not a book farmer, but just an ordinary, sleeves-rolled-up tiller of the soil. I do believe, though, in trying out new crops in an effort to improve on old conditions.

Feed is the big question here in southern Michigan. With oats at one dollar per bushel, corn a dollar and sixty cents, and hay at forty-five dollars per ton, we fruit farmers have to pay out about all of our profits for feed. I reserve a few acres for growing feed and endeavor to make those acres produce to the limit. That is why I tried Sudan grass and that is why I tried Kaffir corn last year.

I planted one-half acre with Kaffir corn, planting with an ordinary hand-planter, with hills three and one-half feet apart both ways. The corn was planted May 20 on a low, wet piece of black soil, with no manure or fertilizer. I found it difficult to adjust the planter correctly and as a consequence the hills received from five to fifteen kernels each.

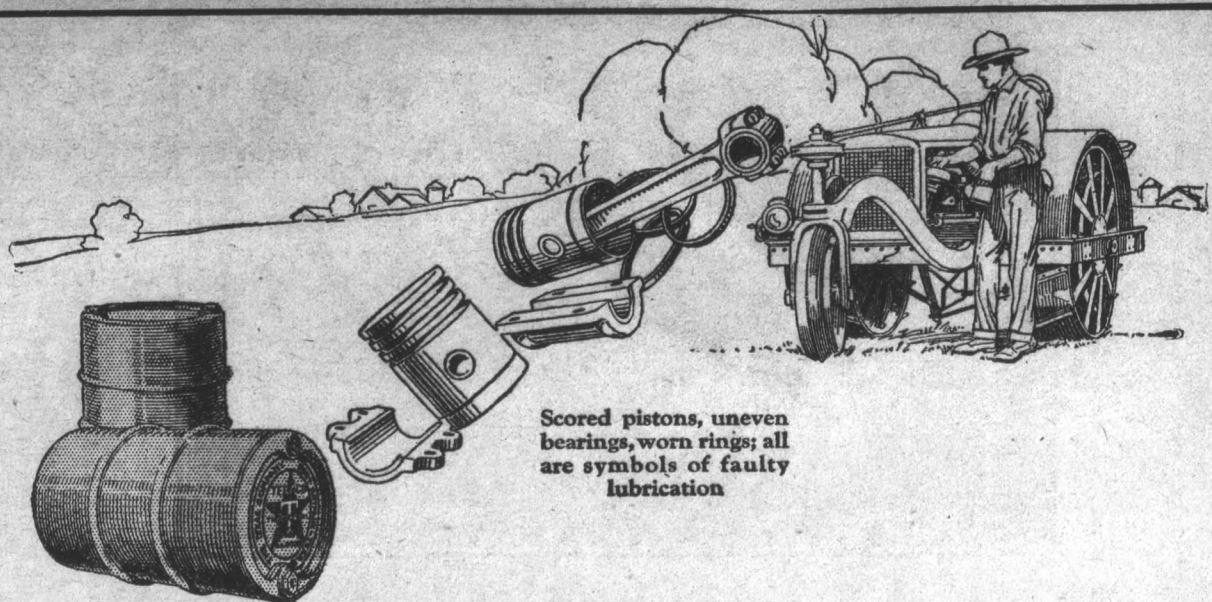
At first the corn grew very slowly and looked spindling. I got a good stand but it looked very weak until the hot dry weather of midsummer. Then it began to grow at a very fast rate. There were from five to fifteen stalks to a hill. The hills with the most stalks made the best feed because it did not grow so coarse. I cut it when it was fully headed out and part of the seed matured but did not cut the seed from the stalks.

Shocks six hills square made very large shocks. The stalks had more leaves than ordinary corn and the leaves were broader and longer. When the fodder was cured I hauled it into a shed and fed it to horses and cows. The cow did well on the fodder and had a better milk flow than she had with ordinary fodder. The horses would leave good timothy hay to eat the fodder and kept fat on it without any grain. Hogs ate the fodder stalks and all seemed to enjoy it.

The half-acre of Kaffir corn produced more feed than any acre of ordinary corn, and the stock liked it better than ordinary fodder. I have no silo but I should think that the Kaffir corn would beat any silage corn as a silo filler. I cannot say whether it would make good silage as the stalks are very sweet and the silage might ferment too much. I leave that question to the experiment station.

I will say, though, that Kaffir corn will make more feed to the acre than any two acres of ordinary corn and the stock will eat it better and do better on the feed. The corn grew from five to seven feet tall for me, but would have done better on better soil. A neighbor has good success with it on light sand and his Kaffir corn matured two weeks before mine. Just one caution though. It must be cut before frost, as a killing frost is apt to cause the formation of prussic acid with consequent danger of poisoning animals. I have no seed for sale, but any seed house handles it. Kaffir corn will make a crop with almost no rainfall and the hotter it gets the better

TEXACO MOTOR OIL ★ THUBAN COMPOUND ★ HARVESTER OIL ★ AXLE GREASE



TEXACO TRACTOR OIL

The greatest foe of the tractor is friction. The toll it exacts is seen in the little scrap heaps that so peacefully repose in repair shops, against tool sheds, and in farm yards. Scored pistons, uneven bearings, worn rings; all are symbols of faulty lubrication. Surely, this is a high price to pay for the lack of a little care and it is all the more deplorable because a little judgment in the choice of oil and some "system" in using it will pay over and over again. Choose a quality oil like Texaco and use the grade recommended for your type of tractor. Oil as often as your instruction book directs. Then you will be sure that a sturdy film of oil is amply protecting every working part. You are sure then that wear is kept down and power increased. Texaco Tractor Oil is shipped in 55-gallon and 33-gallon steel drums, wooden barrels, half-barrels, and 5-gal. drums.



THE TEXAS COMPANY, Petroleum and Its Products
General Offices: Houston, Texas. Offices in Principal Cities. District Office: Chicago, Ill., McCormick Bldg.

McPherson Farms Co. and Cluny Stock Farm FIRST ANNUAL SALE at Howell, Mich., June 8, 1920

McPherson Farms Co. consigns

- 1 30 lb. bull
- 1 29 lb. bull
- 1 bull whose 4 nearest dams average 32.46 lbs.
- 1 daughter of 27 lb. 3 1/2 yr. old
- 1 daughter of 26 lb. 3 1/2 year old
- 2 daughters of a 25 lb. cow.
- 1 daughter of a 24 lb. cow and several other "Top Notch" Holsteins.

All bred to 30 lb. Bulls.

Cluny Stock Farm consigns

- A 3 generation group consisting of
- 1 A 26.8 lb. cow (100.8 lbs. milk in 1 d., 106.9 lbs. butter 30 d.)
- 2 Her 20,000 lb. Sr. 3 yr. old Semi-official record daughter, and
- 3 3 yr. old daughter of No. 2, by a 31 lb. bull.
- Also a 21.49 lb. 3 yr. old 1st calf daughter of Maplecrest Application Pontiac, and several other daughters and 2 sons of same sire, both from high record dams.

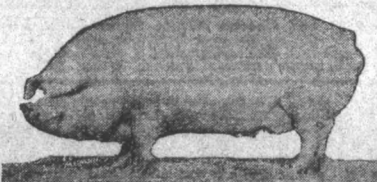
McPherson Farms Co. Howell, Mich. R. Bruce McPherson, I Howell, Mich.

THE FAMOUS O.I.C. SWINE

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

CRANDELL'S PRIZE HOGS,

Cass City, Mich.



For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Ayondae, Max walton Sulton and White Hall Sulton. Model Type, by the Oscola Co. Shorthorn Breeders Ass. John Schmidt, Sec. Reed City, Mich.

BIDWELL SHORTHORNS You Can Buy

a bull that will put weights on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. A roan, senior yearling, a Missile of Villager breeding, a herd bull prospect, Federal Test.

BIDWELL STOCK FARM, Box D, Tecumseh, Michigan

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

Shorthorn Cruickshank Orangeblossom. Herd bull and 2 bull calves 6 and 7 months old for sale. W. C. OSIUS, Hillsdale, Mich.

Richland Stock Farms Horns of the Michigan Champions. Shorthorn Sires in Service:

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

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

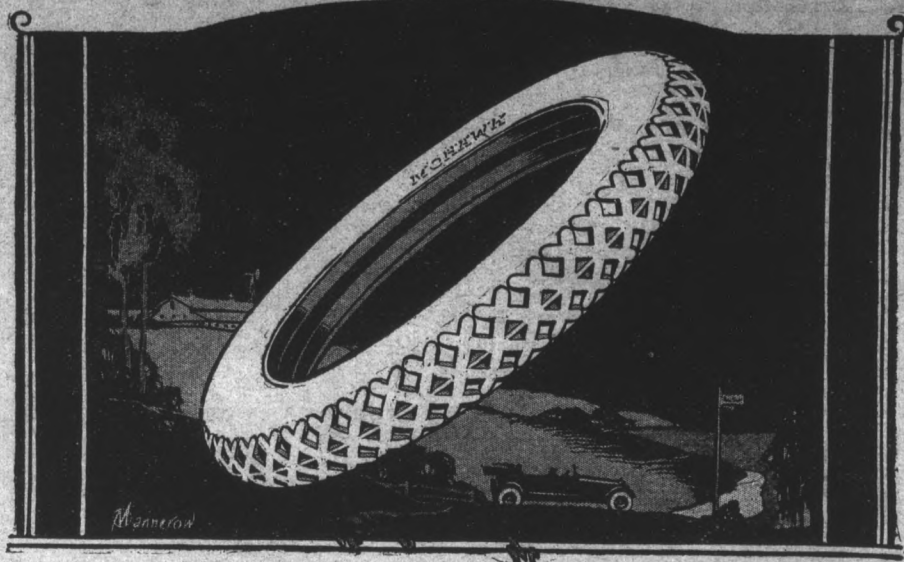
Central Mich. Shorthorn Breeders Assn. offer 40 bulls, 38 females, write for new list. OSCAR SKINNER, Sec. Gowen, Mich.

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

CHAS. WARNER Jr. Breeder of Registered Shorthorns. No stock for sale at present. Chas. Warner Jr., Inlay City, Michigan

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

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



Mohawks Treat You Squarely

The man who buys a Mohawk Tire is usually surprised and delighted at the mileage it gives him.

Experience with other tires has taught him to expect approximately a certain number of miles. When he finds that his Mohawk Tire is yielding from half again to double that amount—naturally, the next tire he buys is a Mohawk.

Then, doubly gratifying is the fact that this next Mohawk does as well—or even better.

In short, he finds that Mohawks give him the sort of treatment he likes from anyone with whom he does business—fair and square—never disappointing—honest and dependable.

And we can offer conclusive proof that this is not an exceptional case, but the universal experience of Mohawk users.

Records kept by our dealers show that 85 out of every 100 who buy their first Mohawk Tires become permanent users. Certainly this is as close to one hundred per cent re-sales as any product can show.

The explanation is simple: Mohawks always have been, and always will be, carefully made by hand, from the purest rubber and the strongest fabric produced.

Made in Cord and Fabric Types—Good Dealers Everywhere Handle Them

MOHAWK RUBBER COMPANY, AKRON, OHIO

Branch: 1507 South Michigan Ave., Chicago, Ill.

MOHAWK "Quality" TIRES

Milking Shorthorns 2 Registered bull calves 5 mos. old, also 2 half bloods 5 and 8 mos. old by pure bred sire out of heavy milking grades. A. V. SHEAP, Orchard Hill Farm, R. 7, Jackson, Mich.

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

HOGS

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

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

Big Type Poland Chinas

Our herd is representative of the best in Big Type. The \$40,000.00 "The Yankee", the \$50,000.00 "The Clansman", and the priceless "Giant Buster" are all represented. We aim to keep up-to-date blood lines and only quality stuff. Come over and see us. WESLEY HILE, R. 6, Ionia, Mich.

Duroc sows and gilts bred to Walts King 32949, who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list. NEWTON BARNHART, St. Johns, Mich.

DUROC-JERSEYS

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

DUROC JERSEYS

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

Michigana Farm Durocs

We breed and sell good hogs. O. F. FOSTER, Mgr., Pavilion, Michigan

ROYAL BRED DUROC GILTS

Dams sired by Michigan Cherry Col. Bred to Jacks Cherry Orion King No. 168259. Son of the \$10,000 champion, Jacks Orion King 2nd, all high class stock, write for prices. The Jennings Farms, R. 1, Bailey, Mich.

DUROC JERSEYS

Bred gilts all sold. Get in your orders early for March and April pigs. Either sex or pairs not akin. F. J. DRODT, Monroe, Mich. R. 1.

DUROC JERSEYS. Spring pigs ready for delivery, \$10.00 each. LAKE SIDE STOCK FRUIT FARM, Pinckney, Michigan.

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

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

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

O. I. C. SOWS FOR SALE

One of the Best Herds in Michigan

Spring gilts and fall yearlings bred for March, April and May litters. I ship C. O. D., pay express and register in buyer's name. If you want a BIG TYPE sow, guaranteed right in every way, write me. J. CARL JEWETT, R. 5, Mason, Michigan.

Duroc Jersey Boars. Let us fill your order for a herd boar sired by Orions Fancy King, also one yearling and a few fall boars by E. D's Defender Col. FREY BROS., Caledonia, Mich.

CHESTERS, spring pigs in pairs or mature stock. A few gilts bred for May farrow. F. W. ALEXANDER, Vassar, Mich.

Raise Chester Whites
Like This
the original big producers

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

O. I. C. and Chester White Swine

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

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

O. I. C's. 2 extra choice last spring gilts. 11 last fall boars wt. 175 to 250 also fall gilts the best I ever had. Farm 3 1/2 mile west of Depot. Citizens Phone 124. OTTO B. SCHULZE, Nashville, Mich.

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

O. I. C's A few choice late fall and winter boars, also a fine two year old boar. WEBER BROS., R. No. 2, Royal Oak, Mich.

O. I. C's. Big type serviceable boars. Gilts bred for May and June farrow. G. P. ANDREWS, DANVILLE, MICHIGAN

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

O. I. C's Eight young boars and spring pigs for June shipment. CLOVER LEAF STOCK FARM, Monroe, Mich.

L. S. P. C.

One 400 lb. sow and 7 pigs by side, price \$100.00. One 275 lb. gilt and 6 pigs by side, price \$85.00. Two choice boars. H. O. SWARTZ, Schoolcraft, Mich.

LOOK B. T. P. C. We are selling at a great sacrifice for the next 10 days extra good gilts to farrow in Apr. choice fall pigs to make room for our herd sows. W. BREWBAKER & SONS, Elsie, Mich.

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

BOARS! Oh Boys!

Sons and grandsons of the Mighty Giant Buster. The big boned useful kind. Priced for a quick sale. JNO. C. BUTLER, Bell Phone, Portland, Mich.

Big Bob Mastodon pigs takes the cake, book your order now. Fall boars and gilts sired by a grandson of Dishier Giant, open or bred to Big Bob for Sept. 23 yearling sons. C. E. GARNANT, Eaton Rapids, Mich.

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

For Sale Big Type Poland China Gilts bred for July, August and September farrow, weighing 225 lbs. for \$60, also spring pigs \$20 each, guarantee satisfaction. DORUS HOVER, Akron, Mich.

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

Big Type Poland all sold out. Watch this ad for further announcements. Breeding stock for sale in season. L. L. CHAMBERLAIN, Marcellus, Mich.

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

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

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

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

it grows. Plant it and handle it the same as ordinary corn and watch the feed shed fill up and the stock smile. Don't stack the fodder outside unless it is thoroughly cured, as it molds if stacked. L. B. REBER.

The work of the Michigan Experiment Station at East Lansing, Michigan, with Kaffir corn is summed up as follows by Prof. J. F. Cox, of the Farm Crops Department: For the past five years Kaffir corn has been grown annually on the station farm. It has seldom reached a height greater than six feet and when cured will not give more than one-half to two-thirds the yield of a good stand of corn on the same land. The Early Amber sorghum, closely related to Kaffir, more nearly approaches corn in yielding ability.

On droughty soils, during seasons of great drought, Kaffir corn might yield more than corn. Kaffir has become an important grain and forage crop west of the corn-belt in regions where the rainfall is not sufficient or properly distributed for corn growing.

For planting late in the season or on light sandy lands, Sorghum and Kaffir corn may be depended upon to give large yields of forage. On fertile ground or soil of average fertility neither of these crops can equal corn in forage or grain production.

LIVE STOCK MARKETING.

THE Live Stock Marketing Department of the Illinois Agricultural Association has employed Lee Divine, a DeKalb county cattle feeder for seven years, to carry out the state survey of grade and purebred live stock. Director H. W. Mumford says the most hopeful opportunity to better live stock marketing conditions is to eliminate sharp fluctuations. The survey will get the facts with which to work out this problem. This department hopes to cooperate with other state associations in getting a survey of the middle west.

From all indications, the wool pool will be larger this year than last. While wool growing is not a big business in Illinois, the comparatively small pool last year saved farmers over \$50,000. The association will have a man at the warehouse this year who will let the shipper know immediately when his wool arrives and again later what grade it falls in.

Professor Mumford has great faith in the Cooperative Live Stock Shipping Associations and is encouraging their organization.

TALK PROBLEMS WITH NEIGHBOR STATES.

THE Illinois Agricultural Association has reached the point in its problems where a closer cooperation of the corn belt states having similar problems would be a great advantage. The presidents and secretaries of the middle west State Farm Bureaus and of the American Farm Bureau Federation will be invited to talk these problems over at the next executive meeting May 11. Some of these problems cannot be solved unless all states in this section work along the same line.

BELGIANS TO GET CATTLE.

A LARGE and regular movement of cattle, to continue throughout the greater part of the year, consigned to the Belgian government, is to be started within the next few days. It is understood these animals will be used to replace war losses. They are to go by way of Boston to Antwerp by the Swiftsure Line of the France & Canada Steamship Corporation of New York. The consignor is P. Burns & Co., of Calgary. Shipments will be made from Northwestern Canada, Kansas City and Chicago direct to the stock yards of Mayer & Lage at Watertown, near Boston. From three thousand to four thousand head will be shipped each month.

STOCK STEERS WANTED.

A FEW days ago a brisk demand for stock steers started up in the Chicago market, buying being led by telephone orders from the famous Mineral Point district in Wisconsin. Unfortunately, there were but few suitable offerings, and the many country buying orders which had accumulated during the railroad strike were added to. The demand was particularly strong for the feeders of the near-beef kind, adapted for a quick finish on corn, and high prices had to be paid for that class. Good one-thousand-pound feeders were wanted for this purpose, and there were a number of sales at \$11 to \$11.50 per hundred pounds, while good lots averaging from seven hundred to eight hundred pounds found an outlet at \$10.25 to \$10.75. Stock cattle going below \$10 lacked in both quality and weight, sales being made as low as \$8.00.

A limited number of stock cows sold for \$7.50 to \$8.50. For some time there has been a slackening interest shown in stock cows and heifers, country buyers having found that because of the rigid tuberculin test, about half of their purchases were rejected. It is almost certain that in the near future many delayed buying orders for stock cattle will be filled, and higher prices are to be expected. There will always be a certain demand for feeders of the choicer class, but such heavy losses have been suffered from paying fancy prices that it is deemed most likely that most stockmen will invest in the moderate priced kinds. A few farmers make good profits by producing high-grade beef cattle, but most stockmen make the best profits on lower-priced lots. In attending mainly to raising hogs, while others are going to feed only one or two loads of cattle. The labor problem enters largely into the cattle proposition.—F.

VETERINARY SERVICE.

Injured Tail.—I have a cow which seems to be in good health, but has something wrong with her tail, some two inches above the long hair. This part of tail seems to be hollow like a tube. The local veterinary says that it may be a result of a dog bite and that the skin and bone seems to be separated. She is Jersey and only two years old, but came fresh last September. J. H., Caseville, Mich.—Doubtless the tail has been injured, causing this separation and it is very doubtful if the parts will ever unite again. Paint the sore parts with tincture of iodine, then pack it with pine tar and oakum, covering it with tar bandages and leave it on for ten days.

Piles.—I have a bunch of hogs that will weigh nearly two hundred pounds each, which are fed corn and oats, equal parts by weight, some of them are troubled with piles. J. G., Wayne County.—Feed food, such as roots, to open their bowels, as constipation is a common cause of piles. Besides, if they have more exercise the bowels will move more freely. Give bicarbonate of soda in each feed. One-half teaspoonful is enough for each hog at a dose two or three times daily.

Mange.—Have been applying coal-tar disinfectant on two mangy cattle for some time, but it failed to cure them. Will you tell me what to apply? J. S., Chesaning, Mich.—One of the least expensive remedies that you can apply is one part sulphur, one-half part carbonate of potash and four parts lard. This ointment should be applied every three or four days, but if their coat is long clip the cows and you will cure them quickly. If this remedy fails write again, saying so, and the writer will prescribe a more active one.

Cats Have Worms.—My cats have so many worms that it is not unusual for them to vomit up worms two inches in length. Several of our cats, also neighbors' cats, have died with them. Reader.—For every pound the cat weighs give one grain of powdered Kamala in a tablespoonful of sweet milk twice a week. The best results are obtained if the cat has fasted for twenty-four hours before the medicine is given. It is seldom necessary to give more than three or four doses.

HEADLIGHT OVERALLS

UNION MADE

OUTWEAR TWO ORDINARY PAIR



Consider the Guarantee Along With the Price

We guarantee Headlights to outwear two pairs of ordinary overalls. Consider this when you are pricing overalls; and bear in mind that Headlights are roomier and more comfortable than other overalls, due to the generous measure of denim that we put into them.

LARNED, CARTER & CO., DETROIT
World's Greatest Overall Makers

Factories: Detroit St. Louis San Francisco
Port Huron, Mich. and Perth Amboy, N. J.

Canadian Factory: Toronto, Ontario (44)

A Famous Cow



In a Famous Stall

Finderne Pride
Johanna Rue
holds a wonderful record as a milk producer—the result of blue blood, good care and scientific feeding.



Stanchions and Stalls

hold the world's highest record for thoroughly satisfactory service—for convenience, economy, labor-saving, time-saving and all-around efficiency. Before you equip your barn, send for the

FREE LIBBEY BOOK

which shows the newest and most highly improved modern barn equipment, including Stalls, Stanchions, Carriers, Watering Bowls, Cupolas, Horse Stall Fixtures, etc. Write for your copy of this book today. It's well worth having.

C. A. LIBBEY CO. (8)

204 Marion Street Oshkosh, Wisconsin

HOGS

"Lindhurst" Poland Chinas

Mammoth Ben's Chief No. 352167 heads our herd. Sows by Mammoth Ben, Upsome Lad, Joe Mastodon, Gertie Jones, and Capt. Price. Pigs by Mammoth Ben's Chief, Mountain Jack, and Orange Model. For sale fall boars and gilts sired by a son of Bower's Mammoth Joe. A few herd sows priced to sell. Get in line for spring boars.
WM. H. LIND, Oltz, Phone, Alto, Mich.

\$420 Extra Profit



W. H. Graham of Middleton, Mo., says in an actual test that \$30 worth of Milkoline made him an extra profit of \$420. Hundreds of others from coast to coast say the same thing.

Hustles Heavy Hogs to Market

Is the title of a little booklet that tells all about Milkoline (buttermilk made better for feeding) and how when fed according to directions it costs but 2c a gallon. Makes hogs and poultry digest their feed—saves time and money. Ask for free copy of booklet and our thirty day trial offer.

460 Creamery Bldg.
MILKOLINE MFG. CO. Kansas City, Missouri.

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

LARGE TYPE P.C. SWINE. One yearling boar
one fall yearling sow, fall pigs, a
few more bred sows. R. W. Mills, Saline, Mich.

Poland China Brood Sows Bred for May and
Maplewood Stock Farm, Allegan, Mich.

FOR SALE A few L. T. P. C. gilts being bred for
A. A. Feldkamp, Manchester, Mich., R. F. D. 2

HAMPSHIRE

Spring boar pigs, sired by Steuben's Perfection
and Cherokee Jim, 1st prize Ind. State Fair. Other
winners at other fairs. Tried sows bred. Satisfaction guaranteed. Will ship C. O. D. Address.

STEBEN'S HAMPSHIRE FARM

R. R. 3, Angola, Ind.

HAMPSHIRE Spring pigs from large litters of
choice breeding, etc. \$15.00 up.
Hampshire Square Deal Farm, Three Rivers, Mich. R. 1

Edgewood Hampshires

All bred gilts sold. Now booking orders for gilts bred
for fall farrow, and pigs for pig club work only.
Depew Head, Edgewood Farm, Marion, Ohio.

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

SHEEP.

KIDS

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

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

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

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

HORSES

For Sale or Trade

Registered Percheron Stallions: Brown
three year old. Gray yearling.
Butler Stock Farms, Portland, Mich.

For Sale or trade Percheron Stallion Danforth No.
105329, 6 years old sound and right in every
way a sure foal getter second prize at West Mich. State
Fair would trade for Dairy Cattle. Apply
THE JENNINGS FARMS, Bailey, Mich.

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

SHEPHERD PONY Stud three years old nicely marked.
Price \$100. Percheron stud eight years old.
E. J. ALDRICH, Tekonsha, Mich.
Price \$300.

LATEST MARKET REPORTS

FIRST EDITION.

The markets in this edition were revised and corrected on Tuesday forenoon, May 4.

WHEAT

In spite of the handicap of adverse financial conditions, grain prices made sharp advances last week to new high levels for the season. Wheat went higher because of the late season for planting other crops, prospective embargoes on Argentine's surplus and a failure on the part of Australia to fulfill contracts made with Great Britain. The world demand apparently exceeds the supply. Present Detroit prices have advanced to the following figures: Cash No. 1 red \$2.98; No. 1 mixed \$2.96; No. 1 white \$2.96; No. 2 red \$2.95; No. 3 red \$2.92 per bushel.

CORN

With elevators at consuming centers practically empty of this grain and little improvement in the car situation, dealers found it necessary to sharply advance prices and then many found it impossible to secure the grain needed. Delayed planting is giving the market additional bullish support. The prices on the local market have advanced to the following: Cash No. 3 \$1.82; No. 3 yellow \$1.87; No. 4 yellow \$1.82; No. 5 yellow \$1.78; No. 6 yellow \$1.74.

OATS

Oat receipts are insufficient to meet the demand and the local elevators are almost empty. Each day brings advanced quotations and many buyers would gladly pay premiums, could they secure a supply that would satisfy their wants. Present quotations at Detroit are: Cash No. 2 white \$1.22; No. 3 white \$1.21; No. 4 white \$1.20.

RYE

Little attention has been paid to this grain and the price remains steady with last week at \$2.20 per bushel for cash No. 2.

SEEDS

This trade is now inactive and quotations remain unchanged as follows: Prime red clover at \$28.50; October \$23.50; alsike \$29.50; timothy \$5.50.

FEEDS

Values are steady except for corn feeds which are higher. Bran \$57; standard middlings \$58@59; fine middlings \$60; coarse corn meal at \$75; cracked corn \$78.50; chop \$69 a ton in 100-pound sacks.

BEANS

While local prices are higher and there is some demand, the markets east and west appear to be unchanged from last week. At Detroit the board quotes immediate and prompt shipment at \$7.75 per cwt. New York reports choice pea beans at \$8, and the choice mediums at \$7.50. The Chicago market is quiet and unchanged at \$7.75 for hand-picked choice to fancy pea beans and \$13 for red kidneys. Offerings there are fairly liberal.

HAY

Consumers are finding it extremely difficult to supply their needs and a firm market is quoted. Prices are: No. 1 timothy \$37.50@38; standard and light mixed \$36.50@37; No. 2 timothy No. 1 mixed and No. 1 clover \$35.50@36. All straw at \$12.50@13 per ton in carlots.

POTATOES

Market conditions have not materially changed the past week. In Detroit Michigan U. S. No. 1's are selling at \$10@10.50 per 150-pound sack. In Columbus the same grade brings \$11; in Cincinnati \$7@7.25 per cwt., and in Chicago \$7@7.10 per cwt. At Chicago the market rules steady with last week.

BUTTER

Jobbers were bidding 60c for No. 1 creamery at Detroit early this week, while the product was offered at 61c. In New York values are down, with creameries ranging from 59½@64c a pound. Chicago values are also off, where the range for creamery stock is 46@61½c. In Philadelphia western creamery extras are bringing 60c this week.

EGGS

Transportation troubles have created a spotted egg trade. At Detroit prices have advanced to 43½@44c. In Chicago they are lower, with firsts bringing 41½@42c and ordinary firsts 38@39c; in New York the trade is irregular with fresh gathered extra firsts at 46½@47c, and firsts at 43@46c. The Philadelphia market has advanced the price of western extra firsts to \$13.05 per case.

CHEESE

This market rules firm with Michigan flats quoted at 29@29½c at Detroit, and Michigan single daisies at 31c. In New York whole milk specials bring 27½@28c, and do average run 26@27c. In Philadelphia full milk fancy 31@33c; ordinary to choice at 25@30c.

WOOL

Despite apparent efforts of eastern operators to throw a note of alarm into the general wool trade, prices appear to be well maintained at a level above the figures of a year ago and dealers who are in need of immediate supplies do not hesitate to pay prices for goods offered. Ohio growers are asking 60c a pound for medium clips and \$1 for fine clips. A highly speculative situation obtains, especially in the English markets.

GRAND RAPIDS

The egg market is higher this week, dealers bidding 41@42c per dozen. Receipts have been liberal and two cars have been shipped. Amounts in storage at present below that of a year ago. Clover and timothy seeds are

lower, clovers being quoted at \$35@36 and timothy at \$6.75 per bushel. Farmers as yet have not done much seeding. The potato market is a little lower at \$4.25@4.50 per bushel. There is a little shortage of some varieties of seed potatoes. New wool is coming into market in small quantities. Dealers pay 50c per pound. Owing to the weather conditions and shortage of help farmers are far behind in spring plowing and seeding of oats. Owing to these conditions the oats acreage this year will be less than last year.

NEW YORK PRODUCE MARKET.

Butter.—The reaction in the butter market has been very marked this week. One week ago buyers were eager for butter and were paying prices one or two cents higher than those quoted. At the present time the quotation on extras is fully 11c under that of last week Saturday, and buyers are limiting their purchases to their immediate needs. Butter has been arriving by truck, by express and great quantities by freight. The most noticeable feature is the quantity of butter that is being shipped by express. Creameries evidently are anxious to get their butter on the market before there is any greater slump in price. Each day this week has witnessed a decline in butter prices, these declines ranging from half a cent to four cents. Undoubtedly we may expect a greater decline before prices again become stabilized. Quotations at the close on Friday were: Extras 65½@66c; higher scoring than extras 66½@67c; firsts 62@65c; seconds 59@61c.

Cheese.—Several large shipments of

cheese have been received by express. The balance of stocks that are in storage are clearing up very well, there being little left but culled-over stock. Export trade has been curtailed by a drop in sterling exchange. The market is fairly firm with quotations on fresh cheese as follows: Common to good 24@25c; average run 26@27c; specials 27@28c.

Eggs.—The consumption of eggs has been considerably below normal during the week. However, receipts have not been high and the market has been fairly firm throughout the week and prices have been sustained. Considerable quantities of eggs have been placed in storage. Southern eggs are of inferior quality. Quotations are: Firsts 43@46c; extra firsts 46½@47c; extras 48½@49c.

Poultry.—The high prices of the last few weeks has caused a greatly reduced consumptive demand and prices in consequence have been forced down. Receipts are high and stocks are accumulating. Large quantities of live fowls have been received by express. Quotations are: Fowls 36@38c; broilers 60@75c; old roosters 23c; turkeys 25c; ducks 23@25c; geese 20@22c.

THE LAMB OUTLOOK.

A FEW spring lambs of this year's crop are moving to market and selling at high prices, the supply being too small so far as to cut any important figure in the Chicago market. Last year's lambs are subject to frequent breaks in prices whenever the offerings happen to be larger in volume than usual, and even on some days when the receipts are not liberal values go off as a result of the large numbers of lambs brought in by the big packing concerns from Fort Worth, Denver and other primary points. The outlook, however, points to high prices in the near future, as the greater part of the lambs have been marketed. The feed lots around Chicago are reported to hold the smallest supplies of sheep and lambs ever known at this season of the year.—F.

Live Stock Market Service

DETROIT

Cattle.

Receipts 1,253. Canners steady; all others \$1 lower than last week's close. Best steers \$11.50@12.75
Best handy wt bu steers— 10.50@11.00
Mixed steers and heifers 9.00@10.50
Handy light butchers 8.00@ 9.00
Light butchers 7.50@ 8.50
Best cows 8.50@ 9.25
Butcher cows 7.00@ 7.75
Cutters 6.00
Canners 5.00@ 5.50
Best heavy bulls 8.50@ 8.75
Bologna bulls 7.50@ 7.75
Light butcher bulls 7.00@ 7.50
Milkers and springers.... \$ 60@ 110

Veal Calves.

Receipts 1,516. Market dull and \$1.50 lower than close of last week. Best \$13.00@14.00
Others 7.00@10.00

Sheep and Lambs.

Receipts 345. Market steady. Best lambs \$ 16.75
Fair lambs 13.00@14.00
Light to common 8.00@11.00
Fair to good sheep..... 10.00
Culls 5.00@ 7.00

Hogs.

Receipts 5,066. Market dull. Mixed hogs \$15.15@15.25
Pigs 14.00@14.50
Shippers should keep pigs back, as there is no eastern outlet.

CHICAGO

Hogs.

Estimated receipts today are 45,000; holdover 4,150. Light and light butcher steady to 10c higher; others slow. Bulk of sales \$13.65@15.40; tops at \$15.60; heavy 250 lbs up, medium, good and choice \$13.35@14.60; medium 200 to 250 lbs medium, good and choice at \$14.25@15.50; light 150 to 200 lbs common, medium, good and choice at \$15@15.60; light lights 130 to 150 lbs common, medium, good and choice at \$14.75@15.35; heavy packing sows 250 lbs up smooth \$12.40@13; packing sows 200 lbs up rough at \$12@12.50; pigs 130 lbs down medium, good and choice \$13.25@15.25.

Cattle.

Estimated receipts today are 17,000. Butchers' cattle and stockers strong to 25c higher; others steady; calves are slow. Beef steers, medium and heavy weight 1100 lbs up, choice and prime \$13.15@14.25; do medium and good at \$11.50@13.15; do common at \$10.75@

11.50; light weight 1100 lbs down, good and choice \$12.25@14; do common and medium \$10.25@12.25; butcher cattle, heifers, common, medium, good and choice \$7.85@13.75; cows, common, medium, good and choice \$7.75@12.25; bulls, bologna and beef at \$8@11.25; canners and cutters, cows and heifers \$4.75@7.75; do canner steers \$6.25@8.50; veal calves light and handyweight medium, good and choice \$12@13.25; feeder steers, common, medium, good and choice \$9@11.75; stocker steers, common, medium, good and choice at \$7.50@11.25; do cows and heifers, common, medium, good and choice at \$7.25@9.25.

Sheep and Lambs.

Estimated receipts today are 18,000. Market steady to strong. Lambs 84 lbs down, medium, good, choice and prime \$16.25@18.25; do culls and common \$11@15.75; spring lambs, medium, good, choice and prime \$13.50@16.25; ewes, medium, good and choice \$10.50@13.50; ewes, cull and common at \$6@10; yearling wethers, medium, good and choice \$13@15.

BUFFALO

Cattle.

Receipts 50 cars; market 50c higher than last Monday; prime shipping steers \$13@14; best shipping steers \$11.50@12.50; medium shipping steers \$11@11.50; Canadian heavy steers at \$12@12.50; Canadian steers and heifers \$10.50@11; best native yearlings \$12@12.50; light native yearlings of good quality \$10.50@11.50; best handy steers \$10.50@11; fair to good kind at \$9.50@10.50; handy steers and heifers mixed \$10.50@11; western heifers at \$9.50@10.50; state heifers \$8@9; best fat cows \$9.50@10.50; butchering cows \$7.50@8.50; cutters \$5.50@6.50; canners \$4@5; fancy bulls \$9@10; butchering bulls \$7.50@8.50; common bulls \$6.50@7.50; best feeders \$9@10; medium feeders \$8@9; stockers \$7.50@8; light common at \$6.50@7.50; best milkers and springers \$75@100; mediums \$5@6.

Hogs.

Receipts 30 cars; market 25c lower; heavy \$15@15.50; yorkers \$16@16.25; pigs \$15.

Sheep and Lambs.

Receipts 20 cars; strong; top lambs \$19.50@20; yearlings \$15@16.50; wethers \$14@14.50; ewes \$13@13.50. Calves \$18@20.

Save 2/3 On Milk Cans



and Cheese Hoops
Thousands of farmers, creameries and dairies now have us rebuild their old cans and cheese hoops like new at startling saving. Dents removed, leaks soldered, handles repaired. Re-finished with clear, bright coating of 99.99% pure tin—guaranteed to positively outlast original finish. Secret process.

Trial Offer Send one can or cheese hoop for trial. Returned to you in two weeks like new. If not pleased and satisfied pay us not one penny. Save your cans and cheese hoops now by having them re-tinned at first sign of rust.

Write Today for low prices and special trial offer.
Acme Galvanizing & Tinning Co.
876 Reynolds St., Milwaukee, Wis.

The special re-tinning process and work of Acme Galvanizing & Tinning Co. is endorsed and recommended by leading dairy authorities and creamery publications.

WALL PAPER

1,000,000 ROLLS Write for Free Sample Catalog of 100 new designs and colorings.
5c Per Roll Why use Paint when 98c will paper Room 12 x 14, 9 ft. high
Martin Rosenberger, 80 ROSENBERGER BUILDING, Cincinnati, Ohio

Save 25% on Roofing

CENTURY Roll Roofing is sold direct from factory to you. Best and cheapest in America. Long guarantee. Freight paid. 14 shipping points. **FREE** Send for samples, catalog and bargain prices. Write today.
CENTURY MFG. CO., 235 Metropolitan Bldg., E. St. Louis, Ill.

Golden Bantam Seed corn, 15c lb. and postage; \$1.65 a pk.
Hathaway Farm, R. 3, Box 82, Ada, Mich.

If you want a catch of Alfalfa, Clover, Timothy use a car of my hardwood shales. George Stevens, Peterborough, Ont., Canada.

Farms and Farm Lands For Sale

Dairy and Lake Farm

Recently owned by REED & KNOWLES,
Michigan's Formost Holstein Breeders.

308 Acres Located in Livingston
County, Half Mile from Howell

40 rods from cement, under construction, farm not subject to taxation for pavement. Practically two farms and two sets of buildings adjacent, but has been used as one farm for the last 15 years. The main buildings on Fair Lawn Farm, are situated on an eminence overlooking the lake which lies between this place and the city, and also overlooking the town and adjoining country. This main house is new having been erected about four years and has all the modern conveniences, including bath tubs, heating system, sewer system, gas lights and a beautiful veranda, 10-feet wide and 22 feet long. In the growing season, this is surrounded by beautiful alfalfa which makes it a most attractive place. The main barn is a basement barn, is modern, and contains cow stalls, a hay rack, and a silo. Attached to this is the wing, 32-feet wide and 72-feet long with 21 ft. posts and a hip-roof. It also has six horse stalls and a harness room. In the first story of this are box stalls for 14 head of cows, used for testing purposes. This is the most modern equipment and type. In the north end of this is the bull stall, 25-feet wide and 10 feet deep and an open yard, 40 feet square. In the second story of this wing are individual calf stalls, mixing floors and everything that pertains to a well-run dairy barn. The third story in this wing is the hay loft covering the entire length and breadth of the building. Over the main part of the building are drive floors and mows, which are today, well-filled with hay. In this barn, and on this farm have been kept seventy-five head of cattle.

In connection with this, there is a silo, 40 feet high, 14 feet in diameter; also a tank and engine room where the milking machine is kept. Here, too, is a heating system of steam heat with boiler attached which makes the office above a very comfortable place to work or live. The water supply for this farm is well provided; a windmill and a never-fail well and a storage tank, a pump, and other small buildings, here, are capacity of practically five hundred barrels. Here, too, is an ice house, garage and other small buildings which are necessary in the conduct of a large and extensive proposition of this kind.

Farm No. 2-100 rods east of the main barn, consists of a house about 42x30, with additions and woodshed, of making eleven rooms, with beautiful maple trees in front and a view across the lake to the fair grounds, factories, and part of the city of Howell. There are very few more desirable homes than are both of these homes just described.

The barn on this farm is 42x60 with silo attached. There is stabling here for ten head of cattle and two horses. The deed covers probably thirty acres of lake, at least 120 rods of lake front and about 160 acres of land under the plow. The rest of this farm is pasture land (mostly flats, all tiled adjoining a large running stream), upon which the big herd of Holstein cattle have been kept.

Milking machine, 20 a. ry. 35 a. alfalfa, 25 a. hay goes with the farm and possession can be had thirty days after buying. This farm is handled by us at such an attractive price, that anyone that could handle a farm of this size, will certainly be interested. In fact it can be bought at less than cost of the buildings alone, and on most liberal terms.

For further information and pictures, write

LOVE-WELL FARM COMPANY

Incorporated

Northville, - Michigan

220 Acres \$8500 with

2 Horses, 40 Cattle, Tools

Equipment worth \$5,000; improved road, mile R. R. station; machine-worked fields, 50-cow brook-watered pasture, 1,000 cords wood, 100,000 ft. timber, lots fruit; 12-room house, running water, 80-ft. basement barn, running water, other buildings; immediate sale including livestock, wagons, machinery, tools, only \$5,500, easy terms. Details page 22 Strout's Catalog Farm Bargains 33 States, copy free. STROUT AGENCY, 814 B. O. Ford Bldg., Detroit.

OWN YOUR OWN FARM

TWO CROP COUNTRY

HOGS-STOCK-NO WINTER HOUSING

FEED CROPS EVERY MONTH

Corn, Tobacco, Cabbages, Early Cucumbers, Sweet and Irish Potatoes, Oranges, Fruits.

SEND FOR ILLUSTRATED BOOK

WHEN TO PLANT AND WHEN TO HARVEST

J. W. Luther, Rep. Robertsdale, Baldwin County, Ala. Asmus & Co. 230 S. Mich. Ave. R. 45, Chicago.

For Sale 80 acres strictly high grade soil.

Fine buildings. 11 head of Holstein Cattle, team of horses, hogs, chickens and all necessary tools and equipment. Will sell at a sacrifice owing to the owners poor health. Write

JOHN CONANT, Grand Haven, Mich.

Buy farms in New York State through the Farm Brokers' Association, Inc., an old established organization which will give you thoroughly reliable information and service. Offices throughout the State. Write the Central Office at Oneida, N. Y. for brief list and state your requirements.

Finest Opportunities for diversified farming. How much land do you want and what terms? Improved or unimproved? RAILROAD FARM BUREAU, San Antonio, Texas.

POULTRY

Snowy White Rocks, dandy layers. Fishel strain. Eggs prepaid, \$1.50-15; \$2.75-30; \$4.50; \$7-100. MRS. EARL DENN OFF, Vanburen, Ohio.

S.C. Brown Leghorns Purebred. Farm range eggs \$1.50 postpaid. 100 express \$3. HARLEY L. FRY, North Adams, Mich.

S. C. W. Orpington and white guinea eggs \$1.45 per 15 postpaid. O. ARNOLD, Coleman, Mich.

S.C. White Leghorn hens. Ferris 204 egg strain, \$4.00, \$5.00 and \$7.50 each. Hatching eggs \$2.00 per 15 prepaid. A. Stegenga, Portland, Mich.

White Leghorns, Brown Leghorns, Ancona chicks \$1.00 per 100. Live arrival guaranteed. Eggs of all varieties. Catalog free. Triangle, Clinton, Mo.

WHITE WYANDOTTES, free range farm flock improved by 16 years careful selection. 15 eggs 2.50, 30 4.50; 50 or more 10 each by mail prepaid. Cockerels 3.50, 2 for \$6. Vern Moore R. 1 Hartford, Mich.

White Wyandottes: Eggs for hatching from selected layers. \$2.50 per 15 prepaid, 1 male 10 females. 60-80. Frank De Long R. 3 Three Rivers, Mich.

White Plymouth Rocks Choice breeding. Eggs \$1.50, \$2.00, \$2.50, \$3.00, \$3.50, \$4.00, \$4.50, \$5.00, \$5.50, \$6.00, \$6.50, \$7.00, \$7.50, \$8.00, \$8.50, \$9.00, \$9.50, \$10.00. Day old chicks, 100, \$2. Richard M. Grotton, Mason, Mich.

W. Wyandotte Eggs Fishel Strain, \$1.50 per 15; \$2.00 per 100, postpaid. CHAS. A. BEATTY, Milford, Mich.

Ten Eggs for \$1.50 from pure Toulouse geese. Parcel post paid. MRS. AMY SOUTHWORTH, Allen, Mich.

PURE PARIS GREEN 39c. per pound; Arsenate of calcium 25c. Arsenate of lead 32c. Bordeaux Mixture 22c. Bordeaux-arsenate 26c. Dry Lime Sulphur 15c. Quality only. Buy it the co-operative way. Special prices on large quantities. Write for complete price list. Reference, any bank.

American Co-operative Association, Dept. 16, Milwaukee, Wis.

ABOUT BEANS.

(Continued from page 726).

is idle to expect relief from the tariff. The Michigan Farm Bureau today has in its control greater possibilities for the maintenance of the state's eminence in beans than Washington. If the organized farm bureaus were to make a determined stand to curb future selling it would do more than anything else to maintain equitable prices for beans. One of the phenomena of governmental price-fixing was that the minimum price had a tendency to become the maximum. So when futures selling pegs the price at some figure which it is always hoped and planned to be below the actual value, the whole power of the trader is to use every resource to deliver at a less price and make the margin of gain at the expense of the producer or consumer. When governmental control was effective future selling ceased. Organized agricultural control can make future selling so hazardous as to be unprofitable.

EXPORT LIVE STOCK TRADE.

FOR a number of years, there has been a good deal of discussion in the live stock press in regard to the establishing of trade relations with the South American countries, particularly as it related to live stock. There were indications of a possible trade of considerable volume developing, and just enough encouragement along to prove an incentive in its further progress. During the past twelve months there have come definite, unmistakable evidences of this development.

As this is written there are embarking for South America, two shipments of purebred beef cattle with a liberal representation of dairy cattle. One is bound for Argentina composed almost if not entirely, of high-class Shorthorns, numbering near seventy-five head. The destination of the other shipment is Uruguay, the second export shipment taken from this country by the same interests. Approximately one hundred and seventy-five head are included in this shipment; the major portion being divided nearly equally between Shorthorns and Herefords. Before sailing, the gentlemen who are responsible for the Uruguay shipment, made it known to official representatives of the live stock interests in this country that they contemplate returning soon again for another selection. The Argentina shipment referred to is so much the largest shipment that has ever been sent to that prosperous cattle country and there is every prospect that later shipments will follow, in early succession, of large numbers.

But that is not all. There is in this country, at the present time, a representative of Brazilian interests, who is in quest of a high-class collection of purebred beef cattle to be used for show purposes in Brazil, the object being to create a demand in that country for American-bred cattle. Still further, there comes from Chile, assurances of definite orders soon to be placed by the cattlemen of that country for purebred beef cattle produced here in the United States.

This is the result of the effort which has been made toward interesting South American cattle growers in the improved types produced here. There are a number of reasons why the South American peoples are inclined to the United States for this class of live stock. In the first place the United States is the only country that can supply high-class, registered, beef cattle in any considerable quantities. Then there is the matter of distance, and still another is the freedom from foot-and-mouth disease in this country, a condition that is not so favorable in the British Isles or on the continent.

It puts the grain in the sack—does not waste it in the stack



Supplied by the best threshing machine manufacturers Demanded by the best farmers and threshermen

All the Grain Is Coming to You

Every kernel of the grain you have raised is yours. Then why let any of it go into the straw stack? You don't have to any more. The Grain-Saving Stacker returns to the separator and into the sack or wagon the grain that is blown to the

The Grain-Saving Stacker Delivers It

stack in the ordinary process. Demand the Grain-Saving Stacker on the machine for your next job. See that above trade-mark (in colors) is on each side. Write to any of the list below for full information about this sterling profit-saver.

LIST OF MANUFACTURERS

United States

Antman & Taylor Machinery Co., Mansfield, Ohio
Avery Company, Peoria, Ill.
A. D. Baker Company, Swanton, O.
Banting Manufacturing Co., Toledo, Ohio
Batavia Machine Co., Batavia, N. Y.
Cape Mfg. Co., Cape Girardeau, Mo.
J. I. Case Threshing Machine Co., Racine, Wis.
Clark Machine Co., St. Johnsville, N. Y.
Ellis Keystone Agricultural Works, Pottstown, Pa.
Emerson-Brantingham Co., Rockford, Ill.
Farmers Independent Thresher Co., Springfield, Ill.
A. B. Farquhar Co., York, Pa.
Ferdinand Machine Works, Ferdinand, Ind.
Frick Company, Waynesboro, Pa.
Harrison Machine Works, Belleville, Ill.

Canada

Huber Manufacturing Co., Marion, Ohio
Illinois Thresher Co., Sycamore, Ill.
Keck-Gonnerman Co., Mt. Vernon, Ind.
Leader Tractor Manufacturing Co., Des Moines, Iowa
Link Mfg. Co., Kansas City, Mo.
Minneapolis Threshing Machine Co., Hopkins, Minn.
Port Huron Engine & Thresher Co., Port Huron, Mich.
The Russell & Co., Massillon, O.
Russell Wind Stacker Co., Indianapolis, Ind.
Sawyer-Massey Co., Ltd. (U. S. Agency), Moline, Ill.
Southwest Mfg. Co., Oklahoma City, Okla.
Swayne, Robinson & Company, Richmond, Ind.
The Westinghouse Company, Schenectady, N. Y.

The Grain-Saving Stacker Originated With the Indiana Manufacturing Company, Indianapolis, Ind., Who Also Originated the Wind Stacker.



Winter Problem solved by the Hive with an Inner Overcoat. Wintered 100% perfect, no loss of bees, winters of 1916-17-18-19-20. The Inner Overcoat did it. Send for free 48 page catalog of bee keepers supplies. BEES WAX AND OLD COMB WANTED A. G. WOODMAN CO., Dept. M. F., Grand Rapids, Michigan

RADIATOR NEVER LEAKS STOPS THE LEAKS

\$1,000,000.00 GUARANTEE Protects You

75c worth of this phenomenal liquid poured into water in radiator will instantly cure the meanest leak anywhere in cooling system, often better than soldering. Guaranteed satisfactory or money refunded. Always carry a can for emergency. 75c at all dealers or sent direct.

BUFFALO SPECIALTY CO.
The 1000 VENER People
306 Ellicott St., Buffalo, N. Y.

Stop Losing Calves

Treat Your Herd the Roberts Way
Easy to Apply—Sure Results
Successful for 30 Years
YOU CAN

Stamp Abortion Out Keep It Out

ASK FOR "The Cattle Specialist"
Sent free on request. Answers every question pertaining to Abortion in Cows. Tells how to treat your own herd at small expense. Write
DR. DAVID ROBERTS
VETERINARY CO., Inc.
640 Grand Ave., Waukegan, Wis.

SPECIAL NOTICE

Ship your Eggs, Live and Dressed Poultry, Dressed Calves, Pork, Lambs, & etc. to

DENNIS & HERRING
NEW YORK CITY, N. Y.

Bonded Commission Merchants. This old reliable firm has two of the best located houses in N. Y. City for securing Highest Prices and their salesmen are

EXPERIENCED EXPERTS

TRY THEM, RESULTS WILL PLEASE YOU

For Best Net Results

Ship to
CULOTTA & JULL
Detroit, Mich.

"Enough Said!"

Use

Swift-HAY Service

AT CHICAGO

You can BUY all types of FEEDING HAY from and SHIP your surplus to
Swift-HAYnes Co.,
BOARD OF TRADE, CHICAGO

Mr. POULTRY FARMER:

We make a specialty of White Henery Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henery Whites—We remit same day shipments arrive. Ship Often—Ship by Express

GEO. R. ELDRIDGE CO.

494-15th Street, Detroit, Mich.
Remember! We guarantee you satisfaction with every shipment

RESET DOOR KNOBS-STOP LEAKS WITH SMOOTH-ON IRON CEMENT, No. 1

Dozens of household and motor repairs easily made by anyone at small cost. Save dollars—re the free SMOOTH-ON Repair Book "M" tells how.
6 oz. 30c 1 lb. 50c
Easy to apply as putty—lasts forever. By mail add 1c for postage.
SMOOTH-ON MFG CO.
221 N. Jefferson St., Chicago, Ill.
SEND FOR FREE BOOK

HAY

Ship to The Old Reliable House
Daniel McCaffey's Sons,
623-625 Wabash Bldg., Pittsburg, Pa.

Farmers, buy the Wade Portable Gasoline Drag Saw and have one man do the work of six.
S. H. ROASTLE CO., Constantine, Mich.

The Fisk ideal: "To be the best concern in the world to work for—and the squarest concern in existence to do business with."

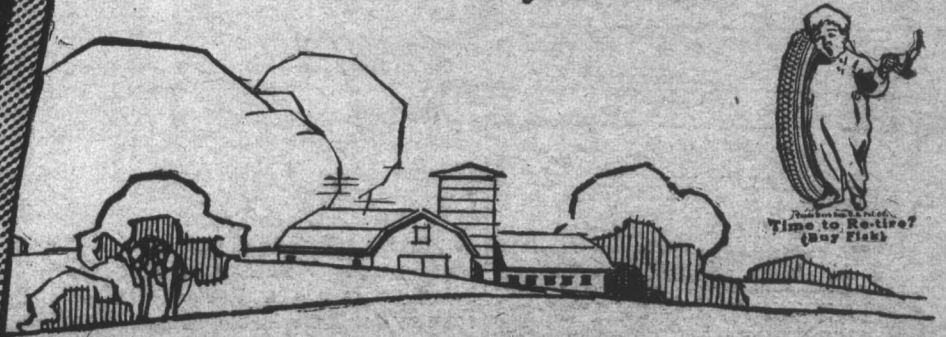
There's a substantial saving to be gained

by the use of Fisk Cords for *any* size car.

The saving comes from the added tire mileage; the added protection given your car by the resiliency of the Fisk Cord construction; by the Fisk deeply-cut tread, and the generous Fisk oversize.

Any dealer who has been selling Fisk Cords will tell you their quality and endurance is extraordinary. Every road test, every comparative test, establishes their supremacy.

*Next Time—BUY FISK
from your dealer*



FISK CORD TIRES