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Co-Operative Land Clearing Associations

By I. B. McMURTRY

MICHIGAN farmers stand well to the front in the successful organization of various co-operative enterprises. Michigan boasts the oldest cow-testing association in America. Some of the most successful fruit and produce exchanges in the country are now operating on Michigan soil and their trade-mark brands are recognized in all the leading markets. They stand for an honest pack and quality par excellence.

In some lines, however, Michigan farmers are not fully aware of the advantages of co-operative work. Our friends over in Wisconsin have taken the lead in the matter of working together to clean stump land.

Michigan today has some 5,000,000 acres of cut-over lands. Of that about 3,000,000 acres are fair or better farm land. As nearly as I can get at the figures, about 30,000 acres are being cleared annually. At that rate it will be 100 years before the last acres of stumps are uprooted. Any means that will aid the farmers to speed up the clearing of the last field and building the last stump bonfire should be welcomed with outstretched arms.

Michigan will not come into her own as a farming state until the vast areas of cut-over lands in the newer portions are prepared for the riding plow, the potato digger, the binder and the tractor.

While some 30,000 acres are being cleared annually most of the work is done with the expenditure of too much man power. The cost is too great. How can the cost be reduced?

Let me tell you what Wisconsin is doing. From May 8 to June 17 last spring, a "Land Clearing Special" train was run by the Wisconsin Agricultural College through much of the upper portion of the state. The purpose of the work was to show just

what stump pullers, stump pilers and dynamite would do when used together, and to encourage greater co-operative activity in clearing lands. It was a co-operative venture managed by the college and aided by the railroads over whose lines it went, four leading stump puller and piler makers and one of the big explosive manufacturers. The demonstrations were attended by very large and enthusiastic crowds. There were some 8,000 actual owners of stump land present at the demonstrations. Many farmers drove twenty-five miles by team and as high as 90 by auto. Several walked 17 to 25 miles to visit the work.

"Others than farmers," said Director Livingston, "were greatly interested in this work. Commercial clubs sent delegations in from parts of Wisconsin, Minnesota and Michigan to report on the work. Real estate men were very much interested and came from widely differing parts to view demonstrations. Officials of lumber and logging companies who have great

areas of cut-over lands were present. Railroads sent their agents to study the method of operating with a view to running one over their own lines."

One of the most striking features of the work was the performance of a power stump piler. Two men and a team could pile stumps and burn them as fast as four teams could drag them in.

It was found that dynamite could generally be used to great advantage in splitting the big stumps before they were pulled.

These demonstrations showed very clearly the great advantage to be gained by farmers working together in clearing land. It is a big job—one requiring lots of power, in the form of pullers, piler, horses and dynamite. No farmer, single-handed, can do the work most economically. If one thing more than another was driven home by these co-operative demonstrations, it was the idea that economical land clearing can be done only by the use of the maximum of machine, explosive

and horse power for a given amount of man power. In short, the heavy pullers and pilers, dynamite, team and man power must be so arranged that each will do its part with the smallest possible waste of energy.

Wisconsin farmers are banding together in groups for the buying of machines, etc., and will then work together to handle the work. For example, say 12 farmers who have more or less stump land go together to form a co-operative land clearing association. They may or may not incorporate. They will determine just what machines they will buy. The list would probably run, two good stump pullers, one piler and a ton or more of dynamite purchased for the first year's work.

Suppose that each man has five to ten acres of stumps to be removed per year for several years. The 12 men work together—one as the manager or boss, one as handler of the dynamite, and so on, each man having his work, at which he becomes something of an expert.

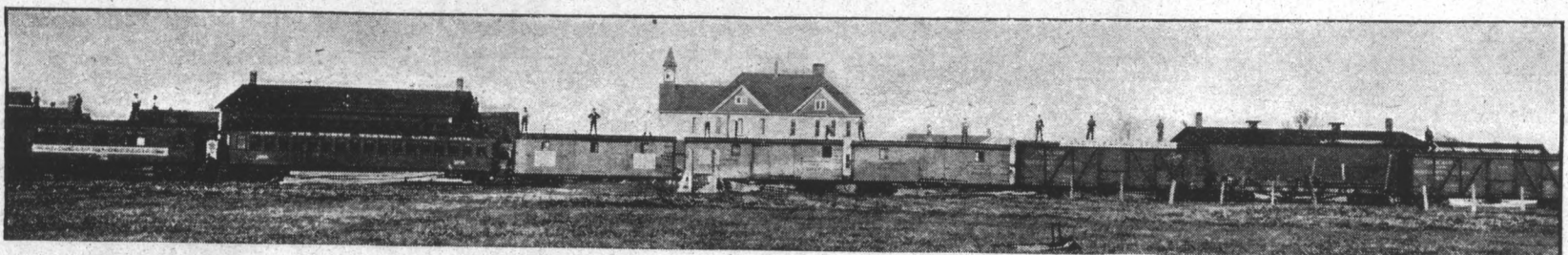
The book-keeping would be comparatively simple, but it should be done with accuracy and every member should be given credit at so much per hour for all work performed by himself, team, etc.

It would require only two or three days for the association to clear up each of the ten acre fields. What a wonderful difference would come over each of these 12 farms within a few years! How much greater the incentive to do a difficult task when one has improved equipment and skilled help for its accomplishment! The increased yields, to say nothing of the increase in the value of the land, would very soon pay for all of the equipment and work.

(Continued on page 345).



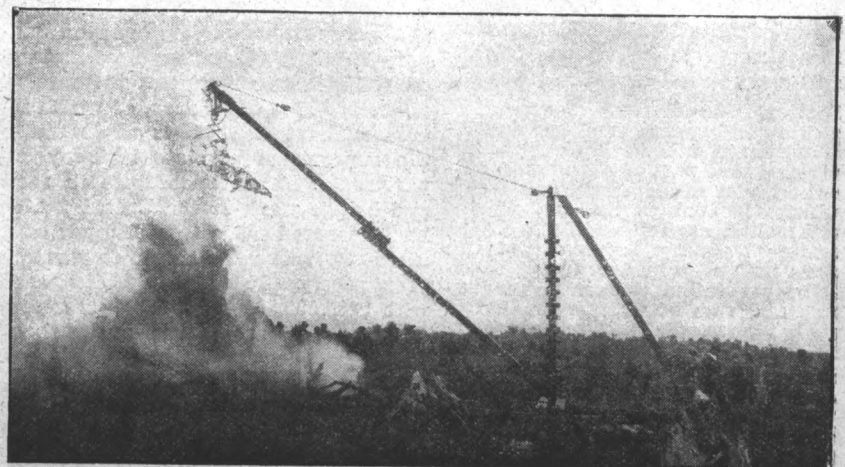
A Group of Interested Farmers Discussing Effect of Blasting Operations.



Land Clearing Demonstration Train, Including Accommodations for the Demonstrators as well as Cars for the Special Equipment Required.



Big Pine Stump Split with Dynamite, One-half of which has been Pulled.



Piling and Burning at the same time Gives Best and Quickest Results.

The Michigan Farmer

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DETROIT, OCTOBER 14, 1916

CURRENT COMMENT.

At the election to be held on Tuesday, November 7, there will be submitted to the electors of the state four proposed amendments to the state constitution. In accordance with our usual custom, we shall publish the text of these proposed amendments in our columns prior to the date of the election, together with an explanation of their import and the results which would be likely to follow their adoption by the electors of the state.

Two of these constitutional amendments which have undoubtedly aroused great interest among all classes of people of the state are the two amendments relating to the manufacture and sale of intoxicating liquors. One of these amendments generally referred to as the "dry" amendment seeks to add a new section to Article 16 of the constitution to be known as Section 11 and to read as follows:

"Section 11. The manufacture, sale, keeping for sale, giving away, bartering or furnishing of any vinous, malt, brewed, fermented, spirituous or intoxicating liquors, except for medicinal, mechanical, chemical, scientific or sacramental purposes shall be after April 30, 1918, prohibited in the state forever. The legislature shall by law provide regulations for the sale of such liquors for medicinal, mechanical, chemical, scientific and sacramental purposes."

The effect of this proposed amendment if adopted will be to prohibit in this state the manufacture and sale of intoxicating liquors, except for the purposes mentioned in the amendment. The intent and practical effect of this proposed amendment are plain, and will be fully understood by every voter.

The other proposed amendment, which shares with the one already noted in the matter of public interest, is called by its sponsors the "Home Rule" amendment, but among well informed people is more ordinarily designated as the "wet" amendment. This proposed amendment seeks to amend Article 8 of the constitution by adding a new section thereto to be known as Section 30 and to read as follows:

"Section 30. Every incorporated city, every incorporated village and every organized township (meaning thereby all that part of a township outside the limits of an incorporated city or village located partly or wholly therein) shall each have the right to determine by a majority vote of the electors thereof, whether or not there shall be prohibited therein the manufacture and sale of malt, brewed, fermented, vinous, distilled or intoxicating liquors.

Appropriate legislation shall be enacted to enforce and make effective the provisions of this section and, until such legislation is enacted, existing local option and regulatory laws on this subject shall continue in force; but no existing law inconsistent with

the provisions of this section shall continue in force after January 1, 1919."

The effect of this proposed amendment if adopted will be to provide that every incorporated city and village and organized township shall each have the right to determine whether or not there shall be prohibited therein the manufacture and sale of intoxicating liquors after enabling legislation is enacted by the legislature in conformity with the amendment. In addition to this provision, the last clause of the amendment would in effect repeal all existing laws inconsistent with the provisions of this section on January 1, 1919. The plain meaning of this provision would seem to be that the present local option law would be automatically repealed on the first of January, 1919, after which liquors could be sold in present "dry" territory under the same regulatory laws which prevail in other sections of the state, and that in order to exclude the sale of liquor from such territory, it would be necessary to raise the issue and secure a majority vote against permitting such sale in every city, village and township within that territory.

While these two proposed amendments above mentioned are exactly opposite in their intent and proposed effect, inasmuch as they seek to amend two separate articles of the constitution there is a possibility that both might be adopted at the coming election. It is, of course, impossible to predict with accuracy how the courts might construe these two conflicting provisions in such an emergency. The apparent result would seem to be that the whole state would be "dry" from April 30, 1918, to January 1, 1919, after which the situation would appear extremely uncertain to the most studious layman. This contingency is, however, unlikely if the rank and file of voters are fully informed upon the import of the two amendments.

This situation is a natural result of the opportunity afforded to permit the submission of constitutional amendments by initiative. In this case two separate amendments have been proposed on the same general issue, the one seeking to settle the liquor question by prohibition in Michigan, the other seeking under cover of the term "Home Rule" to enable the practical nullification of the local option vote in present dry territory by permitting the sale of liquor in a lesser municipality within a county upon a majority vote of its citizens.

In thus commenting upon these important constitutional amendments we have sought only to clarify the issues involved rather than to influence the action of any voter. The two other proposed amendments will be commented upon in a future issue.

The extent of road improvement work in the United States is hardly appreciated by the average citizen. Some statistics recently released by the office of Public Roads and Rural Engineering of the United States Department of Agriculture are interesting in this connection.

The total length of public roads outside of towns and cities is about 2,452,000 miles, of which 277,000 miles, or 11.3 per cent, were improved on January 1, 1915. The mileage of improved roads has increased at the rate of about 16,000 miles a year, of which increase about one-half is made under the supervision of state highway departments. The expenditure in road and bridge work in the United States has increased more than 250 per cent since 1904, in which year it was approximately \$80,000,000 as compared with \$282,000,000 in 1915. This expenditure represented an average of about \$28 per mile of rural roads in 1904 and \$109 per mile in 1915.

The increased traffic on the public roads of the country which has been responsible for the increase in good roads sentiment is very marked. It is

estimated that there is now approximately one automobile in use for each mile of road in the country, and that this traffic is greater than traffic of all sorts twelve years ago.

The Milk Producers' Meeting.

A call for the first annual meeting of the Michigan Milk Producers' Association to be held at the Agricultural Building, M. A. C., East Lansing, on Tuesday, October 17, at 10:30 a. m., appears in another column of this issue. The work which has been accomplished through this organization since its inception is sufficient to enlist the sympathy and co-operation of the dairymen of all sections of the state.

In many sections of the state local dairymen's organizations have been formed and will send delegates to this meeting. Wherever such organizations have not been formed prominent dairymen would do well to attend this meeting with a view of familiarizing themselves with the objects and aims as well as the work already actually accomplished by this organization, working in conjunction with local milk producers organizations throughout the state. It is important that a representative gathering of the dairymen from all sections of the state characterize this meeting, to the end that the future campaign of the state organization of milk producers may have behind it the solid backing of Michigan dairymen.

County Fairs.

Reports from various counties in which county and district fairs have been held this year indicate that the attendance has been good and the character of the exhibits above the average in most cases. An increased interest in the county agricultural fair is a matter for congratulation to the farmers of Michigan. No man can attend an agricultural exhibit of any kind without broadening his viewpoint materially and in most cases he will pick up ideas which will be of value to him in his succeeding season's campaign.

We regret that space is not available for the publication of detailed reports of each and every county fair held in the state, to the end that interest in these events might be further stimulated, but since interest in each of these fairs is more or less local in nature, this course is impractical. We cannot, however, let the season pass without congratulating the officers and directors of each of these successful fair associations upon the success of their season's activities and bespeaking for them the loyal aid and co-operation of the farmers in their respective localities in their future efforts.

The Consumer's Dollar.

It has been many years since the consumer's dollar would purchase so little in the way of foodstuffs as at the present time. And with prices for all foodstuffs high, the percentage of that dollar which sticks in the trade channels between consumers and farmers is likely to increase, unless conservative marketing is practiced by producers all along the line. Michigan's two great staple cash crops, beans and potatoes, are away below normal in yield, but will be fully up to normal income production for the farmers of the state if the growers secure their fair percentage of the consumer's dollar. This they can accomplish by withholding their products from the market whenever flush shipments force prices down to the advantage of speculators. The selling end of the farmer's business is always important, but it is doubly important under present conditions.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Developments in the great struggle in Europe were brought near to the people of the United States in the past few days by the

activity of a German submarine or submarines off Nantucket Point, R. I. Four British ships and two neutrals were sunk on October 8. There was only one passenger boat among the victims. Previous to the attacks a submarine slipped into Newport harbor Sunday morning and communicated with Admiral Knight, commanding the United States naval station at that point. The craft left three hours later, shortly after which the first boats were attacked. So far as reported, no lives were lost in the destruction of the vessels.—The Germans have recaptured Kronstadt in the southwestern part of Transylvania, and it is reported that the Roumanians are falling back all along this line.—Nothing of importance is reported farther to the north on the Russian front. To the south Russian troops are being moved into southeastern Roumania to assist the natives in driving out the Teutonic allies from the province of Dobrudja.—Armies in the Causasus region have been active the past week but no changes of front are reported. It is declared through Petrograd that large numbers of Turkish troops are deserting their military leaders.—The Serbians on the Macedonian front are fighting hard to gain commanding positions outside of Monastir. They are gradually closing in upon that important railway center.—The Anglo-French attack at Somme on the seventh netted the Allies an advance of 600 to 1,000 yards which they were able to hold. As a result of the repulse of a new effort on the following day by the Allies, there has been no additional changes of front since the important drive record last week. There is nothing said of activity in the Italian war zone.

National.

The winning teams in the American and National baseball leagues were the Boston Red Sox and the Brooklyn Dodgers respectively. In the opening game of the world series the Boston team won by a score of 6-5 before an audience of 40,000 fans.

In the remarkable series of evangelistic services being held in the large tabernacle in Detroit under the leadership of the famous evangelist, "Billy" Sunday, over 9,000 converts are reported for the first four weeks' services.

United States District Attorney Kinane, for eastern Michigan, has secured authority from the federal government to conduct a supervision of the November election in Detroit. Irregularities in counting the vote at the recent primaries held in Michigan's metropolis is undoubtedly responsible for this movement by the federal government.

The publishers of Ionia county met recently to discuss methods of fortifying themselves against the greatly increased cost of print paper. Concerted action has also been taken by publishers in other counties of the state, and it is predicted that within a year not a weekly local paper printed in Michigan will be sold for less than \$1.50 a year. To continue selling subscriptions at the old rates would force many of these local papers out of business. The following Michigan publishers have already raised their subscription rates: Zeeland Record; Boyne City Citizen; Belding Banner; Casnovia Herald; Freeport Herald; Portland Review; Benton Harbor News-Palladium; Arenac County Independent; Hastings Banner; Hastings Journal-Herald; Middleville Sun; Nashville News; Woodland News; Charlotte Tribune; Otisville Star; Buckley Enterprise; Marion Dispatch; Saline Observer; Charlotte Republican; Lake Odessa Wave-Times; Provo-Courier; Leslie Local-Republican; Lawrence Times. These have cut down the size: Coopersville Sun; Crystal Mail; Sterling Gazette; Middleton Record; Hastings Banner; Manistee News-Advocate; Marquette Journal; Soo News. Advertising prices have been advanced by the Three Rivers Commercial and the Belding News. The following have merged to reduce costs: Owosso Argus and Owosso Press-American; St. Joseph Press and St. Joseph Herald; Muskegon Chronicle and Muskegon Morning News; Kalamazoo Gazette and Kalamazoo Telegraph; Battle Creek Moon and Battle Creek News.

By proclamation President Wilson has set aside October 21 and 22 as Armenian and Syrian Relief Days, upon which dates the people of the United States are requested to make such contributions as they feel disposed for the aid of these stricken people. Of the 2,000,000 Armenians, 500,000 have already perished, and it is said that the Syrians in the Lebanon region have suffered to even a greater extent than have the Armenians. Charles R. Crane, 70 Fifth Avenue, New York City, is treasurer of the American Committee on Armenian and Syrian Relief.

It has been calculated from the returns of the last official census of the United States that the average gross income of those operating farms in this country is a little less than \$700 per annum. This can in no way be thought of as profit if we consider, for a moment, the enormous expenditure of capital and labor that is lavished upon the farms of the United States.

The size of the average farm in this country was, in 1910, about 138 acres. The average value of this land per farm as given in the census of that year was \$2,070. The value of all farm property on the average farm was, including land and buildings, \$6,444. Interest on the value of the land, figured at the low rate of five per cent amounts to \$103.50 for the year. Interest on the value of the equipment of the farm will have to be figured at a higher rate, for it would be necessary to pay more for the use of money when the personal property was offered for security. Figuring this at seven per cent, we find that it amounts to \$306.18. Thus the interest on the capital invested in the average farm alone amounts to \$409.68 which, taken from the average gross income, leaves about \$290 to pay for the labor, to keep in repair the buildings and fences, and to replace or make good the wear and tear on the equipment. What is there of profit to be found in the pursuit of an industry that offers such inducements?

But the fact remains that many farmers are making, not only a good living, but a profit as well, and at the same time dwelling in the most healthful surroundings and rearing a family amid an environment, the value of which cannot be figured in dollars and cents. These figures are not accurate. They are based upon the replies given to the man taking the census, on his visits to the farmer or to the farmer's wife, at a time when they are unable to answer with any degree of accuracy the questions asked. I will venture the assertion that 95 per cent of the farmers throughout the country do not know what their income was last year. They do not know how many eggs they sold nor how many eggs the hens laid in the last year. Most of the answers are pure guesses.

The Importance of Good Management.

While it is a fact that the figures above quoted are not high enough for the returns of the average farm, it is also true that these same returns were not so large as they should have been. The reason for this, or at least one of the most potent reasons that the returns are not much higher and better, is the sort of management, or should I say the lack of management, on the average farm. There may be, at times, a lack of income on account of the drouth, of frost, or of some other uncontrollable agent which causes great reduction in the income. The fact stands, nevertheless, that the most potent cause of the smallness of the income is the lack of the skillful handling of the problems with which the average farmer is continually confronted.

Let us consider one specific incident. The farmers in one Michigan community had been for years trying to get a good catch of alfalfa. They had spent thousands of dollars and years of time only to get a thin stand or no catch at all, the thin stand soon succumbing to the ravages of blue grass. Then along came a man from the agricultural college. He tested the soil for acids. He said, "Your soil is acid. Alfalfa will not thrive until you have brought this soil to a neutral condition." And behold, those who followed his advice and corrected this unfavorable soil condition by an application of lime or marl now have a fine stand of this great forage crop.

Then, too, the farmer does not get as large a return from his farm as he should because he does not know how to market his produce. While farmers are selling tomatoes to the canning factories for \$10 per ton, within a

Training Farm Managers

By J. H. HULETT

thousand miles of the spot grocers are selling the same grade of product to the consumer for 20 cents per pound. It is time that the farmer looked about to see what has given the added value to the crop which he has produced. These figures may seem entirely out of proportion, and they are; but the foregoing is a statement of cold facts. The tomatoes were sold from a store in Lumberton, New Mexico, and the canning factory was located at Marion, Indiana, the transactions taking place on the same day of the same month and year. There is something wrong in the management when the products gain so much on being moved so short a distance. The crop itself may be large enough, the quality may be of the best, but the returns in the shape of income are not what they should be.

The Advantage in Good Draining.

I said that the crop may be large enough. But the average yield per acre, of any crop for any considerable extent of territory, compared with the yield produced by any one energetic farmer who understands his business will soon convince any unprejudiced observer that the yield is not so good as it should be; nor so large as it can be made if good management is used in its production. More and more it is becoming evident that the man who would go onto a farm and wring from the soil the return justified by his ex-

the open country? Just three. The balance were going into other callings. They were to become engineers, professors, builders, anything but farmers because in the rural schools they had been educated away from the farm.

And the schools are not alone to blame that they take the best blood found on the farm and train it away into other channels. They are not the only cause for the existing conditions. The sentiment found on the farm towards its own environment is far more potent in getting the boys and girls away to the other occupations. The farmer himself, realizes that he is not getting the return he should from the farm and this makes him discontented with his surroundings and he longs to get away, at least that his children may get away where they can enjoy the privileges which he has been denied for generations.

Too long, the schools, and more especially the rural schools, have been conducted with the ideal constantly held up before them that they must fit the boys and girls for higher institutions of learning instead of training these boys and girls for real life, or what would be still better, becoming a part of a real life wherein each took some real vital part and each was necessary for the well-being of all. Not much of a real life does a boy or a girl

can be grown. And there are few places where it cannot be grown. There should be milk from the school dairy, and eggs and honey and all the little delicacies which are so pleasing to the palate; all these should be produced on the school farm and used at the school. In short, the school should demonstrate what the farmer should eat as well as what he should grow on his farm.

The rural teacher should be a trained farmer. He is the most important element of the school. His is the responsibility. He should have a house at the school and live there. He will make the school a success or a failure. So, let him live beside his work. He should have a training as a practical farmer but it is not essential that he be a kid-gloved professor of agriculture.

The rural school should be in session throughout the whole year. Nowhere outside the school can we find any profession or vocation or calling or occupation which has some set time when it is forced to take a vacation. Schools close in June and open in September because it is a tradition that this is the proper time for such proceedings. Of all the idiotic traditions handed down from generation to generation, this is the extreme limit. The individual may be in need of a vacation but not because it is June nor because it is September. Medicine, law, commerce, mining, manufacturing, farming, none of them takes an enforced vacation at certain stated periods. There is no just reason why the school should be an exception to this general rule. One can readily see that there are many reasons why the farm should be continued throughout the whole year. The rural school should go on in like manner with the farm.

THE DITCHING MACHINE.

I would like to do some tile draining and would like some information about it. Can tile be laid uniform better and cheaper with machine than by hand? They charge about 30 to 35 cents per rod here according to depth. Soil is clay. I would like to tile drain my orchard. Will roots of trees clog tile?

Bay Co.

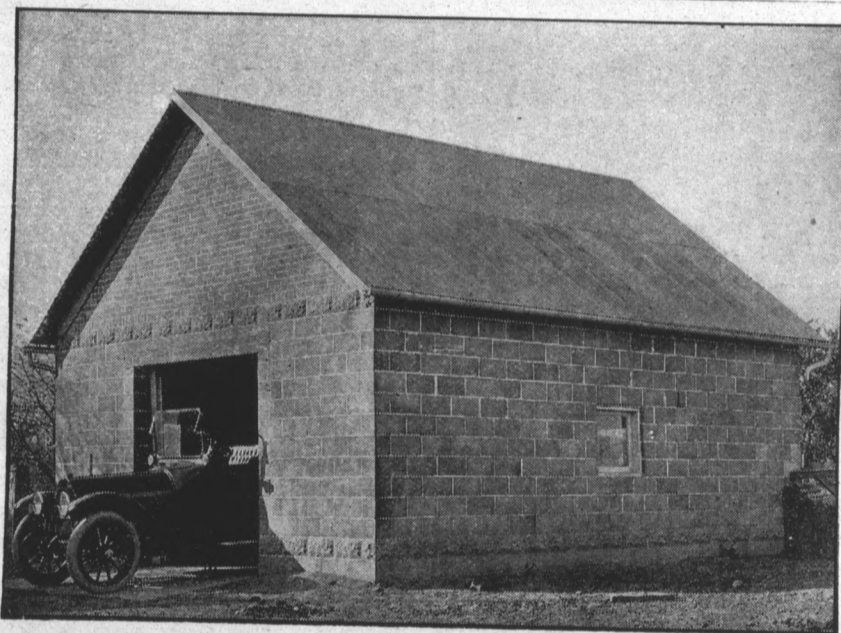
C. K.

I just recently saw a big power ditching machine in operation in Isabella county. It dug the ditch just about as fast as one man could nicely place the tile. One man operated the machine and kept the grade. Another laid the tile. That is the way to ditch. It is better than ditching by hand. I saw one place where a ditching machine had operated right through a swamp and there was plenty of logs, etc., in the way. Some of them had to be cut off, of course, and once in a while a stone is in the way. These must be removed. But they must be removed when ditching by hand.

These machines have caterpillar wheels and can be operated in wet ground, or almost anywhere one can ditch by hand. It is a wonderful machine. To think that I tilled my whole farm by hand, in the mud day after day, and now we have a machine that will do this work so successfully, makes me almost wish we had the work to do over again. I would recommend that you use a ditching machine. Don't try to do it by hand.

COLON C. LILLIE.

The success with tile drains in an orchard seems to depend upon soil conditions. In cases where there is a hardpan below the subsoil and the tile is laid below this, tile drains have been in operation through orchards for twenty years without any interference with the tile. In other places where the roots can penetrate the soil easily they have been very troublesome. Some orchardists recommend wrapping the joints of tile with tar paper where tile drainage is necessary in an orchard. Natural drainage is much better than artificial drainage for orchard sites.—Eds.



The Farmer's Auto Should be Kept in a Detached Garage, Preferably of a Fire Resisting Type.

penditure of labor and capital invested, must be a man trained for this special calling. That just anyone can attain real success in farming is one of the greatest mistakes which the people of this country have ever made.

A careful perusal of the reports of the investigations into the conditions existing in our rural schools will convince an unprejudiced mind what some of the reasons are that the farms are not producing more crops; why the farmers are not able to tell how many bushels of grain they raised last year; why they are not studying the methods of better marketing of their crops. Therein the careful observer will note many reasons why farmers are not managing their farms to their own betterment, and to the advantage of their respective communities.

Not very long ago I heard a professor of agriculture in one of our leading colleges in this line, tell of this incident. He was chosen to deliver the commencement address to the graduating class of a sister college. He asked, for his own information, how many of this class of nearly two hundred students had come from the open country. About all of them had, or to be more exact, about 96 per cent of them had come from the farms, or from communities closely connected with farms. How many were going back to

get out of finding the least common multiple of five or six numbers, each composed of six or eight figures. Nor do they find much of the real life in reducing great, long fractions to their lowest terms.

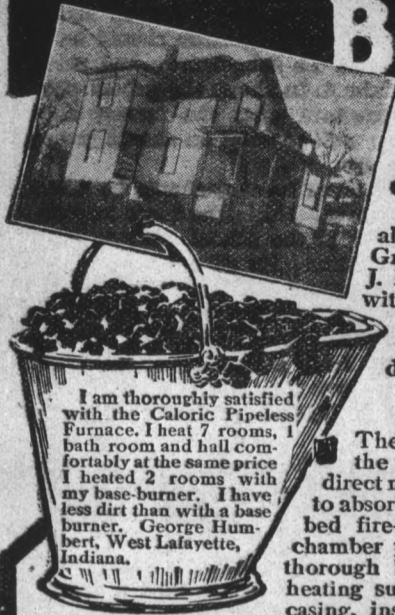
A Better Rural School Training.

Not long ago I heard this definition for education: A consciousness of power. I think it the very best definition I have ever heard for that word. If we really educate the boy and girl in the rural school, we will give to them the consciousness of the power, we will make them conscious of the qualities inherent in them. One power that the rural pupil has is to grow crops that pay. He can do it, but at the present time he is not trained to do it in the rural school.

The time is coming, I may never see it, nor you, but I shall do all in my power to hasten the day when every rural school will have a farm of its own. When that farm will be cultivated intelligently. When the proceeds of that farm will be used towards the support of its particular school.

There should be served at every rural school a mid-day meal cooked at the school and eaten by the pupils and the teachers. On the table should be vegetables from the school garden, fruits from the school orchard, provided the school is situated where fruit

Less Coal Than One Base Burner



The testimonial of Mr. Humbert is NOT an exception. This letter is one of hundreds filed in our office. C. F. Hall, Henderson, Ky., heated 7 rooms all winter for \$18.00. L. M. Sagendorf, Greenville, Mich., used only 5 tons of coal. J. M. Pate, Rising Sun, Ind., heated 7 rooms with 175 bushels of coal.

We can quote any number of these letters telling of comfort, convenience and wonderful fuel economy. You can

Save 35% of Your Fuel

There are three reasons for this big saving. 1st, the warm air reaches your rooms by nature's direct method of circulation and there are no pipes to absorb or resist the heat. 2nd, our double ribbed fire-pot and specially patented combustion chamber produce perfect combustion thus insuring thorough burning of the fuel and a much greater heating surface. 3rd, our specially patented triple casing, insulated with air spaces, prevents any heat from radiating into the basement. This is the only successful patented one-register furnace and no other furnace can claim these three big features.



The Original Patented Pipeless Furnace

Burns coal, coke or wood, and you save money whatever you use. It costs less than any other furnace because you do not have to pay for a lot of pipes.

Install in any house new or old. Well adapted to old houses because you don't have to cut a lot of holes for pipes and flues. Just one hole for the register. It always gives full satisfaction.

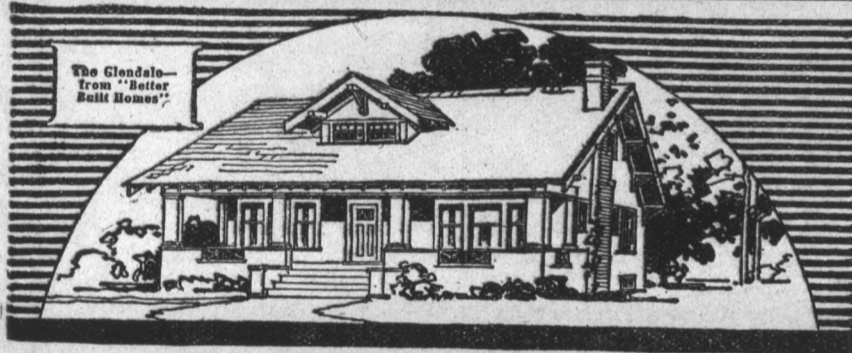
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Farm Notes

Early Hog Pasture.

I have a field of six acres of oat stubble, land quite rolling, with some hard clay spots, I wish to use as a hog pasture. What should I plant it to for an early pasture and when should the planting be done, and how much seed per acre?

Berrien Co.

J. C.

Sown earlier in the season rye and vetch would make the best early hog pasture, but would not last through the summer. Probably peas, oats and rape would make the best spring sown combination if the whole field is to be sown to the same crop. In case this combination is used sow about one and a half bushels per acre of each of the grains and about five pounds of dwarf Essex rape seed per acre. Soy beans are used with good satisfaction for this purpose in some sections. If the best permanent results are desired the field should be prepared and seeded to alfalfa, which is the best available forage plant for hog pasture. Until this can be done better results will be secured by dividing the field and sowing it to a succession of crops, using rye on the portion first pastured, peas on the next section and rape on the third. In this case more peas should be sown per acre. The section sown to rye could then be seeded for pasture the following spring.

LILLIE FARMSTEAD NOTES.

Frost killed the leaves on the sweet corn on the night of September 25. One field was sufficiently mature so we could pick what ears there were and sell them to the canning factory. The other field was not mature enough and it can not now develop without any live leaves, so this must all go into the silo. The field harvested yielded about one-fourth of a crop, only 22 tons on 23 acres. I will be glad when this year is over with, and I will be pleased when those sweet corn stalks are in the silo and the swamp of weeds plowed down out of sight. This field is one of the most fertile on the farm, good enough under good conditions to produce 100 bushels of corn per acre. A good crop of sweet corn is about four tons per acre and we got this year about one ton. Well, the only thing to do is to forget it and try again next year. If we only had a good growth of stalks it would not be so bad but now I am afraid we will be short of silage. But we will have to scrimp the cows a little on silage and feed more hay. We have plenty of hay. Some years it is the other way. Short of hay and long on silage.

We have, however, several things to be thankful for, even during this abnormal year. The best third cutting of alfalfa we ever had, and we got it in the barn in prime condition. A very observing neighbor says it is the nicest alfalfa hay he ever saw. It is indeed prime hay. The cows eat every bit of it clean. They don't leave even a small portion. Again, we have the best fall pasture I ever saw. Nothing like it so far as I can recollect. There is plenty of feed to last the young stock and sheep until snow comes. Besides, the field of rape, ten acres, is so far ahead of what few hogs we have left, (I have sold the most of the spring litter at 9 1/2c), and our few lambs, that we will turn the cows in and save a little silage. Again, we have the best 60 acres of new seeding clover that I think we ever had. Again we have 60 acres of new sown wheat that looks the best this second day of October that we ever had wheat look at this time of year. But I can't brag any more. The other crops this year were a failure, except, of course, the hay, which was the best ever.

Our potatoes which were planted in July are still green and growing. The frost did not even touch them. We will have potatoes yet.

The Price of Sugar vs. the Price of Beets.

There is much complaint in the beet sections of the state over the fact that the factories will make good money in spite of a poor crop of beets, while the farmer loses. Sugar is high in price but beets are the same old price and a poor crop. A mighty poor crop in many sections. On most crops, if the yield is poor, the price is high, and this helps out. Like the bean crop and the potato crop, this year. Both crops average very poor but the price is high and it helps out. But on a contract crop, like beets, the farmer simply gets it in the neck good and plenty, while the factory makes a good profit from little work. The same is true of canning factory crops. The price of canned goods is much better this year than it was last, yet the price to the farmer is the same old price, based on normal market conditions. It will be hard work to get farmers to grow beets and canning factory crops next year, because the farmer must take all the risk. Factory men ought to share this prosperity with the farmer, so the farmer thinks, and is this not right? Why should not the price of these crops be based on the market price of the goods? If sugar is high, then pay more for the beets, giving the farmer a fair chance. If canned goods are high, pay the farmer accordingly. And if both these products are low, pay the farmer accordingly. Why is this not right? What the factory man needs is the co-operation of the farmer. That is what makes his factory a success. I was told that one sugar company had filed several hundred chattel mortgages just lately because the crop of beets will not pay for the seed and labor to grow them. The farmer therefore has to mortgage his next year's crop owing to a poor crop, while the factory makes as much, possibly, as ever, because the price of sugar is sky high. Some day the farmer will take matters into their own hands, operate their own sugar factories and canneries, and be able to get more for the crops when the market is high and the crop poor. You smile, but they will do this some day, if the factory does not do the fair thing. The farmers who grow the beets for a factory, if they would unite and stand together, could own their own factory and make their own sugar. The combined wealth of the farmers who grow the beets is ample guarantee for this. All it wants is to have the farmers have faith enough in themselves to do it.

I heard one of the most prominent beet sugar men in the state say recently if he was to build a sugar factory now he would sell the stock to the farmers who would grow the beets so as to get the co-operation of the farmers. Their big profits would go to the grower in a poor year and help compensate them for a bad crop.

Farmers could own and operate their own canning factories also, and keep the profits themselves. The combined wealth of any community of farmers could easily finance a factory. They are entitled to sufficient credit if they want it. All they have to do is to stand together. There are plenty of farmers now of sufficient business capacity to handle such projects if their neighbors would all back them in a business-like way. The time is getting ripe in this country for such work. Let large business share the profits with the farmer, the man who does the work and takes all the risks. The laboring man is organized and is compelling the capitalist to share his profits with him. Why not? This can all be brought about without business revolution. Let the factory begin now to take the farmer into the business with him. Get his co-operation. It will pay.

COLON C. LILLIE.

"This is the first time we have ever been sold out in September. I believe it pays to advertise in the Michigan Farmer. We have got good prices for all our sheep."—M. F. Ganssley, Lennon, Mich.

TURNING UNDER ORGANIC MATTER.

I was very much interested in the article under the head of "Humus and Soil Fertility," by I. H. W., of Branch county, published in the Michigan Farmer, September 23, and also the one by H. W. Hulbert, on "Fall Plowing," published in the issue of September 30. Both articles were correct and to the point.

Having made the constituents and requirements of different soils for crop production a study for many years, perhaps I might add a few facts of interest. Turning under organic matter as early as possible in the fall adds a three-fold value to the next crop.

First, it adds humus to the soil and puts it in a condition to absorb and conserve the moisture from the winter's snows and spring rains.

Second, it gives the organic matter time to decay and furnish plant food for the next crop.

The third and greatest advantage is this: In all our clay loam soils there is a vast abundance of potash in an insoluble silicate form and any organic matter turned under or buried with it in the soil will tend to render it soluble through the action of nitrifying bacteria that in their final result produce nitric acid, which not only makes nitrates for plants' use, but also acts on the insoluble silicate of potash. On such soils the turning under of organic matter will enable the grower to get all the potash needed for the next crop.

We suppose the farmers in the older states have learned better than to rake up and burn the organic matter off their land. But down here in the semi-arid region of Oklahoma, where humus in the soil is about as important a factor in crop production as plant food, many of the farmers still persist in the old-time foolish practice of raking and burning everything off their land, little dreaming of how fast they are robbing their soil of its fertility. Only last week my attention was attracted by a big cloud of smoke arising from the lot at the rear of my nearest neighbor's barn. Upon investigation I learned that he was cleaning out his barn and burning the manure and litter, notwithstanding the fact that he has ten acres of land adjoining the premises, which badly needs the humus, if not the fertility, this would have furnished for next year's crop. It is an old proverb that "every cloud has a silver lining," but I was unable to see any silver lining to this cloud of smoke going up from the burning of so much valuable fertilizer.

Oklahoma. J. M. SMITH.


CO-OPERATIVE LAND CLEARING ASSOCIATIONS.

(Continued from first page).

Of course, the range of possibilities for such a land clearing association as suggested is very wide. Two or three men might get together, and work to advantage. A large number might get together on buying equipment and then work the equipment by groups. Local conditions should determine the form of the organization.

As to capital to buy equipment, any banker, when the proposition is explained to him will take the joint note of the members of such an association for the necessary money, or advantage may soon be taken of the new federal farm loan law for such a purpose.

At this season of the year many farm operations are being closed up for the year. With the finish of corn harvest and potato digging the equipment used for this work can be stored away for the winter. This is a good time to get all the farm tools packed away in the tool shed for winter. They can now be put away in such order as to make them convenient of access as wanted next year. When doing this work note should be taken of needed repairs that these may be secured in advance of actual need.



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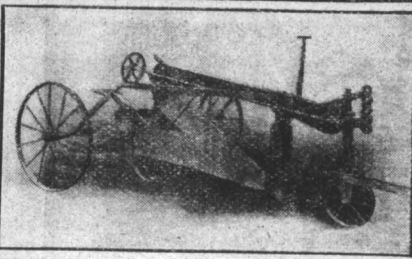
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RUST PROOF

Growing Mushrooms

THE mushroom as a get-rich-quick proposition has been pretty well advertised and the average farmer will do well to fight shy of such projects as a means for making big profits. However, there are pleasing possibilities in growing mushrooms for home consumption. While the average farmer has little time for such things, this is something that requires but little attention, once the bed is properly started. It is also true that mushrooms can be grown at a time of year when other work is the least pressing.

A good mushroom bed will continue to produce for five or six weeks after it begins to bear, and during this time it will have yielded at least a pound per square foot of surface. By devoting a corner of the cellar ten feet long and four feet wide, therefore, to mushrooms the family table should be enriched by about forty pounds of the most nutritious kind of food. The life of the bed and the amount of production depends upon starting right and having a cellar of about the right temperature. It is possible to grow mushrooms in a temperature ranging from 45 to 65 degrees but the best results are obtained in from 55 to 58 degrees. The cellar in which there is a furnace can usually be partitioned off to meet these conditions, while the one without a heating plant can generally be so banked and protected from cold that it will grow good mushrooms.

Prepare a Compost.

The first thing to do is to prepare the compost. This is done by using four parts of fresh horse manure, well mixed with straw, to one part of fresh clean soil. Be sure that the soil is free from manure and in order to do this, get the dirt from beneath clean sods in an old field. This will assure freedom from seeds of wild mushrooms and toadstools which may be poisonous. The horse manure should be taken directly from the stable and must be perfectly fresh. Mix this material thoroughly and allow it to become composted for a month, forking it over every other day to keep it from fermenting and badly heating. Protect the heap from rains by covering with frames or mix the material in an open shed. When the compost is ready, prepare the bed in the cellar. This is done by putting down a layer and tamping it solidly, then another and so on until the bed has been built up to a depth of 12 inches. This will require the putting down of about six layers of two inches in depth. It is important that the bed be made as solid as possible before the spawn is put in.

Spawning the Bed.

Use a thermometer to ascertain the temperature of the bed. At first it will register around 100 degrees but this will gradually lower until it reaches 85 or a little more. It is then time to put in the spawn. The spawn comes in the form of bricks. These should be broken up into pieces about two inches square and forced down into the bed at intervals. A stick or small trowel may be used to make the holes after which the soil should be firmed back in place. Leave the bed perfectly smooth when the planting is concluded. It will not require from eight to ten days for the spawn to "run the bed," as the process is called. Perhaps it is better to leave the bed alone for at least two weeks, during which time the so-called mycelium or thread-like growth from the spores penetrates all parts of the bed.

Care of the Producing Bed.

When this is completed the bed must be "cased." This consists of covering it with an inch or two of good clean soil. Procure the soil from a clean spot in the field and see that it is not of a heavy clayey texture. Sandy loam is best for the "casing." After this operation has been completed, water the bed sparingly but never

allow it to become wet. Too much moisture has been the cause of failure with many mushroom beds. Spray the bed lightly with a fine spray until the mushrooms begin to appear then the bed will require a little more water. Never add too much, however. A spraying once or twice a week is amply sufficient. Pick the mushrooms as often as a mess appears and this should be done every other day anyway. Care in gathering is important. A good bed may be ruined by careless handling. Take hold of the stem and give it a gentle twist to remove it from the ground. Fill the holes caused by picking mushrooms.

New Hampshire. C. H. CHESLEY.

PESTS OF THE BERRY PATCH.

Yes, the busy days of berry picking are over—the last bush has been stripped, the last cover tacked on and the last crate shipped.

Many, as they see the tempting fruit seem to think that all we have to do to coin money is to set the plants and harvest the fruit. They little realize the amount of work and watchful care that small fruits require in order to be profitable.

First comes the strawberry with its diseases and insect pests. It is often subject to blight which is injurious to both plant and fruit. It first shows itself upon the leaves in reddish, purple spots, which soon turn lighter colored and finally white. Upon these spots a spore is formed which spreads the disease during the summer while in the fall and winter a form is produced which infects the new leaves the following spring. Thus the fruit is deprived of its nourishment and in some instances crops have been ruined. But if one starts a field with good healthy plants and sprays with Bordeaux mixture there is generally but little trouble. The worst insect pest is that nuisance of the farm, the cutworm, which is often very destructive as it eats off the roots and crown in feeding. The roots are often attacked also by the white grub and the strawberry root borer. The latter bores into the crown and down through the heart into the roots, usually killing the plant. The best remedy for this pest is to change the location of the bed often; not raising more than two crops without planting on new ground.

The pest of the raspberry and blackberry are anthracnose and rust. The insect pests are many, among which are the tree cricket, the red-necked agrilus and the raspberry saw fly. The crickets weaken the canes by making longitudinal punctures filled with eggs for several inches down the canes. These eggs are long and often mistaken for grubs. The best and surest way to get rid of them is to cut and burn the canes containing them. The saw-fly I have never seen; but it is described as a light-green slug which works on the under side of the leaf and resembles it so closely that one has to look carefully to detect them. They cut irregular holes in the leaf, often nearly perforating it. Hellebore or the arsenites are recommended as remedies.

When one stops to consider all the numerous diseases and pests with which the fruit grower has to contend, it is not surprising that so many make a failure of the business. "Eternal vigilance is the price of success." The one who masters all difficulties and works understandingly reaps a rich reward, while the careless and consequently discouraged one is ready to declare that there is no money in fruit.

Oceana Co. J. M. WILLSON.

Because of the marked immunity of blackberries to crown gall, which may be transmitted to fruit trees, that crop should be preferred to raspberries for orchard interplanting.

COMPOST FOR NEXT YEAR'S GARDEN.

Well-rotted manure is better than fresh manure for gardens. It is also cheaper than commercial fertilizers in these war times when the supplies of some fertilizers are cut off by the blockade and the materials used in making others are very high in price because they are used in making explosives. Composted manure is as good or better than the ordinary well-rotted article and very much cheaper because more can be saved and much less is wasted by being washed away or leaching into the soil while rotting. It is a better balanced plant food and does not produce so much leaf and vine instead of the fruit or roots for which most garden crops are grown.

Such a compost pile should be made every year, not only for garden use, but for use in potting house and greenhouse plants. Directions for making are as follows: Select a level, well-drained spot as near the barn door as possible, where the wash cannot go through the pile and wash out the plant food. Dig away three or four inches of the looser surface soil over a strip four feet wide and as long as desired.

Fill the hole with well-rotted or composted manure and pile on top of this alternate six-inch layers of fresh manure and weeds or sod, mixed with some earth, until the pile is about waist high. The weed seed will be killed in the process if the heap is properly handled, and an addition of such extra material as leaves and straw increases the amount of compost obtained from a given amount of manure. When many leaves are used, add lime to make them decay more quickly and sweeten the acid condition they produce.

The whole pile should be covered with a thin layer of earth to help absorb the ammonia and many other valuable plant foods which escape in the vapor. Keep pile wet but not so well soaked that water runs from it and carries away the plant food. Fork over and rebuild the pile every six or eight weeks and cover it again with earth. Composting should be completed in from six months to a year, depending on the kind of material used and whether lime and water have been used to hasten decay.

From ten to fifteen tons of compost should be added per acre, or a little more than if undiluted manure had been used. Lighter applications should be for fruit and root crops, like beans, tomatoes, potatoes and beets, than for leaf crops like lettuce and cabbage which can use a great deal of rich food.

Mo. Ag. Col. J. S. GARDNER.

TROUBLE DEPARTMENT.

The Hill System of Growing Strawberries.

What is the best method of raising strawberries? I have raised strawberries off and on for several years in the matted row system and I have been bothered with lots of weeds. What I want to know is how to raise them in the hill system; if you can do as well as you can in the matted row. I want to put the plants as close together as they will do well each way. How far apart should the rows be and how far apart should the plants be in the row? I wish to know the variety that will do the best in the hill. What will be the best fertilizer to use to enrich the ground for the berries? Would wood ashes be a good fertilizer. When is the best time to set plants, spring or fall?

Ionia Co. W. D.

Either the hill system or the hedge row system of growing strawberries is good on weedy ground, and also for the production of fancy strawberries. The distance apart for setting the plants varies. In some systems of hill culture the plants are set about 12 inches apart each way, and having them in beds of about four rows. Between these beds are alleyways about three feet wide which are for the convenience of the pickers. In other cas-

es the plants are set 12 inches apart in the row with the rows about 18 inches apart.

The principle of the hill system is to cut off all the runners that the plants made, so as to conserve the energy of the plant for the making of fruit buds, and it has been found that strawberry beds under this method of culture will remain productive for quite a few years. In some cases an individual plant has produced good crops for eight or nine years.

The hedge row system is similar to the hill system, except that the plants are allowed to make runners enough to fill the spaces between the plants in the rows. The rows when complete are just one plant in width. The best varieties for these methods of strawberry culture are those which do not make many runners. Such varieties are usually producers of high quality, fancy berries. Glen Mary is probably the most popular variety for this purpose. The Marshall would also do well under this system, and on the lighter soils the Uncle Jim or Dornan will prove profitable.

The best way to fertilize the strawberry patch is to get the ground in good tilth and fertility before the plants are set. If the plants do not start well in spring, one or two light applications of nitrate of soda will do much to stimulate plant growth. The nitrate of soda must be put on early in spring, otherwise it will stimulate the plants at the expense of the fruit bud formation.

As to the time for planting strawberry beds, there is no doubt as to the value of spring planting, and on account of its superiority over fall planting, it is almost universally used.

Wood ashes will make a good fertilizer if not leached. It is also of value on acid soils, on account of the lime it contains. One difficulty in the use of wood ashes is that the quality is so variable that one does not know how much real fertilizing value he is getting out of it.

TREE-EATING INSECTS.

Uncle Sam, who is a guardian of scenery in the national parks of the country, has come face to face with the fact that the lives of trees, which are important contributors to the beauty of the federal reservations, are in many localities seriously threatened by insects. In order to be in a position better to preserve the forest growth he is planning to send rangers from each of his national parks to school to the bureau of entomology of the Department of Agriculture, where they will be instructed by an entomological ranger who is an expert in insect control and prevention. The chief insect enemy of coniferous trees, and therefore the insect responsible for the greatest damage in western forests, is the bark beetle. This insect bores under the bark of pines and in two or three seasons kills the trees. The bureau of entomology estimates that the annual damage to forests by the beetles equals that from forest fires.

It is believed that when the students return to their stations in the national parks they will be sufficiently well grounded in the work of forest insect control to impart their knowledge to others of the park employes. In this way there can be built up a force of entomological rangers to carry the work on systematically through the years.

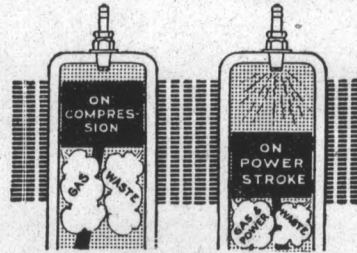
At first it was believed that forests in which bark beetles had secured a foothold could be protected by cutting out all infected lumber. But an important discovery was made that has cheapened the procedure. It has been found that when only a portion of the infected trees are removed, so that the density of the colonies is reduced to a certain point, the natural enemies of the insects make short work of those remaining.

Gasoline Economy

How it is affected by correct or incorrect body in lubricating oil.

Have you noticed this:

Excessive consumption of lubricating oil is usually accompanied by excessive gasoline consumption. The drawings below indicate how this waste occurs.



In each cylinder the space between the piston itself and the cylinder walls is usually termed the piston clearance.

Each piston is fitted with a number of rings which are free to expand and contract and are designed to fill this clearance.

If the body of your lubricating oil fails to seal the piston rings, two things happen:

First: The oil rapidly works up past the piston rings into the combustion chamber. There it is burned with each explosion. Oil is used up rapidly. Excess carbon deposit results.

Second: With a poor piston ring seal, the gas mixture works down past the piston rings on each compression stroke. Gas goes to waste. On the power stroke the exploding fuel charge also works down past the piston

rings. Gasoline again wastes. Power is lost. Gas consumption mounts up.

Gasoline economy and full power both demand oil which correctly seals the piston rings in your motor.

Different cars demand oils of different body.

In the Lubrication Chart below, which represents our professional advice, you will find specified the correct grade of Gargyle Mobiloils for your car—the oil which assures a proper piston ring seal.

In use you will find that this oil will maintain full compression and prevent the escape of the expanding gases on the power stroke, thus assuring—

Gasoline Economy Power Economy Oil Economy—and

Preventing the formation of carbon deposits.

If your car is not listed, a copy of our complete Chart of Recommendations will be sent you on request.

An Economical Demonstration.

It will probably cost you less than \$1.00 to fill your crank-case with the correct grade of Gargyle Mobiloils. You can then watch the results for yourself.

In buying Gargyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargyle on the container. For information kindly address any inquiry to our nearest office.



Mobiloils

A grade for each type of motor

CORRECT AUTOMOBILE LUBRICATION

Explanation: The four grades of Gargyle Mobiloils for gasoline motor lubrication, purified to remove free carbon, are

Gargyle Mobiloil "A" Gargyle Mobiloil "B"

Gargyle Mobiloil "E" Gargyle Mobiloil "Arctic"

In the Chart below, the letter opposite the car indicates the grade of Gargyle Mobiloils that should be used. For example, "A" means Gargyle Mobiloil "A," "Arc" means Gargyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

Two large tables with columns for Model of Cars (1916, 1915, 1914, 1913, 1912) and rows for various car models like Abbott Detroit, Apperson, Auburn, etc., with corresponding lubrication grades (A, B, E, Arc, Arctic).

YOUR TRACTOR

also may be lubricated efficiently with Gargyle Mobiloils. On request we will mail you a separate Chart specifying the correct grade for each make and model of tractor.

VACUUM OIL COMPANY, Rochester, N. Y., U. S. A.

Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

Domestic Branches:

Detroit Boston New York

Chicago Philadelphia Indianapolis

Minneapolis Pittsburg Kansas City, Kan.

The Cost of Milk

In your issue of September 30 I see an article by C. F. Preston, giving what claims to be "Authentic Figures on the Cost of Milk," in which, from various sources, he establishes a price of about five cents per quart as being the real cost of producing milk of three per cent quality. As I figure it out, it takes about 13 quarts of such milk to make one pound of butter, and at five cents per quart, that butter would cost 65 cents, with some overhead expense for separation, churning, working, packing, and putting into some kind of a container for shipping, so, as I figure it, this overhead charge would be about five cents per pound; with a small drawback of the weight of about one ounce of salt going into each pound of butter.

Now, if it actually costs 65 cents for the milk to produce one pound of butter that sells at from 30 cents to 35 cents per pound, I fail to see where a profit comes in for the dairyman who produces and sells the butter.

I read a paper called "Hoard's Dairyman," published in Wisconsin, in which the butter-producing business is claimed to be profitable in that state, and that immense quantities of butter are made there. I get somewhat mixed up with these conflicting statements, for I well know that thousands of dairymen in Wisconsin, Minnesota, Iowa and Illinois, are doing a profitable business in making butter, and my "authentic figures" seem to indicate that these butter makers must be producing milk at about two cents per quart.

Perhaps Mr. Preston, or the Michigan Farmer can arise and explain this matter, so that we all can clearly see where my figures do not agree with those "authentic" ones?—W. H. OLIVER, Delta County.

THE above communication is worthy of the most careful consideration. The question of the cost of producing milk is one upon which milk producers of Michigan cannot be too well informed. What they desire is facts, and any discussion which gives the average milk producer a better understanding of facts regarding the actual and necessary cost of milk production will be profitable to all concerned.

A review of the article mentioned by Mr. Oliver, "Authentic Figures on the Cost of Milk," which was published in the Michigan Farmer of September 30 will convince the reader that the data published in Mr. Preston's article comes from reliable sources, the cost figures in every case being of an official nature taken from public records which are available to the skeptical reader for purposes of verification. The methods of accounting by which these results are arrived at are given in each case, so that the dairyman can check up the various items of cost for himself.

The "Figures" Don't Lie. Really, however, there is not such a wide margin of difference between the authentic figures to which Mr. Oliver refers and the premises which he takes as a basis of contrast with, and criticism of the authentic figures. In order that we may the better reconcile the two views of this proposition, let us then first briefly consider Mr. Oliver's hypothesis since his "figures" have apparently been made with care and are as unassailable from this point as are the "authentic figures" with which he desires to have them reconciled.

Mr. Oliver asserts that he well knows that thousands of dairymen in Wisconsin, Minnesota, Iowa and Illinois, are doing a profitable business in making butter, and that his "authentic figures" seem to indicate that these butter makers must be producing milk at about two cents per quart. However, Mr. Oliver does not submit any authentic figures which conclusively show that these thousands of dairy farmers are making a profit from their dairies. It must, of course, be granted that they are making ends meet from their farming operations else they could not year after year continue in the business, but it will not be difficult to convince the thinking dairyman that on the basis given they are not receiving adequate pay for their labor, to say nothing of making a profit on their investment in the dairy department of their business at the prices given.

Let us, for example, be liberal in estimating the average product of a cow in the best of these dairies which fall in the class mentioned by Mr. Oliver. It will be conceded that 6,000 pounds of milk per annum would be a liberal estimate, which at two cents per quart would be worth only a little more than \$60. It will be conceded by any careful dairyman that \$60 will not pay the feed bill for a 6,000-pound dairy cow, even if the feeds are figured at actual cost of production on the farm, to say nothing of paying for the labor and care of the cow or the

handling of her product, interest on investment, overhead cost of operation or other items which necessarily enter into the conduct of a business of this kind.

Mr. Oliver is not, however, quite fair in his estimate as to the price at which the class of butter makers referred to must produce milk, since he has neglected to figure the value of the skim-milk. If we give the dairy business every possible benefit and figure this skim-milk at its actual feeding value under the most favorable of conditions, which the Iowa Experiment Station has determined to be 45 cents per hundred pounds, and also figure the value of the buttermilk produced at the same approximate value, we will have added approximately one cent per quart to the gross income received by this class of dairymen for the milk produced on their farms.

A comparison of this revised figure with the cost of milk as given in the authentic figures above referred to where only the food cost per cow is figured at the actual production cost of the feeds will show them to be quite parallel. In the New Jersey figures for instance, if all legitimate overhead charges are omitted, milk was produced at an actual food cost per cow, reckoning feeds at cost of production, of approximately two and a half cents per quart. When the food costs per cow was figured at the market value of the feeds used, however, the cost per quart of milk in this case rose to approximately 3.2 cents per quart, and when the legitimate overhead expenses, including interest on investment, interest on and depreciation of stock and equipment, cost of labor properly chargeable to the dairy end of the business and other items which will be noted by referring to the article, the actual cost or necessary selling price of the milk to make the dairy a profitable factor in itself reached 4.98 cents per quart.

The Dairy Should Stand on its Own Record.

In this consideration, the question properly arises whether the dairy should be considered as a means of returning the cost of the feeds grown upon the farm, thus limiting the possible benefits to be derived from the business to the conservation of soil fertility for the growing of other crops, or whether the dairy business should be considered as an independent factor of the farm to be placed upon a profit paying basis in itself. Surely any business farmer will concede that the latter basis is the only acceptable hypothesis. In that case the feeds used in the dairy must be figured at the actual market value instead of at the actual cost of production. The labor required in conducting the dairy should be charged against it as a factor in the cost of producing the dairy product. Likewise the interest on the investment in the dairy herd and the equipment incidental to its maintenance should be charged against the dairying department of the farm business. Some charge should also be made for the factor of management, since the carefully conducted dairy re-

(Continued on page 352).

Reliance Cream Separators

100,000 Sold In Two Years

Self-Oiling

WE were not content with merely giving satisfaction. That's why we produced a new model cream separator. One that goes ahead of anything ever built—a separator that works easier, that gets more cream and affords greater profits than have ever before been known in the separator world.

The new Reliance Separator—the self-oiling machine—the machine that is made up of new, improved and long desired features. "And the demand for this new reliance when we placed it on the market two years ago was almost instantaneous—even exceeded our biggest hopes. The users of our new model were not only satisfied with it—they were so loud and enthusiastic in praise that we couldn't keep up with orders, and the demand keeps us right up on our tip-toes to this very day. Write us at once for full particulars in order that you may insure yourself of an early delivery. We will send Reliance book as soon as your postal is received.

Reliance Engineering Co., Box 563, Lansing, Michigan



The Cow Waters Herself

With this wonderful new Libbey Automatic Water Bowl. Each bowl controls own water supply. Animal moves lever, opening water valve, when it starts to drink. Lever swings back closing valve when animal stops drinking. No float tank required. Bowls may be put at different heights or in any stall or pen. Cannot overflow; cannot get out of order; almost no water left in bowl. Most sanitary bowl ever sold. Prevents spread of contagious diseases. Increased milk yield quickly pays back cost. Saves labor; saves feed. Write today. Also for Catalog No. 9 if interested in Stanchions, Stalls, Carriers, etc. \$ at 3cc.

C. A. LIBBEY COMPANY
8 Jay St., Oshkosh, Wis.



A Wonderful FEED

THAT'S GUARANTEED

—to produce more milk than any other ration either home mixed or purchased and do it without giving your cows constipation or udder trouble. Ready to use right out of the sack without any mixing.

Larro-feed

Absolutely free from adulterants and fillers, just like the feed you would mix for yourself, is a special combination of choice cottonseed meal, dried beet pulp, gluten feed, corn distillers' grains, wheat bran, wheat middlings and a little salt, that's all; each ingredient weighed by automatic scales and all thoroughly mixed in huge power driven mixers, so that it is always absolutely uniform, and always good. An extra quart or two of milk daily from each cow may turn a loss into a profit. Try LARRO-FEED for more profits. Sold on "money back" or "satisfaction" plan, the decision being entirely up to you. Ask your local dealer. Write us if none near you. THE LARROE MILLING CO. 1055 Gillespie Bldg. Detroit, Mich.



THE "TALE" OF A PIG

Write us for this snappy, little story. It's highly interesting, free and is worth money to you. Also get particulars about the widely-known

HEESEN FEED COOKER

Hadiest Article On The Farm
Cast Iron Hog Troughs, etc.
Learns how 55000 farmers are making Bigger Profits, Cutting Feed Cost and Avoiding Disease by feeding cooked feed. Write today sure.

HEESEN BROS. & CO.
Box 519 Tecumseh, Michigan

TO SILO OWNERS—you who did and didn't see the Blizzard at your state fair



BLIZZARD
Ensilage Cutters

Write today for catalog showing the simple construction and the mechanical superiority of the Blizzard. Also ask for booklet "What Users Say" in which farmers tell about the Blizzard: the power required, elevating ability, capacity, even cut silage, repair expense, etc. You probably have made up your mind not to go through another silo filling season without a cutter of your own. Perhaps you want a better one. Begin investigating now. Write for these booklets.

THE JOS. DICK MFG. CO.
Box 24, Canton, Ohio

Note self-feed table. Sold unmounted or in two different mountings.

When any Blizzard part wears out from long service it's replaceable.

A Razor Snap

A new lot of fine quality Imported Razors at 40 cents while the supply lasts, is now offered by the Michigan Farmer.

The razors are made of the best cutlery steel, five-eighth-inch blade, and black handle. We will not say just what these razors ordinarily retail at, as prices on razors vary with each dealer, but we have seen razors no better sold at \$1.25 and \$1.50.

Every man who shaves ought to have at least three razors as it is a proven fact that giving a razor a rest is beneficial to it, and here is your opportunity to get a supply at very little cost.

So, only while our present supply lasts the price is 40 cents each, post-paid, or a half-dozen at \$2.00, post-paid. Address all orders to the Michigan Farmer, Detroit, Mich.

HONEY 5 lb. pail finest extracted honey, by parcel post, for 75c.

M. H. HUNT & SON, LANSING, MICH.

Wanted Farm Hand Married, will pay \$40 per month. Will furnish house, etc., free. Box 60, Grosse Ile, R. F. D., Michigan.

B. L. K. MILKERS FOR SALE
Having disposed of my dairy herd I will sell 3 B. L. K. Milkers and complete equipment. Geo. A. True, Armada, Mich.

Improving Farm Butter

THE adoption of more careful methods of handling milk and cream and improved practices in the making of farm butter will reduce rather than increase the trouble incident to home production of this food, and will result in a superior product which can be sold more easily and for a better price than the average farm butter. Last year about thirty million pounds of butter, much of which originated on the farm, was washed or renovated because it was of such poor quality that it could not be profitably offered on the regular butter markets.

Churn Cream Only.

Cream alone should be churned. It may be skimmed as soon as it rises or may be separated by a mechanical separator. The latter plan is the more efficient, and though requiring a considerable initial outlay often will be profitable. The cream should be set aside in a clean place by separate milkings. A temperature of 50 degs. F. or lower should be maintained until from 12 to 18 hours before churning time, when the various batches should be stirred together well and brought to a temperature of about 70 degs. F. by placing the container in a bucket of warm water. One of the first acts of the farm housewife who decides to adopt improved methods should be to purchase a dairy thermometer. Temperatures play an important part in the development of flavors in butter, and always should be determined with fair accuracy. After the cream is mixed it should be kept at approximately 70 degs. F. until just before churning time, when it should be reduced to about 58 degs. F., where this is possible (or to such temperature not above 65 degs. F. as to complete the operation of churning within 25 or 30 minutes).

Churning.

The barrel type has been found by dairy specialists to be one of the most satisfactory churns. The dasher or plunger type requires a somewhat greater expenditure of labor. Earthenware churns are especially undesirable unless perfectly glazed, since if pores are exposed they absorb milk and cream which later decay. Churns with mechanical devices inside them are difficult to clean and sometimes injure the body of the butter.

The churn should be scalded preparatory to churning, but should be cooled with water before the cream is placed inside. The cream should be poured in through a coarse strainer. Every few minutes during the early part of the churning gas should be allowed to escape from the churn. If the temperature is right the churning should require about 25 or 30 minutes. The process is completed when the granules of butter are about the size of large wheat kernels. The butter-milk should then be drained off and the butter granules repeatedly washed with cold water while still in churn. The washings should be continued until all milk is removed. Under no circumstances should working be depended on to remove surplus milk.

Working and Packing.

When the butter is free from all milk it should be taken from the churn with a paddle and placed on a worker. The hands should never touch the butter, both on account of sanitary reasons and because the body warmth may melt the fat. The working should be done carefully to avoid making the butter greasy. Before the butter is worked, fine salt should be added at the rate of about an ounce per pound of fat.

The butter should be prepared for market in a rectangular mold since, when in this shape the product is more easily wrapped and handled and is more pleasing to customers. Regular parchment butter-wrapping paper should be used around the prints, as

ordinary waxed paper tears easily and sticks to the butter. The placing of the wrapped prints in pasteboard boxes is a desirable final step, as it protects the package, gives it a better appearance, and permits the use of the maker's name or trade-mark as an advertisement.

After the butter-making operations are completed the churn should be rinsed carefully with warm water. It should then be scrubbed with hot water, cleansing powder and a fiber brush and finally should be scalded and set in a clean, sunny place to drain and dry out.—U. S. Dept. of Ag.

DAIRY PROBLEMS.

Ensiling Frosted Corn.

I have a field of corn that is mostly just past the stage of roasting ears, some still in the milk, that is frosted. Leaves will mostly wither, stalks do not appear injured. Will it be better to put this in silo as soon as possible or to leave it standing to secure more mature ears from juices in root and stalks?

Tuscola Co.

L. L. W.

The sooner the corn is put in the silo after being frosted, the better. If put in at once most of the leaves can be saved. There is no reason to believe that the frost has injured the feeding value of the corn, only by stopping its development. The corn can not improve after the leaves are frozen. If it is not mature, of course, when cut by the frost there is a loss because the corn would have improved, but after being frozen it will not improve and if left many of the leaves will be lost. Put it in the silo just as soon as you can. But put it in, even if you have to wait some time, for the stalks and ears will be good anyway, and they contain most of the food value. Don't feel too bad if your corn is frosted, for it will make good feed if you have a silo and if you lose all the leaves you have lost only a small part of the plant by weight.

What Grain to Buy to Balance Ration.

What should I buy to make a balanced ration for dairy cows? I have first-class clover hay, corn fodder, and bean pods, and for grain corn and oats. I can buy cottonseed meal for \$1.80 per cwt; oil meal \$2 per cwt, and bran at \$1.40 per cwt. Now which would be the cheapest in food value to go with my corn and oats?

Eaton Co.

M. W.

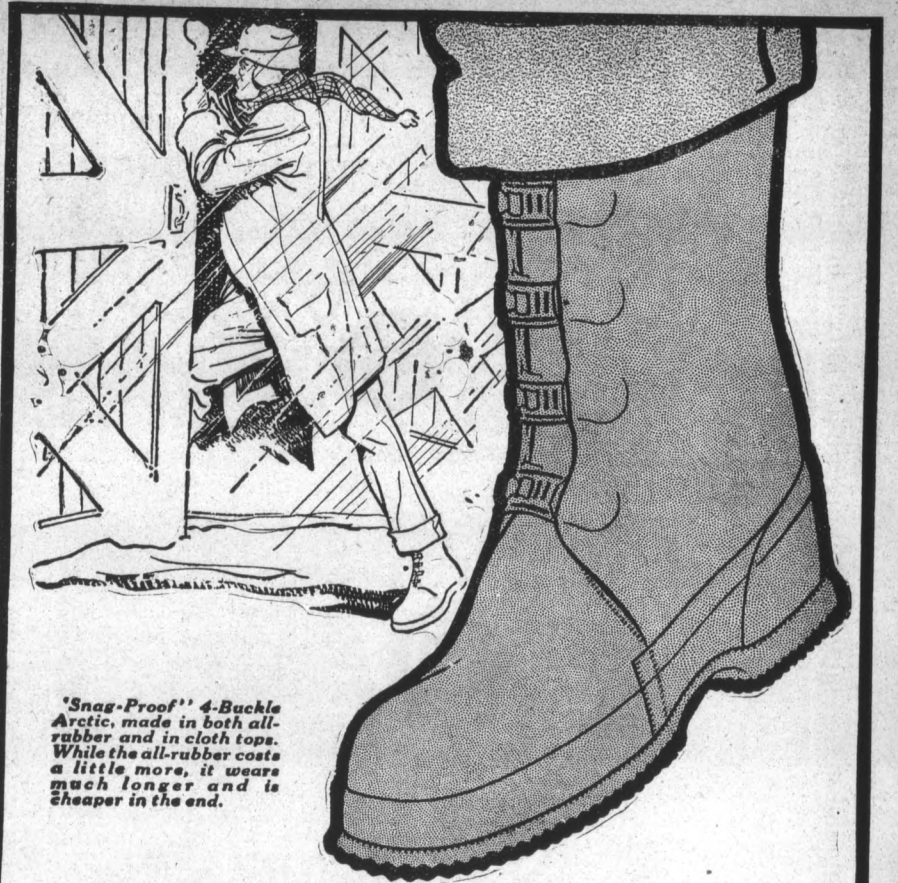
Cottonseed meal is the cheapest to buy to balance this ration. Two pounds per day per cow and enough corn and oats to make one pound of grain per day for every pound of butter-fat produced in a week. Or feed one pound of grain for every three pounds of milk that tests 3.5 per cent of fat or less, and one pound of grain for every four pounds of milk that tests about four per cent fat.

While cottonseed meal is very rich in protein, and a pound of digestible protein can be purchased in this feed probably for less money than in any other, you can get splendid results by feeding gluten feed in place of cottonseed meal.

If you can sell your oats and buy bran and make money by the exchange and you probably can, then sell the oats and feed bran in the place of the oats. Feed all the clover hay, bean pods, and cornstalks the cows will eat without waste.

COLON C. LILLIE.

In an experiment to determine the effect of feeding phosphates directly to cows, precipitated bone phosphate was fed at the rate of one ounce per day. No appreciable effect was obtained either on the quantity or quality of the milk produced. Apparently this material had no effect on the stimulation of the nervous system; if anything, it had a depressing effect. The weight of cows receiving the precipitated bone ash showed a slight increase.



"Snag-Proof" 4-Buckle Arctic, made in both all-rubber and in cloth tops. While the all-rubber costs a little more, it wears much longer and is cheaper in the end.

Two Feet Deep In Comfort

Put your trust for wear and comfort in Lambertville Rubber Footwear. It is built layer upon layer of all new, fresh rubber—thick and tough as a mule's hide. That means WEAR—amazing long wear.

When you sink your feet in a pair of Lambertville Arctics, Boots or Shoes, it is just like planting them in an upholstered chair. We take special care on the outside to keep your feet dry and on the inside to keep 'em comfortable.

LAMBERTVILLE RUBBER FOOTWEAR

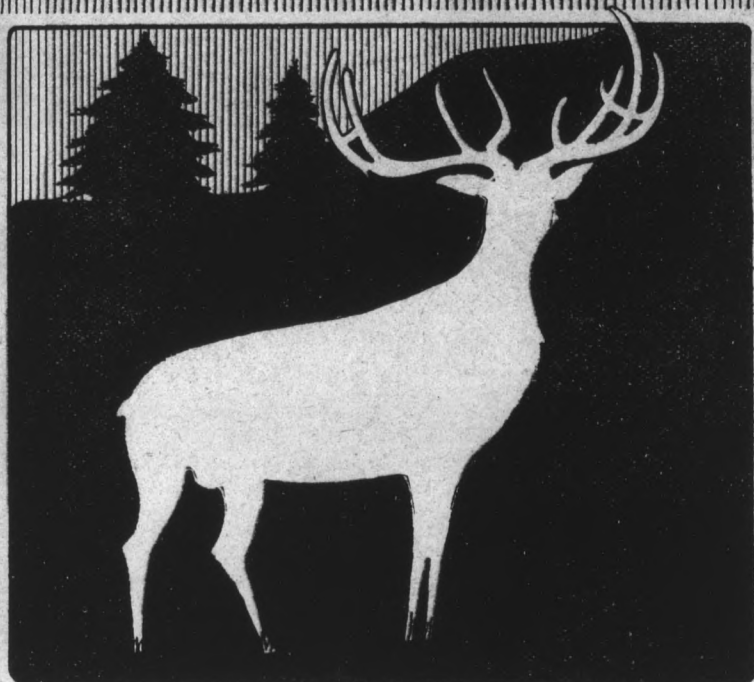
is made in four brands of various grades at prices to suit all requirements. "Snag-Proof," illustrated here, has seven thicknesses of pure Para rubber ground into the heavy sail duck. Look at the thick sole that resists wear and weather and makes you feel like you're walking on clouds. The other three Lambertville brands are "Red-skin," made of durable red rubber; "L" brand has a duck vamp; "Lamco" is pure gum, with heavy ribs. If you don't locate the Lambertville dealer, write us and we will see that you are supplied. Send for booklet.



"Snag-Proof" all-duck Short Boot

LAMBERTVILLE RUBBER COMPANY
Lambertville, N. J.

WINCHESTER



.32, .35, .351 and .401 Caliber SELF-LOADING RIFLES

When you look over your sights and see an animal like this silhouetted against the background, you like to feel certain that your equipment is equal to the occasion. It is, if you are armed with a Winchester Self-Loader. Not only does this rifle shoot surely, strongly and accurately, but it gives you a chance to get in a number of shots in quick succession. It is the rifle of rifles
FOR ALL KINDS OF HUNTING

The Shetland Pony

By H. L. ALLEN

FARMERS, as a rule, regard the Shetland pony as strictly a toy for the children of the cities to play with, but, as a matter of fact, the farm children can get just as much pleasure and a great deal more useful service out of one of these charming little pets as city children can. Since farming has advanced to the position it holds as a life work, most farmers are desirous for their children to fit themselves to stick to the soil instead of rushing off to the cities where every branch of professional life is crowded and where hundreds drop back, beaten in the race for wealth and position, where one succeeds.

Conditions used to be different when farming was a labor of hands; before the invention of labor-saving machinery and before education and science stepped in to lighten the physical tasks of the farmer and to place farming on the same basis as any other business requiring the best that is in a man to make it succeed, except that the farmer and his family may be surrounded by conditions favoring healthy and long life in a degree which marks none of the great business enterprises of the city.

The vast number of sons and daughters of farmers who are taking the agricultural courses in our high schools and attending our agricultural colleges is proof that no longer does the average farmer feel it necessary to advise the boys to adopt some other work because of the drudgery connected with farm work; the drudgery no longer ex-

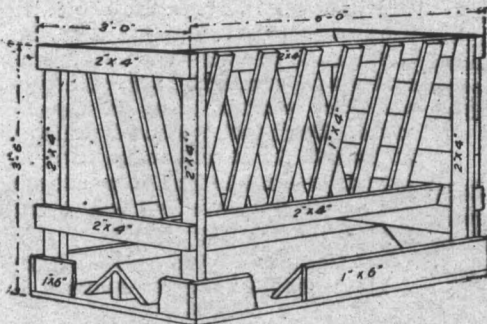
many useful services he will enable his youthful owner to perform will more than pay his keep.

Breeding Ponies a Source of Profit.

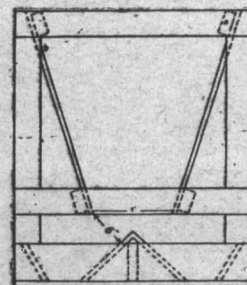
But there is another phrase of the Shetland on the farm, and that is the breeding phase. The Shetland, like other breeds, is now raised on a blood basis, the breed having a stud book which has been founded long enough so that there are certain strains of blood, or combinations of strains, that are more sought for breeding purposes than others, just as highly productive strains of blood are sought by breeders of our other breeds of domestic live stock.

There is a good demand for registered Shetlands and, as long as there are children there always will be. A little stallion and a few mares—even two or three—may be made a good paying investment on almost any farm. They do not require the close attention demanded by most other varieties of live stock. They are very hardy; the ailments which prove serious to horses of the larger breeds do not affect them in a degree anything like they do the larger horses and they live to a more advanced age than their larger relatives, many of them living to be well past thirty years old, the little mares being seen frequently nursing foals when well towards thirty.

The Shetland of today, in this country, is vastly different from the imported Shetland of a quarter of a century ago. Owing to the period of starvation the Island ponies underwent in



RACK FOR FEEDING HAY TO HOGS



END VIEW OF RACK

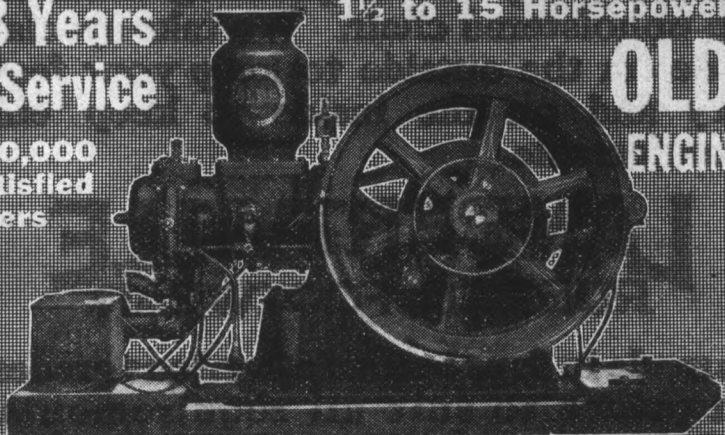
Details of Construction of a Good Rack for Feeding Hay to Hogs.

38 Years
of Service

150,000
Satisfied
Users

1 1/2 to 15 Horsepower

OLDS
ENGINES



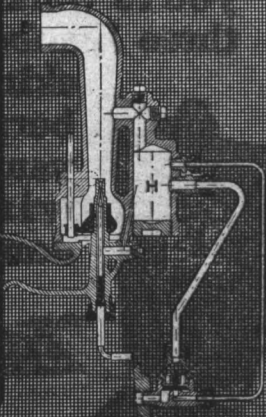
Take It Easy, Let The 'OLDS' Do It

"No Friend Like an 'OLDS' Friend"

SATISFACTION is the thing you think you are buying in an engine and it's the thing you really get when you buy an OLDS. **BECAUSE** the best material and the best workmanship are put into the engine; it is easy to start in all kinds of weather; it saves you gasoline and repair bills; its special features are designed for the greater convenience, economy and service to the owner. Note the Mixer illustrated here: no moving parts to wear out, no pump to re-pack, no plunger to get out of order. This is one of the exclusive, patented features of the OLDS engine. Get our prices and guarantee—more attractive and liberal than ever.

BE AN OLDS OWNER

Reliance Engineering Co.,
No. 997 Chestnut St., Lansing, Michigan.



ists where education and scientific methods have been taken advantage of. **Keep the Boys and Girls Contented.**

The main thing now, in saving the boys and girls to the farm is to get them started right; to inculcate in their minds a feeling of contentment and a love for everything connected with the farm. And right here is where the Shetland pony may be made a great factor in determining the future of the boy or girl of the farm. The companionship, the pleasure and the service which a boy or girl will get out of a pony at an age when impressions on the mind are most lasting have an influence on the future of the child which can hardly be over-estimated.

It is during that period in the life of the farm boy or girl, before the mind becomes sufficiently developed to comprehend that work is a preliminary to successful accomplishment that discontent creeps in and life seems a successive round of dull, monotonous days.

That state of mind does often not occur when the boy or girl has the companionship of a faithful, loving, willing pony. Then there is something to care for; something that appeals to the affections; something that arouses interest; something that contributes to the little owner's pleasure and, best of all, something that can be used in any number of ways to turn work into play.

A Shetland pony, too, does not mean a great expense to begin with and, on a farm the expense of keeping one is hardly worth considering. Indeed, the

the winter time they developed into sloop-rumped, ewe-necked, cow-hocked ponies. Here in this country under generous feeding and a continued selection of the best formed ponies for breeding purposes the type has undergone a complete metamorphosis and many of the best specimens compare favorably in conformation with the best specimens of the light breeds of the larger horses.

With this change in type the Shetland has retained his lovable disposition that makes him the ideal pony for the young children. Viciousness seems to be absolutely foreign to his nature, although it must not be inferred that abuse and ill treatment will not eventually cause one of the little fellows to try to defend themselves. Naturally, however, a Shetland is the very personification of good nature and except in widely isolated cases, his loveliness will protect him from the ill-treatment that might change his disposition.

Breeding Shetlands on a small scale is best done by permitting the stallion and mares to run in the pasture together, and it is preferable to have the little mothers foal in the pasture after the weather becomes warm, say from May on. Under such conditions any trouble is seldom met with. The foals should be weaned at about the same age as other colts, five months being about right.

The Cash Returns.

Many boys, and not a few girls have found raising Shetlands a source of deep interest and considerable profit. The prices for Shetlands vary accord-

ing to the location of their breeder, the strains of blood which they represent and the methods which are followed in making them ready for market. Many breeders, especially those who raise only two or three foals each year, sell the colts soon after weaning time. They are quite in demand for Christmas presents at that age and where one is just breeding to sell for children's use, or making no pretention of developing show qualities, that is a good time to sell. Prices for Shetlands of that age in sections of the country adjacent to cities will range from \$50 to \$75 according to sex and quality, filly foals always bringing more than colt foals.

Ponies kept until two or three years old and thoroughly broken for children's use bring from \$125 to \$200, according to the quality of the pony. These values are for just real good, well-broken, well-mannered Shetlands. Ponies in which action and other show qualifications are highly developed bring a great deal more money, but that phase of the pony business is properly that of the expert show man and has no place when speaking of the pony business as a side issue on the farm or as a method of adding to the attractiveness of the farm for boys or girls.

Training Ponies a Child's Job.

The task of breaking Shetlands to drive or ride is not at all difficult, in fact, it is really a child's job and the

HOW TO HAVE GOOD COWS.

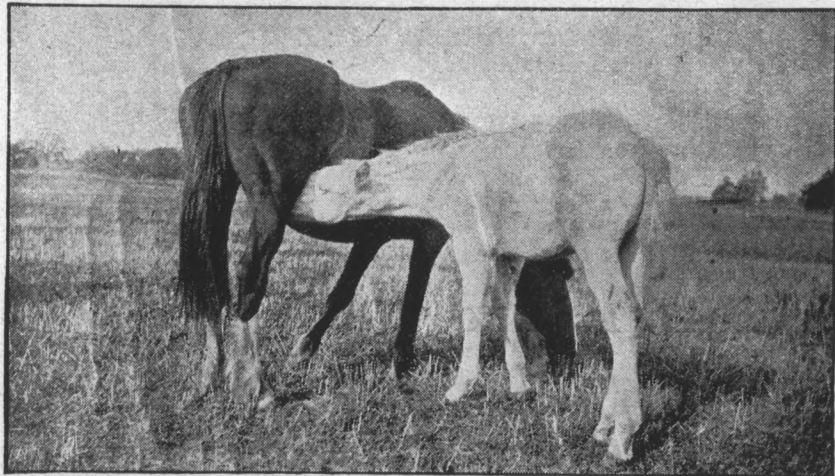
I do not claim to know how better than anybody else. I wish I did. There has been considerable talk about raising more heifer calves for the dairy. To accomplish this purpose it is suggested that something should be done by congress. The opinion is becoming prevalent that congress can do everything desirable—make money plentiful for farmers, provide labor for the unemployed, settle strikes, abolish trusts, and lower the cost of living. The fact is the people must depend mainly on themselves. They are the architects of their own fortunes.

The Bob-veal Law.

Please pardon this prelude. There was a bill before congress forbidding the shipment of calves under six weeks old, unless accompanied by their mothers, the object being to stop the sale of bob-veal. The limit of six weeks was wrong. Nobody refuses to eat the flesh of calves four weeks old. Forbidding the sale of bob-veal for food is all right, but the shipment of calves three days old to be raised, should not be prohibited. The writer has bought calves three days old to raise, and was glad to get them by rail, or any other way.

We raised all our heifer calves until they became milkers. The best were retained for our own dairy, the others sold.

It is not an easy matter to get good



A Pure White Colt is a Rare Novelty in Horse Breeding.

average boy or girl gets more enjoyment out of learning their little pets to go kindly in harness and under saddle than they would get in almost any other way. The absolute lack of any vicious traits in Shetlands and the love of companionship makes breaking them almost entirely a work of learning them what is wanted of them without doing anything to destroy the confidence they have in their teacher.

There is in Oberlin College a girl just completing her education who has paid the expenses of her college course from the money received for the foals of a couple of Shetland mares and there are many other similar instances which could be mentioned showing the practical value which can be made of these little matrons on the farm.

It would hardly be just to claim that every boy or girl born and raised on the farm could be influenced to make farming their life-work because of conditions making life on the farm pleasant during their early years, indeed, that would not be desirable; but it is beyond contradiction that many boys and girls are driven to a hatred of the farm and farm work, because of a failure to make life on the farm something more than a round of routine drudgery during the early period in their lives when impressions formed are hard to obliterate, who, under different surroundings, might have developed a love for the vocation they go away from the farm with such a pronounced dislike for.

And among the several factors in evading this lamentable outcome few exert a more immediate or more pronounced effect than the loving, companionable, serviceable Shetland pony.

milkers by purchase. Pure-bred cows of the dairy breeds are plentiful, but the cows that fill the pail, whether native, or improved, are not for sale. Their owners are wise and hold on to them. A friend who followed dairying in the state of New York for forty years and kept 45 cows, said he had bought all his cows, never raised any, had his pick out of carlots, and never had got one better than common, and many not so good as that.

Good Cows Hard to Get.

Dairy writers, and cow-testing associations, are constantly saying: "You are keeping cows at a loss. Weed out the robber cows, and send them to the butcher. Keep only the deep milkers." Talk is cheap. Where are all the good cows we need for the dairies, to come from?

One man recently wrote: "Dairy-men throughout this section seem to find it more profitable to veal their heifer calves than to raise them and risk the getting of only one good cow out of three calves." He is entirely too liberal, or else considers a cow good which his neighbors consider only ordinary, or common. I raised the calves from the best cows I ever owned, and never got a cow equal to her mother, and generally not more than one out of three that was better than common. Do you say the fault was in the bull? I had a registered Holstein-Friesian bull. This talk is rather discouraging, but in my opinion the only way to obtain good cows is to raise them. To breed only from the best and persevere in well doing. Breeding only from the best constantly, is the way the dairy breeds were established. Penn.

J. W. INGHAM.

Increased Returns From Your Farm

DO you know that game birds—grouse, quail, pheasants, wild turkeys and wild ducks—can be raised with little more trouble and expense than domestic birds and that they bring a much greater return? For some time the demand for birds has far exceeded the supply. As a result prices have been good. For instance, pheasant eggs have been selling at from \$25. to \$30. a hundred while the birds themselves bring from \$5. to \$7. a pair.

If you wish to raise game birds in connection with your poultry it is not necessary to buy birds though it is preferable to do so. You can buy eggs and hatch them with hens.

Game birds do not require the use of great tracts of well cleared or tillable lands but flourish on brush land, which you may have considered useless. They will make even your poorest land pay.

If you have land enough the birds you raise will afford you and your friends good sport in hunting or they will prove a certain source of revenue from sportsmen who will pay you to raise birds for them to shoot.

The booklet, "Game Farming for Profit and Pleasure", will give you valuable information on the raising of game birds. It is sent free to those who ask for it. Write for your copy today. Please use the coupon below.

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HERCULES POWDER CO.
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Game Breeding Department, Room 207
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THE FARM DOG.

Despite the fact that dogs cause the sheep industry serious losses it looks as if the farm dog had come to stay. That being the case it is good business to buy a pure-bred dog as a dog of good breeding will have inborn qualities which can never be coaxed or beaten into a mongrel cur. It is the stray dog of no particular breed which more often attacks the flock of sheep. A well-bred dog is more easily trained to stay at home, and they are cleaner and more attractive in every way.

Probably the most popular dogs today are the Scotch Collie and the Aire-dale. The Collie has been the ideal farm dog for many years. They are strong fearless animals and excellent for driving stock when properly trained. An untrained dog of any breed should never be allowed around the cows as they will cause confusion in the herd and reduce the flow of milk. A fine Collie can now be purchased for a price as low as \$5, although the specimens of extra fine breeding often bring prices of \$50 to \$100 and more. Many farmers who are raising Collies find them very profitable. The Aire-dale has come into prominence in recent years. They are a homely dog and smaller than the Scotch Collie but possess an unusual amount of intelligence. They are reliable watch dogs and especially desirable for watching poultry. There are too many breeds of dogs to make their discussion possible in this brief article, but one point might be emphasized. Buy a pure-bred dog of a breed which is in general demand, such as the Collie or the Aire-dale, and they will give much better service in every way and there will be a greater demand for the pups.

Dogs will consume all kinds of table scraps except fruit and salads, and when the family is large there is little expense for the dog's feed. Potatoes are good when fed with other scraps, and rice is excellent. Feed plenty of milk and some meat, but too much meat must be avoided, especially in hot weather. Bread and milk are safe and healthy and the dog will thrive on such a diet. Over-feeding must be avoided but it is not difficult to keep the farm dog in good condition if he is given plenty of exercise which he will usually take of his own accord, allowed a clean place to sleep, and prevented from leaving the home farm to inspect the neighbor's premises or wander with stray dogs.

The flea has always been considered as belonging to a dog, but fleas are unnecessary. They breed in dust and dirt and not on clean dogs. In selecting a dog for the farm it is best to purchase a young dog and train it carefully to watch the house at night, keep hawks and crows away from the poultry yard and drive strange dogs from the premises. A well trained dog has a place on a well managed farm but a worthless cur is an abomination.

Ingham Co. R. G. KIRBY.

THE COST OF MILK.

(Continued from page 348).

quires the painstaking attention of the owner who should be compensated for the mental energy and time expended in this direction.

When these charges, together with such incidental expenses as are properly chargeable to this department of the farm business are added to the actual feed cost per cow, the dairyman will doubtless find that the authentic figures published in the article above mentioned and available from other sources represent more nearly the actual cost and compensatory price of his product than do Mr. Oliver's figures as above presented.

In making comparisons of this kind, allowance should also be made for the slightly greater cost of milk production in the east as compared with the locations to which Mr. Oliver refers. Feeds are more costly near large centers of consumption. Average land

values are, generally speaking, higher in the east than in the dairying sections of the middle west, and other items, including labor cost, would perhaps be somewhat greater.

"Authentic Figures" for Michigan.

We have, however, considerable authentic data taken in our own state by representatives of the Michigan Agricultural College in two different counties which are included in the following table giving the authentic figures on the cost of milk in ten different demonstrations in the United States which were conducted under state supervision:

Cost of Producing Milk in Ten Different Experiments in United States. Each under State Supervision.

Lynderboro, N. H., cow-test assn. \$1.93
Massachusetts Exp. Station.....2.42
Storrs Agricultural Exp. Station, Connecticut.....2.12
New Jersey Experiment Station.. 1.94
Delaware Co., N. Y., 1912.....2.35
Delaware Co., N. Y., 1913.....2.03
Kent Co., Michigan, 1914.....1.67
Kent Co., Michigan, 1915.....1.58
Livingston Co., Michigan March, 1916.....1.83
Livingston Co., Michigan, April, 1916.....1.85

Average cost per 100 milk for ten experiments\$1.97 1-5

It will be noted that Michigan costs are somewhat lower than eastern costs, largely for the reasons above cited. It will, however, be noted in these demonstrations that in the case of the last two demonstrations conducted in Livingston county, Michigan, with 25 herds of high-class dairy cattle, the average cost of milk for the two months was \$1.84 per hundred, or approximately 3.7 cents per quart, while the average selling price was \$1.48 per hundred, or less than three cents a quart.

In this discussion of market milk, the butter-producing dairyman should consider the fact that the cost of producing market milk is quite materially increased by the requirements of the market in which the milk is sold, which seek to insure a high class, wholesome product produced under the most wholesome and sanitary conditions. Yet when every allowance is made, the dairyman who sells his butter-fat to the creamery or manufactures butter on his own account has not on the average, been receiving a price for his product which would make the dairy show a respectable profit when considered as a separate factor of the farm business. For this reason every dairyman in Michigan should identify himself with the Michigan Milk Producers' Association and give his support to the campaign now in progress to secure for the dairymen of the state a compensatory price for their product.

ANNUAL MEETING OF MICHIGAN MILK PRODUCERS' ASSN.

The first annual meeting of the Michigan Milk Producers' Association will be held at the Agricultural Building, M. A. C., Tuesday, October 17, commencing at 10:30 a. m. Mr. Kittle, Manager of the Chicago Milk Producers' Association, is expected to be present to give an address.

We are now waging a great campaign to raise the price being paid to dairymen for their milk, and we need the co-operation of every person in Michigan to help us accomplish desired results. A rousing meeting the seventeenth will do a great deal to prove that the dairymen are in dead earnest and that they purpose to stand together in their just effort to obtain a price for their milk that will pay for the cost of production.

We trust that you will let nothing prevent your attending this meeting in the interest of the great industry of dairying.

'N. P. HULL, Pres.
S. H. MUNSELL, Sec.

"I am sold out of Collie pups and getting so many enquiries that I would like to have the ad. taken out this week if possible. I will send new copy in a few days for a poultry ad."—O. E. Holly, Ludington, Mich.



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as comfortable as shoes can be
"for the man who works"

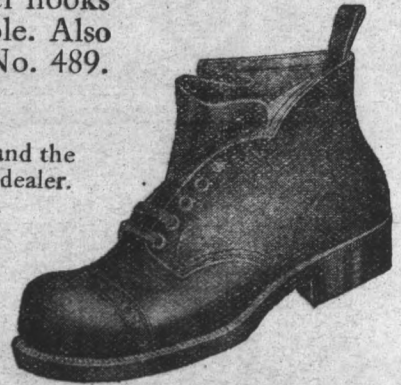
THERE is room in every pair of Rouge Rex Shoes for every toe of a workingman's feet. Generously proportioned lasts make Rouge Rex Shoes most comfortable for work wear.

Rouge Rex Shoes are strong and stout and neat in appearance at the same time. Your money will last longer in Rouge Rex Shoes than in any other shoes anywhere near the same price because the materials are as good as can be had.

The shoe shown here is No. 487. An ideal work shoe made of our own tannage of special kip stock, heavy, tough, durable, but pliable and comfortable. Double thickness over toe, full bellows tongue, nickel hooks and eyelets, heavy nailed sole. Also made in tan under stock No. 489. See it at your dealer's.

Write us for further information and the name of your nearest Rouge Rex dealer.

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Farms and Farm Lands For Sale

Great River Farm Bargain
200 Acres; 50 Head Holstein Stock

This farm is located on the macadam road, 5 miles from Court House, Binghamton, N. Y., where there are the best of markets and one of the finest farms in Broome County. 150 acres of this land is tillable and very productive. If you see the crops that were raised this year you will agree with me. Fine set of buildings: large basement barn, painted red, 12 room house, painted and in fine condition; hog house, hen house and all out-buildings in good condition. Water comes from a never failing driven well with gasoline engine to pump same to buildings; large silo nearly full of corn. There is about every farming tool you can mention to run the place with; barns are full of hay and about 20 tons in stack; has 32 hogs and pigs, about 50 hens. The stock on this place is all high grade Holstein and one thoroughbred Holstein bull. This is one of the best equipped farms we have had in some time. The present owner paid for this farm in a short time and on account of poor health is forced to sell and will include everything for \$15,000, on reasonable terms, balance mortgage. Come and see us, we have over 300 farms to select from. Hiram Mintz, 216 Phelps Bldg. Binghamton, N. Y.

\$1000 Down Secures 440 Acre Farm,
17 Cows, Pr. Horses, Crops.

And bull, hog, hens, engine, tools, wagons, cream separator, harnesses, 20 eds. dry wood, 40 tons hay, straw, and in fine condition; hog house, hen house and other vegetables, all included by owner retiring to small place who desires immediate sale. Cream collected at door, skim milk fed hogs; estimated 3000 eds. wood, 2000 sugar maple trees, 7 1/2 m house with cellar, large barn with cellar, milk house and hen house. Everything in A-1 condition. \$3900 with \$1000 down and easy terms takes all. For details see page 5. "Strout's Peace and Plenty Catalogue," just out, copy free; filled with farm bargains in a dozen states. E. A. Strout Farm Agency, Dept. 101, 160 Nassau St., New York.

Hickory Grove Farm \$35 per acre. Near village, R. R. and creamery. 177 acres, 30 timber, 75 acres in fields; balance spring-watered pasture; tillable. Good ten-room house with furnace, telephone, Spring water piped to kitchen. Large lawn, fine shade, large barn, cement floor silo, cool running water. Abundant outbuildings. Never rented. 75 fruited trees. Out 40 tons hay. Will care for 35 head stock. A money maker. Sell with or without stock, crops and tools. J. A. CONVERSE, Owner, Alba, Pa.

160 Acres, level clay loam, no waste, pastured, ure with creek, timber, modern dwelling, basement barn, good repair, \$70.00 acre, terms. Gleason, The Farm Man, Greenville, Mich

Fine Dairy Farm For Sale—160 acres, cultivated, close to city in Michigan, stone roads, school, etc. Modern Dairy barn equipped with milking machine, cows, horses and other farm stock. Farm tools and equipment. Three houses, milk house, barns, sheds, etc. Milk routes and wagons. Price and terms reasonable, rare bargain. Address Box-5187, In Care Michigan Farmer.

New Land,
In Gladwin and Midland Counties, Michigan. Well located. Low prices and easy terms. Steffied Bros (owners), 15 Merrill Bldg., Saginaw, (westside), Mich

FOR SALE
Farm of 65 acres in good first-class condition; 9 room house, fine banked barn, good hog house, fruit of all kinds, land very productive. Two miles north of Cassopolis, Mich. C. H. EICH, Owner, 240 North Menard Ave. Chicago, Ill.

NORTH FLORIDA FARMS
For rent or sale. Actually cooler and healthier in Summer and warmer in Winter. Send for county booklets. S. A. Kidder, Monticello, Fla., now at Interurban Hotel, Detroit, Michigan.

THIS FARM
235 acres near Mt. Clemens at \$75 per acre, terms \$6000 down, bal. with int. at 5%. This is fine property. C. H. Wright, 658 2nd Avenue, Detroit, Michigan.

THREE Grain and Stock Farms. Good Land, good buildings, cows, horses, sheep, hogs, machinery, \$25 acre, including stock. Write me. Shahan, Port Henry, N. Y.

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LITERATURE
POETRY
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INFORMATION

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AND *LIVE STOCK*
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ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper every week. Every article is written especially for it, and does not appear elsewhere

Agricultural Progress as Shown by School Children

By M. A. COBB

NINETY more silos and one hundred more acres of alfalfa in Sauk county, Wisconsin, in 1914 than in 1913 and a 1,100 per cent increase in alfalfa acreage in one township of the county are some of the significant results of an agricultural census of the county taken by the school children.

Valuable because they have not only shown the progress of the county but also taken the census of other crops and even pianos and autos. Striking

because the work has been done by the country school children.

The children have gone out as full fledged census takers under the direction of the teachers and the county superintendent of schools, Mr. G. W. Daws, with the co-operation of the College of Agriculture at Madison. The census, or survey, as they call it, has been taken for the past two years.

They have pried into the private af-

fairs of the people and report that there are 404 autos owned by the farmers, 18 electric and 78 gas lighted houses, 227 bath rooms, 270 kitchens supplied with running water, and 635 homes supplied with pianos. Thus the development of the rural section is shown.

That such information may raise the value of the land is shown in a Missouri county where a similar census

showed so high yields of crops and an advancement of the people that the real estate men placed a higher value on the property. It is certainly worth more to live in such a community.

But these children in Sauka county have done more than take a census of the region. They have made a map of their school districts showing their boundaries and located farm homes, public buildings, creameries, mills, roads, river—in short, made a complete map of the region. Thus they

WORLD EVENTS IN PICTURES



Eight-foot Ballot for Troops at Border to Use in Voting.



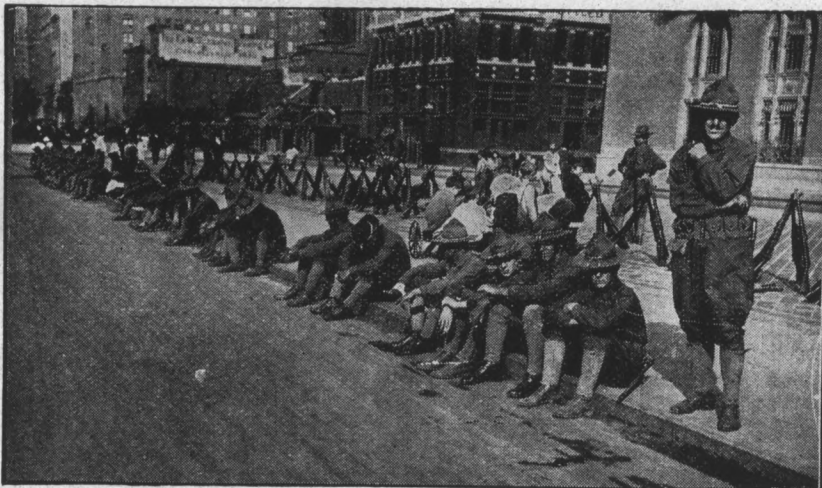
Czar of Russia and King of Roumania in Conference.



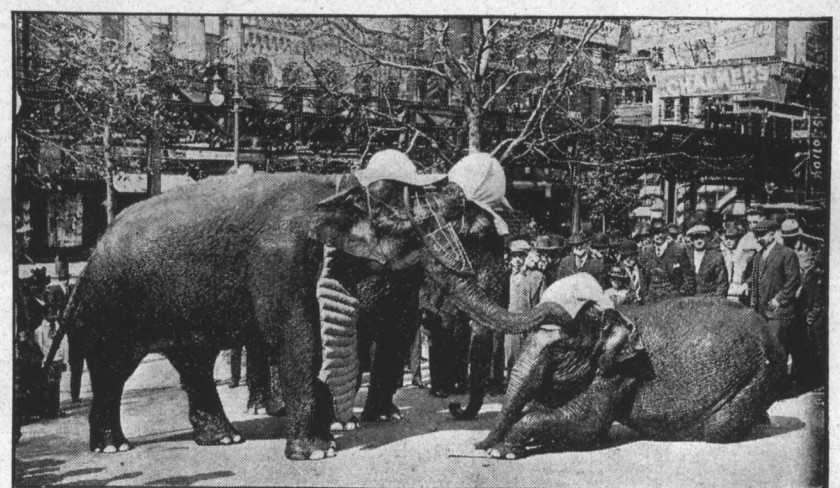
Starts Bureau to Help Ex-convicts Secure Good Jobs.



Signing Bill Giving Women Right to Practice Law in Georgia.



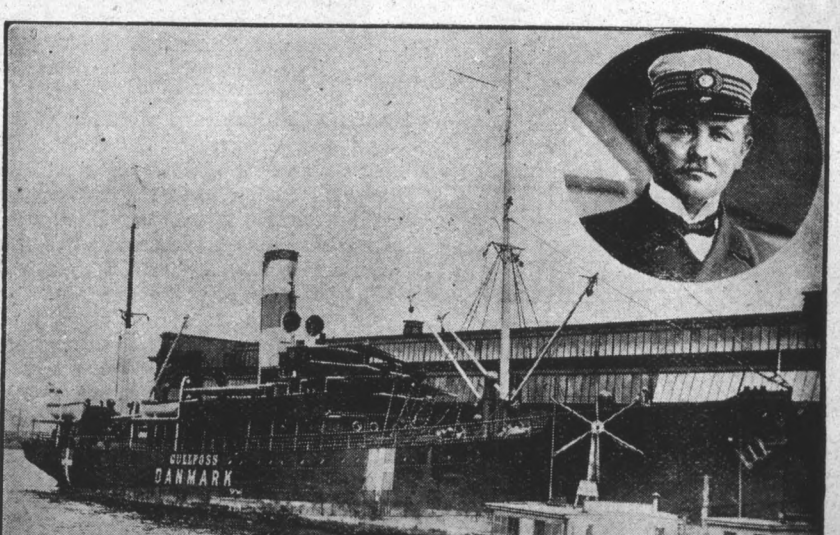
New York Regiment Returns Home to Assist in Handling Strike Situation.



Ball-playing Elephants Photographed as the Catcher Tags a Runner Out.



Chief Carranza Shows Mexican Students how to Shoot.



Boat from Iceland Inaugurates Service Between that Country and the U. S.

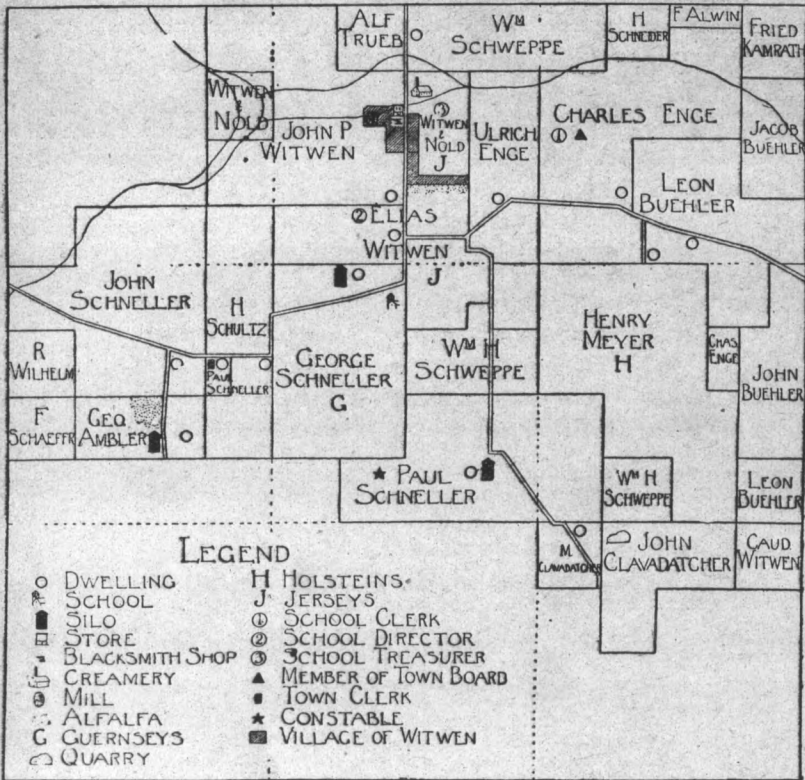
have received the best geography lesson of their lives. The terms scale, section, range, base line and meridian now mean something to them. The making of such a map will give them ability to interpret a larger map.

The children worked out the history of the district by determining the first settlers, where they came from and where they settled, the first buildings erected, etc. The collection of such

herds of pure-bred stock. This may be only a coincidence, and it may be a significant fact.

A portion of the report for 1913-14 is as follows: Twenty-four creameries; 29 cheese factories; 39 Babcock testers in the schools, 530 silos; 830 acres of alfalfa; 391 rented farms, and 92 herds of pure-bred cattle.

That the children get other things than figures from the "survey" is



Social Map of a Country School District.—The data for this chart was collected by a pupil in the District. What more effective means of teaching geography, history, arithmetic and civics could be devised than the making of a survey which intimately acquaints the child with his whole community?

data is true history and its preservation may prove to be of real value in the future.

These children found from their survey that the township leading in the good roads movement stands first in rural organizations and also excels in acreage of alfalfa and the number of

MEDITATION STUMP.

BY CLYDE REDINGER.

I'd jes like tu have my say
'Bout where I ud rather lay
Tu wait for Gabriel's trumpet blast
When this, my stay on earth, is past.
I wouldn't choose a graveyard bare
Where most of other folkses air;
Where spookey stones and solemn
pines
Makes you shudder, Ugh, not fer mine.

I wouldn't choose old ocean's bed,
With bones beneath and sharks o'er
head;
Where crabs and fish could crawl and
swim

All round, and say, "Ah, look at him."
No, there's jest one place fer me,
That is, where I'd ruther be,
Hain't no use o' hopin, tho'
Fer 'twould shock 'em all I know.

I'd ruther be in Jackson's wood
At the foot o' where the old oak stood.
I never saw the tree, but then
I love the stump there where its been.
How many happy hours I've spent
On meditation stump; content
Jest tu laze and look around
On that sunny hillside's crown.

There in spring the flowers grow
Sometimes 'fore it's clear of snow,
And birds sing sweetly all day long
And chipmunks chant their chirping
song.

In that leaning hickory tree
The squirrels play in highest glee;
There the hawk's sky tower is,
Where they watch that swoop o' his.

Down below is Jackson's pond,
A frog to every swaying wand,
And when they hit 'er, up and play
And the Redwing's song joins in
Adding to the merry din
Seems like no place e're was so gay.
Jest like we youngsters ust to play
On a spring vacation day.

Yes, that's where I'd ruther be,
Under the stump of the old oak tree.
Let its roots reach round me, too
Jest like these uns ust to do.
Oh, Gabriel's horn will ring as clear
In Jackson's woods as anywhere
And I could sleep as peaceful, too,
Ez the chipmunk sleeps the winter
through.

shown by the following experience of a teacher:

"Teacher, what is the matter with this tree, I found it while counting the apple trees? The tree is dying." The eager boy thrust a branch into my hands. Thanks to my previous training, I was able to recognize the trouble at a glance.

"There are hundreds of insects sucking the juices from the branch," replied the teacher.

"Where?" came a chorus of eager voices. Then I told the story of the San Jose scale, how it kills the trees and finally how to stop it, etc.

"I am going home and tell Pa." "I am going home to see if our trees have any 'bugs' on 'em," and the children hurried out of the school-room—they had had a lesson they would never forget.

Dean Russel, of the University of Wisconsin, says of this work: "Herein lies one of the great values to be found in agriculture as a subject of study in that it serves so well to unite the school to its rural environment. The teacher who can vitalize the customary subjects of instruction, who can render the abstract conceptions of mathematics, history, and geography into the concrete form of daily experience and knowledge is able to wield an influence over the lives of her pupils that will be abiding."

STORING OF ICE IN AUSTRIA.

Among the various methods of storing ice in the winter for use in summer is a very simple one mentioned in an Austrian gazette, as practiced quite commonly in that country. A place is selected, protected toward the west and north, if possible, by a building, or even under the shade of thick trees, as it is from that quarter that the ice is most exposed to atmospheric influences. A spot with porous soil is preferable; and if that can not be had a platform is to be erected over a shallow pit, into which the melting water can drain. The ice is to be piled up in the form of a large cone, layer by layer; first constructing a circular wall of ice about twenty feet in diameter, to serve as the base of the cone. The interior of this circle is to be fill-

ed up to the level of the top of the ice-wall with ice broken into small pieces. This whole stratum is then to be wet with water, and allowed to freeze into a solid mass. A second circle is then constructed, a little smaller than the first, and the space within filled up with pieces of ice, and water poured on and allowed to freeze as before; and this process is repeated until a truncated cone of about fifteen feet in height is erected. The whole is to be deluged again with water, and then covered with a stratum of straw which is also to be wet and allowed to freeze, thus forming a stiff covering. The entire cone is to be covered then, to the depth of nine to fifteen inches, with a layer of sod or moss, of which a supply should be cut beforehand, ready to be put on.

The earth should be heaped up around the base to a height of three or four feet, as the melting generally takes place from the bottom and from the western side. When using the ice it must be taken from the top, and the opening filled up again with moss. It is well to have a roof so as to turn off the rain water.

Indiana. ALONZO RICE.

AN INTELLIGENT HORSE.

I read with much interest Mr. Motes' article in The Farmer regarding the unusual intelligence often displayed by birds and animals. I, too, have often noted such displays of animal intelligence and thinking power. One case in particular I think is worth mentioning; that was an old horse which belonged to a neighbor of ours when I was a boy.

I have seen this horse pick at the latch of a gate with his teeth until he succeeded in opening it. One time when he and his mate were turned loose on the road he stopped at our pasture gate, which was a set of bars, and taking the top bar in his teeth he pulled it endwise until the opposite end dropped onto the ground; this operation he repeated until three or four of the bars were down, and then he marched triumphantly into pasture.

The most remarkable piece of intelligence that I ever saw displayed by an animal was indulged in by this same horse. It was during haying time. My father had hired Mr. Potter and his team, which included this horse. The owner was driving the team on the mower and had stopped at the end of the field to go for a drink of water. I noticed old Charley trying to get a mouthful of hay, but he was reined up too high. When he found that his efforts were fruitless he began pawing with his front foot, reaching out in every direction as far as he could. After he had pulled together a good armful in front of him he gathered it in his front leg as a man would his arm and in this manner he lifted it high enough to eat from it.

I called the attention of the crew to what the horse was doing, and one of them remarked, "That horse knows as much as some men," which was no joke.

G. F. DE LA MATER.

SEASONABLE GAMES.

BY LULU PARKER.

Cat Contest.

This cat contest was used in the interval between more strenuous games at a Halloween Party. Papers and pencils were passed and the guest who guessed the most "cats" was given a little papermache candy-box cat from the ten-cent store.

What cat had a bad accident—cat-astrophe.

Roman cats—Catacombs.

The cat that the birds fear—cata-pault.

A spicy cat—catsup.

A cat found in some churchyards—cathedral.

Cats that chew their cuds—cattle.

The cat that can cook—caterer.

The cat that is a society butterfly—caterpillar.

The cat that asks questions—cate-chism.

A water cat—catfish.

The cat that lives in a grove—cata-pa tree.

The cat that lives in a vineyard—catawba grape.

A summer resort cat—Catskill Mountains.

A cat that punishes culprits—cat-o-nine-tails.

Corn Guesser for the Harvest Party. These are nine varieties of corn:

A feminine variety—Cornelia.

A masculine variety—Cornelius.

A fabulous animal—unicorn.

A sign of plenty—cornucopia.

Found at one of the earth's circles—Capricorn.

A sight-seeing variety—cornea.

Jack Horner's favorite—corner.

A musical variety—cornet.

More ornamental than useful—cornice.

The squirrel's favorite—acorn.

A COUNTRY PROPOSAL.

BY MRS. ELMER LEWIS.



You need'ent hang your pretty head,
'Cause I said I love's you true.
And let your cheeks get rosy red
I mean it, 'es I do.

I's going to buy a little farm
And build a bungalow
And then I'll take you by the arm
Into my cottage new.

So lift your pretty eyes to mine
And do not be so shy
We'll find a sand pile right away
And practice making pie.

AUTUMN.

BY ALONZO RICE.

A flock of geese along the lane,
That stir the dust to sudden storm;
Along the west the sign of rain,
A gust of wind from meadows warm.

These usher in the cheerless morn,
Accompanied by the sadder sounds
Of hunter winding far his horn,
The echoes of the baying hounds.

Sunflowers fire their deadened flame,
And partridges begin to drum;
The crickets in the grass proclaim
The autumn of the year has come.

The fields of buckwheat for the bees,
Like ocean waves around the hill,
Unruffled by the faintest breeze,
Stretch far away serene and still.

Of ripened apples, few are left,
And to deceive; the hollow-billed
Woodpecker in a silent theft,
The pulpy core has deftly drilled.

These fall untouched in silent noon,
And hidden in the russet grass,
Afford to swarming flies a boon,
Or vagrant wasps that chance to pass.

From secret springs the river draws
Its wealth to feed its failing source;
Refreshing all the seams and flaws,
Like burning lips along its course.

The water rats are at their task,
Each cuts his shelf with eager teeth;
The grass reveals the cunning mask
The swimmer wears that lives be-neath.

The woodwall sings, the lorn doves coo
The hilly pathway scarred with
tracks,
Skirts russet meadows onward to
Where swallows sail with sunny
backs.

And there where wains full-loaded
through
The gate have passed the sweet kine
stand;
The clinging wisps of hay they chew,
And wait the milkmaid's pail and
hand.

The Flood

By ZONA GALE

It's "brother" now and it's "brother" then,
 And it's "brother" another day,
 And it's "brother" whenever a loud
 doom sounds
 With a terrible toll to pay.
 But what of the silent dooms they bear
 In an inoffensive way?

It's "brother" here and it's "brother" there,
 And it's "brother" once in a while,
 And it's "brother" whenever an hour
 hangs black
 On the face of the common dial.
 But what of the days that stretch be-
 tween
 For the march of the rank and file?

I DON'T know how well you know
 villages, but I hope you know any-
 how one, because if you don't
 they's things to life that you don't
 know yet. Nice things.

I was thinking of that the Monday
 morning that all Friendship Village re-
 members still. I was walking down
 Daphne street pretty early, seeing ev-
 erybody's breakfast fire smoke coming
 out of the kitchen chimney and hear-
 ing everybody's little boy splitting the
 wood and whistling out in the chip
 pile, and smelling everybody's fried
 mush and warmed-up potatoes and
 griddle cakes come floating out sort of
 homely and old-fashioned and comfort-
 able, from the kitchen cook-stoves.

"Look at the Family," I says to my-
 self, "sitting down to breakfast, all up
 and down the street."

And when the engine-house clock
 struck seven, and the whistle over to
 the brick-yard blew little and peepy
 and like it wasn't sure it was seven
 but it thought so, and the big whistle
 up to the round-house blew strong and
 hoarse and like it knew it all and
 could tell you more about the time of
 day than you'd ever guessed if it want-
 ed to, and the sun come shining down
 like the pouring out of some new
 thing that we'd never had before—I
 couldn't help drawing a long breath,
 just because Now was Now.

Down the walk a little ways I met
 Bitty Marshall. I wondered a little at
 seeing him on the street way up our
 end o' town. He'd lately opened a lit-
 tle grocery store down on the Flats,
 for the folks that lived down there.
 Him and his wife lived overhead, with
 a lace curtain to one of the front win-
 dows—though they was two front win-
 dows to the room. "I've always hank-
 ered for a pair o' lace curtains," she
 said to me when I went up to see her
 one day, "but when I'd get the money
 together to buy 'em, it seems like
 somethin' always come and et it up—
 medicine or school books or the chil-
 dren's shoes. So when we moved in
 here, I says I was goin' to have one
 lace curtain to one window if I board
 the other up!" And she had one to
 one window, and a green paper shade
 to the other.

"Well, Bitty," I says, "who's keep-
 ing store today? Your wife?"

But he didn't smile gay, like he usu-
 ally does. He looked just regular.

"Neither of us'll be doing it very
 long. I've got to close down."

"But I thought it was paying you
 nice?" I says.

"And so it was," says Bitty, "till
 Silas Sykes took a hand. He didn't
 have a mind to see me run no store
 down there and take away his trade
 from the Flats. He began undersellin'
 me—he's been runnin' everything off
 at cost till I can't hold out no longer."

"So that's what Silas Sykes has been
 slashin' down everything for, from
 prunes upwards," I says. "I might of
 known. I might of known."

"My interest is comin' due," says
 Bitty, movin' on; "I've come up this
 mornin' to see about going back to
 work in the brick-yard."

"Good land," I says sorrowful.
 "Good land. And Silas in the Council
 —and on the School Board—and an
 elder thrown in."

Betty grinned a little then.
 "It ain't new," he says over his

shoulder. And he went on up the
 street, holding his hands heavy, and
 kind of letting his feet fall instead of
 setting them down, like men walk that
 don't care, any more.

I understood what he meant when
 he said it wasn't new. There was Joe
 Betts that worked three years getting
 his strawberry bed going, and when
 he begun selling from the wagon in-
 stead of taking to Silas Sykes at the
 post office store, Silas got the council
 that hes in' to put up licenses, clear
 over Joe's head. And Ben Dole, he'd
 got a little machine and begun making
 cement blocks for folks's barns, and
 Timothy Toplady, that's interested in
 the cement works over to Red Barns,
 got Zachariah Roper, that's to the head
 of the Red Barns plant, to come over
 and buy Ben Dole's house and come
 up on his rent—two different times he
 done that. It wasn't new. But it all
 kind of baffled me. It seemed so legal
 that I couldn't put down my finger on
 what was the matter. Of course when
 a thing's legal, and you're anyways
 patriotic, you are some put to it to
 find a real good term to blame it with.
 I walked along, thinking about it, and
 feeling all baffled up as to what to do.
 But I hadn't gone ten steps when I
 thought of one thing I could do, to
 clear up my own i'dees if for nothing
 else. I turned around and called out
 after Bitty.

"Oh, Bitty," I says, "would you mind
 letting Silas know I know?"

He threw out his hands a little, and
 let 'em kind of set down side of him."

"Why sure not," he said, "but if you
 are thinking of saying anything to him
 —best spare the breath."

"We'll see about that," I thought,
 and I went on down Daphne street
 with a determination sitting up in the
 air just ahead of me, beginning to
 crook its finger at me to come along.

In a minute I come past Mis' Fire
 Chief Merriman's house. The chief
 has been dead several years, but we
 always keep calling her by his title,
 same as we call the vacant lot by the
 depot the Ellsworth House, though the
 Ellsworth House has been burned six
 years and it's real kind of confusing to
 strangers that we try to direct. I re-
 member one traveling man that head-
 ed right out towards the marsh and
 missed his train because some of us
 had told him to keep straight on till he
 turned the corner by the Ellsworth
 House, and he kept hunting for it and
 trusting in it till he struck the swamp.
 But you know how it is—you get to
 saying one thing, and you keep on ut-
 tering it after the thing is dead and
 gone and another has come in its
 place, and when somebody takes you
 up on it, like as not you'll tell him he
 ain't patriotic. It was the same with
 the fire chief. Dead though he was,
 we always give her his official title,
 because we'd got headed calling her
 that and hated to stop. She was out
 in her garden that morning, and I
 stood still when I caught sight of her
 tulips. They looked like the earth had
 broke open and let out a leak of
 what's inside it, never intending to
 show so much at once.

"Mis' Merriman," I says, "what tu-
 lips! Or," says I, flattering, "is it a
 bon-fire, with lumps in the flame?"

Mis' Merriman was bending over,
 setting out her peony bulbs, with her
 back to me. When I first spoke, she
 looked over her shoulder, and then she
 went right on setting them out, hard
 as she could dig. 'Glad you like some-
 thing that belongs to me," says she,
 her words kind of punched out in plac-
 es by the way she dug.

Then I remembered. Land, I'd for-
 got all about it. But at the last meet-
 ing of the Friendship Married Ladies'
 Cemetery Improvement Sodality—we
 don't work for just cemetery any more,
 but we got started calling it that twenty
 years back, and on we go under

(Continued on page 358).

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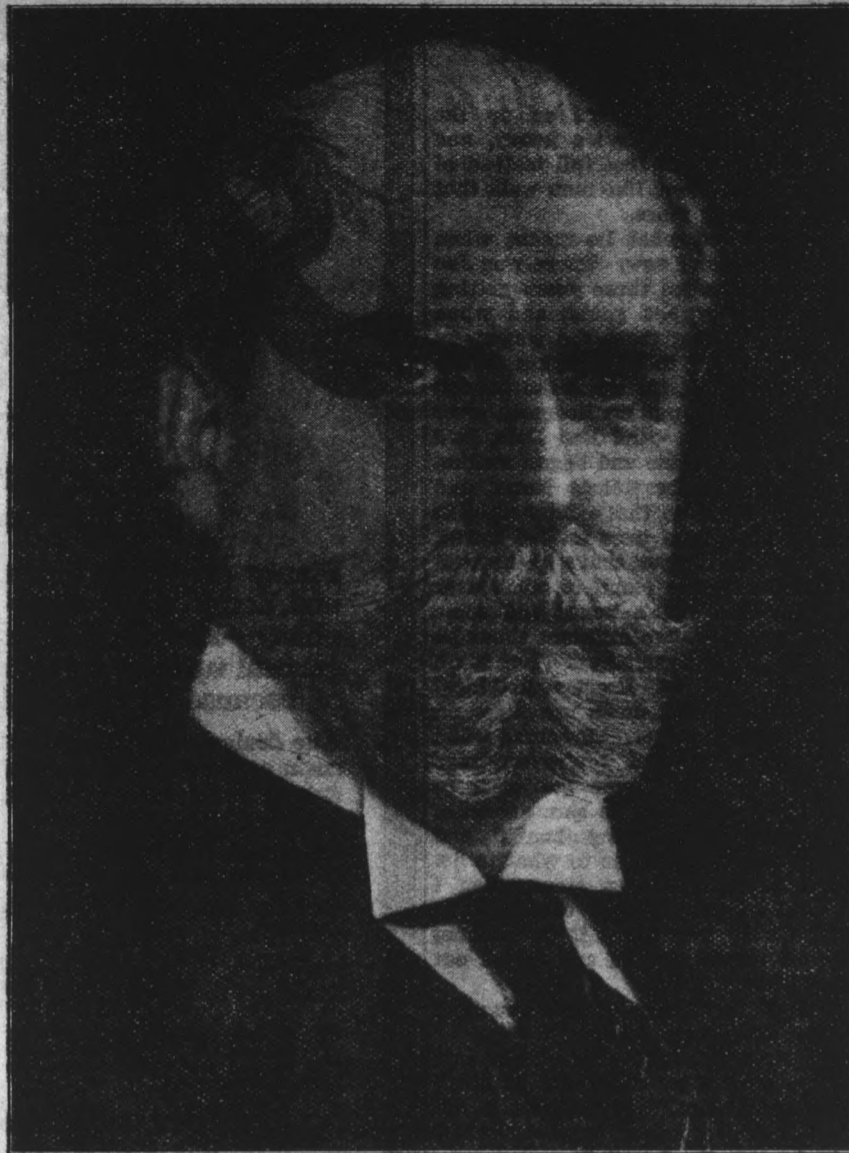
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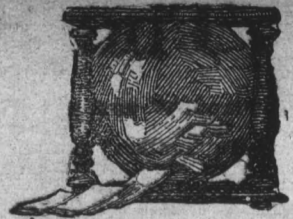


"I regard Mr. Hughes as a man whose public record is a guarantee that he will not merely stand for a platform of clean cut, straightout Americanism before election, but will resolutely and in good faith put it through if elected."

—Theodore Roosevelt



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"Mr. Hughes' strength before the people and the importance to them of his utterances and promises grow out of their confidence that he is not an opportunist, but that no political expediency will prevent his hewing to the line and fighting to the last for his principles."

—William H. Taft

THE LIFE-STORY of CHARLES E. HUGHES

BEGIN with the year 1905. Those were dark days in New York State.

The "House of Mirth" was more popular than the Executive mansion at Albany and the "Black Horse Cavalry" were in the saddle. The great insurance companies controlled the State Insurance Department as a matter of sacred right, the gas companies controlled the Gas Commission, the railroads controlled the Railroad Commission and the big public utility corporations ran amuck as they pleased, while they all combined to control the powers behind the Legislature.

These were the conditions when, by a happy chance, there came quietly but suddenly into the public life of the State the refreshing personality of one of the least known but ablest attorneys of his time, Charles E. Hughes.

Attacking the Gas Monopoly

A legislative committee went down to New York City to investigate the gas companies.

They needed as their attorney and chief investigator some effective lawyer who was not entangled with the far-reaching ramifications of the Wall Street powers. Most of the great lawyers were ineligible because they had followed the custom of the day in accepting "general retainers." Hughes, it seemed, never accepted such fees, a personal rule of conscience against easy money which had an unexpected reward.

The committee asked him to serve them. He accepted reluctantly for he disliked notoriety, and specified that he must have an absolutely free hand. Little knowing what was to come, they pledged themselves not to hamper him. Some of them were sorry afterwards, for Hughes led them at a tremendous pace into the innermost retreats of high privilege, mastering the most intricate arrays of figures and the most devious technicalities of the business with an intellectual grasp that amazed and terrified his opponents.

The Fight for Honest Insurance

When the insurance investigation came along a little later, Hughes was the logical man to conduct it. The whole world watched this fearless stranger as he plucked the dignity and mystery from towering figures in the financial and insurance world, and revealed them as nothing more than merry-makers with other people's money.

Sinister influences tried to stop him; they jerked his coat tails. "Don't open up that bank account," they whispered. "That is where our party campaign funds were kept." Whereupon that particular bank account became the special object of his most searching attention.

He put prominent Democrats on the stand first, and it was expected that he would follow the usual precedent of not disturbing the leaders of his own party. But that was not Hughes' way. The great Republican leaders got their turn in due time and were mercilessly exposed. You reap

the benefit of Hughes' brilliant work in that investigation, every time you pay a life insurance premium.

Secretly desiring to remove such a persistent investigator, they nominated him for Mayor of New York. He was not to be diverted from his uncompleted task. He waved the nomination aside and went on fearlessly and persistently until his great work was done.

A New Kind of Governor

The next year his party, torn by factions, sought a leader who would stand out above all factions and assure victory. A convention that would have preferred some one else, nominated him for Governor without his lifting a finger to get the nomination.

Then followed those inspiring four years of his Governorship, still remembered with a thrill by every upward-looking citizen of the State.

Exit Bossism

The party leaders came to him with the names of men whom they had selected to be his subordinates. The appointments required the consent of the Senate. They controlled the Senate. The Governor thanked them dryly for their kindness in doing his work for him—but he had already selected satisfactory appointees and the names would go to the Senate on the morrow. Patiently they explained as to a child, that things were not done that way in politics—that "the organization"

(Continued on next page.)

would be against him—and gradually, as the fruitless argument proceeded, they began to realize that here was a man who would cheerfully go down to defeat with all his colors flying, for a righteous cause.

Unafraid of Defeats

They did succeed in preventing, for the time being, the passage of his Direct Primary Bill, his Massachusetts Ballot Bill and his Short Ballot Amendment. He struggled hard for them, but he left office with this part of his work still unaccomplished. But the issues that bore his name would not die. Three years after he left office, both a real direct primary law and an office group ballot law were written into the statutes of the State, while all parties vied with each other in professions of devotion to the Short Ballot principle.

Yet there never was a time when Hughes could not have forced through his program of reform immediately by trading "patronage" for measures. There were the State employees in the Capitol, for instance, the stalwart political henchmen of one of Hughes' bitterest foes. A wave of Hughes' hand, the dismissal of one of these job holders with its implied threat toward the rest, and his opponent's machine would have collapsed! Yet Hughes would not stoop to such expedients, no matter how tempting was the objective. State employees learned that their jobs were safe, if they did their work, and unsafe if they didn't.

End of "Deals"

Neither would Hughes make deals with the legislators with bill for bill. If a champion of his big measures slipped through an improper little local bill, Hughes would veto it sharply. If a good bill came along originating with a legislative arch-enemy, Hughes would gladly sign it.

Taming the Utility Corporations

But to return to his record of achievements. His first big fight revealed new methods—new theories. He proposed the Public Service Commissions law, a law with real teeth in it.

Most of the States have such laws now but it was a new and radical thing in those days when the public utility corporations were accustomed to doing about as they pleased. The legislature soon showed that it had no idea of taking the bill seriously.

Hughes then undertook one of his famous "appeals to the people." He began to accept invitations to speak in various parts of the State, and he spoke always on this one topic. The State began to think and then to talk. Hughes did not call his opponents bad names or impugn their motives. But letters began to pour into Albany asking representatives where they stood. The opposition changed from contempt to alarm. Soon they were saying that of course they approved the bill—with modifications. Finally the fight centered on the modifications—adroit tricks to get the teeth out of the law, but in the end, Hughes won completely.

Great Days for Labor

There was another great battle over the law for Workmen's Compensation for industrial accidents. It was a new idea then and much harder to put through than it would be today. This law, too, had teeth in it—Hughes saw to that. It made the employer in certain trades liable for the accidents that happened to his employees, regardless of the old doctrines of "assumption of risk" and "contributory negligence," so that injured employees could recover damages without a law suit. It was the pioneer compulsory law and formed the basis for all such subsequent legislation in America.

Hughes acquired great strength with Labor by this piece of work and by the rest of the fifty-six labor laws that he helped to put through.

"He was a great governor," said the organ of the State Federation of Labor, regretfully, when his term ended and credited to his brief four years one-third of all New York's labor legislation!

The Big Race Track Gambling Fight

Then there was the fierce battle for ending race track gambling. The great race tracks had become huge living roulette wheels with their inevitable train of defalcations, suicides and demoralized lives. Hughes showed up these glittering and picturesque affairs in their true and sordid light, converted the State to his way of thinking and jammed reform through in the face of powerful and sinister opposition.

General Interest Above Special Interests

When he ran for the Governorship the second time, it was calculated that he had affronted no less than fourteen great special interests any one of which would have made an ordinary Governor hold his hand for the sake of his political future. But committing political suicide seemed a favorite amusement with this fearless executive who put his faith in the people and waited for them to come slowly but surely rallying to his support.

How "His Soul Went Marching On"

So the name of Hughes became a thing to conjure with in New York politics for years after he left the State to take his place on the Supreme Court. To have been a "Hughes man" has been an asset ever since. To say "Hughes favored this measure" gave it standing. Republicans, Democrats and Progressives have used the name of Hughes to win support for men and measures.

The State administration still feels the impetus he gave, the new life and vitality which he injected into humdrum departments. He brought into office a great group of the strongest and most expert administrators that ever served the State.

He was keenly aware that passing a good law was not enough if the enforcement of the law or the realization of its beneficent opportunities were intrusted to partisan hacks or good-natured non-entities.

Back in the Arena Today

The Hughes of those great days is back in the arena today—back at the very moment when we need at Washington the strongest and ablest executive the nation can supply. One can understand from his own record the impatience with which he has been forced to watch the empty rhetorical "triumphs" of the present administration, the endless catering to mere expediency, the appointments of "deserving" politicians made for the party's sake at the country's expense, the inefficiency that is inevitable when trembling hands hold the reins of government! Such things are incompatible with Hughes' character. He is built of sterner stuff!

Let's Have a Great President!

It is easy to foresee what kind of executive he will make! We have but to look back at what he did when Governor!

His cabinet will be one of the strongest in the Nation's history. He will choose full-sized men, who will serve the country in the same spirit he serves it. Nor will he lack material. He has in his party a far better array of experienced ability from which to draw than his opponent can find among his old-fashioned sectional-minded southern Democrats.

We can see him in action, master of the hard fact rather than the happy phrase. We can see his fine passion for public service freshening the whole Federal administration. We can see the joyful satisfaction he will take in vetoing pork-barrel appropriations and petty pension grabs!

And we can see him when foreign ambassadors come in and meet that straight unfeeling look of his and listen to a simple unvarnished statement of what is permissible and what is not!

These are days that demand true greatness at Washington.

And Charles E. Hughes is the man!

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It is a union of men of all parties.

The Hughes Alliance is not the Republican party; it is not a party at all.

Whatever your political creed, you can join the Alliance without cutting loose from your own party.

There are no dues; no pledge to support any party platform or any candidate except Hughes.

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THE FLOOD.

(Continued from page 355).

that name, serene as a straight line—at that last meeting I'd appointed Mis' Timothy Toplady a committee of one to go to the engine-house to get them to leave us sell garbage pails at cost in the front part; and it seems Mis' Merriman had give out that she'd ought to be the one to do it, along of her husband having been fire chief for eleven years and more, and she might have influence with 'em. I'd of known that too, if I'd thought of it—but you know how it is when they pitch on to you to appoint a committee from the chair? All your i'dees and your tact and your memory and your sense takes hold of hands and exits out of you, and you're left up there on the platform, unoccupied by any of 'em—and ten to one you'll appoint the woman with the thing in her hat that first attracts your attention. Mebbe it ain't that way with some, but I've noticed how it is with me, and that day I'd appointed Mis' Toplady to that committee sole because she passed her cough-drops just at that second and my eye was drawn acrost to them and to her. I'd never meant to slight Mis' Fire Chief and I felt nothing on this earth but kindness to her, and yet when I heard her speak so, all crispy and chilly and uppish, about being glad I liked something about her, all to once my veins sort of run starch, and my bones lay along in me like they was meant for extra pokers, and I flashed out back at her:

"Oh, yes, Mis' Merriman—your tulips is all right—" bringing my full heft down on the word "tulips."
And then I went on up the street with something—something—inside of me, or outside me, or mebbe just with me, looking at me, simple and grave and direct and patient and—wounded again. And I felt kind of sick, along up and down my chest. And the back of my head begun to hurt. And I breathed fast and without no pleasure in taking air. And I says to myself and the world and the Something Else:

"Oh, God, creator of heaven and earth that's still creatin' 'em as fast as we'll get our meannesses out of the way and let you go on—what made me do that?"

And nothing told me what—not then. Just then I see Mis' Holcomb—that was Mame Bliss come out on their side porch and hang out the canary. I waved my hand acrost to her, and she whips off her big apron and shakes it at me, and I see she was feeling the sunshine clear through her, just like I'd been.

"Come on down with me while I do an errant," I calls to her.
"My table ain't cleared off yet," says she, decisive.

"Mine either," I says back. "But ain't you just as fond of the sun in heaven as you are of your own breakfast dishes? Come on."

So she took off her apron and run in and put on a breastpin and come down the walk, rolling down her sleeves, and dabbing at her hair to make sure, and we went down the street together. And the first thing I done was to burst out with my thoughts all over her, and I told her about Silas and about Bitty Marshall and about how his little store on the Flats was going to shut down.

"Well," she says, "if that ain't Silas all over. If it ain't Silas. I could understand his dried fruit sales, 'long toward spring so—it's easy to be reasonable about dried peaches when its most strawberry time. I could even understand his sales on canned stuff he's had in the store till the labels is all fly-specked. But when he begun to cut on new potatoes and bananas and Bermuda onions and them necessities, I says to myself that he was goin' to get it back from somewheres. So it's out o' Bitty Marshall's pocket, is it?"

"And it's so legal, Mis' Holcomb," I says, "it's so bitterly legal. Silas ain't incorporated himself in with nobody.

It ain't as if the courts could get after him and some more and make them be fair to their little competitors, same as courts is fallin' over themselves to get the chance to do. This is nothin' but Silas—our leadin' citizen."

Mis' Holcomb, she made her lips both thin and tight.

"Let's us go see Silas," says she, and I see my determination was crookin' its finger to her, same as to me.

Silas had gone down to the store, we found, but Mis' Sykes was just coming out their gate with a plate of hot Johnny cake to take up to Mis' Merriman.

"Oh, Mis' Sykes," I says, "is your night bloomin' cereus goin' to be out tonight, do you know? I heard it was." The whole town always watches for Mis' Sykes's night-blooming cereus to bloom, and the night it comes out we always drop in and set till quite late.

Mis' Sykes never looked at Mis' Holcomb.

"Good morning, Calliope," says she. "Yes, I think it will, Calliope. Won't you come in tonight, Calliope, and see it?" says she.

I says I would; and when we went on,

"What struck her," I says puzzled, "to spread my name on to what she said like that, I wonder? I feel like I'd been planted in that sentence of hers in three hills."

Then I see Mis' Holcomb's eyes was full of tears.

"Mis' Sykes was trying to slight me," she says. "She done that so's to kind of try to seem to leave me out."

"Well," I says, "I must say, she sort of succeeded. But what for?"

"I give her potato bread receipt away," she says miserable, "and it seems she didn't expect it of me."

"Is that it?" I says. Well, of course we both know Mis' Sykes ain't the one to ever forgive a thing like that. I s'pose she'll socially ostrich-egg you—or whichever it is they say."

"I s'pose she will," says Mis' Holcomb forlorn. "You know how Mis' Sykes is. From now on, if I say the sky is blue, Mis' Sykes'll say no, it's pink."

They was often them feuds in Friendship Village—like this one, and like Mis' Merriman's and my new one. It hadn't ought to be so in a village family, but then sometimes it is. I s'pose in cities its different—they always say it makes folks broader to live in cities, and they prob'ly get to know better. But it's like that with us.

Well, of course the back-bone had dropped out of the morning for Mis' Holcomb, and she didn't take no more interest in going down street than she would in darning—I mention darning because I defy anybody to pick out anything uninteresting. Up to the time I got to the post office hall store, I was trying to persuade her to come in with me to see Silas.

"I'd best not go in," she says. "You know how one person's quarrel is catching in a family. And a potato bread receipt is as good as anything else to be loyal about."

But I made her go in, even if she shouldn't say a word, but just act constituent-like.

Silas was alone in the store, sticking dates on to a green paste-board to make the word "Pure" to go over his confectionery counter. He had his coat off, and his hair had been brushed with a wet brush that left the print of the bristles, and his very back looked busy.

"Hello, folks," says he. "How's life?"

"Selfish as ever," I says. "Ain't trade?"

"Well," says Silas, "it's every man for himself and the devil take the hindmost in most everything now, ain't it? As the prophet said, 'It beats all.'"

"It does that," I says. "It beats everybody in the end. Funny they don't find it out. That's why," I adds serene, "we been so moved by your generous cost sales of stuff, Silas. What you been doin' that for anyway?" I put it to him.



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"For to bait trade," says he.
 "For what else?" I ask him.
 "Why," he says, beginning to be irritable, which some folks uses instead of wit, "to push the store, of course. I ain't been doin' it for the fun of it."

"Ain't you now?" I says. "I thought it was kind of a game with you."

"What do you mean—game?" says Silas, scowling.

"Cat and mouse," I says brief. "You the cat and Bitty Marshall the mouse."

Silas stood up straight and just towered at me.

"What you been hearing now?" he says, demandful.

"Well," I answered him, "nothing that surprised me very much. Only that you've been underselling Bitty so as to drive him out and keep the trade of the Flats yourself."

Silas never squinched.
 "Well," says he, "what if I have? Ain't I got a right to protect my own business?"

I looked him square in the eye.
 "No," I says, "not that way."

Silas put back his head and laughed, tolerant.

"I guess," he says, "you ain't been following very close the business affairs of this country."

"Following them was how I come to understand about you," I says simple. And I might have added, "And knowing about you, I can see how it is with them."

For all of a sudden, I see how he thought of these things, and for a minute it et up my breath. It had always seemed to me that men that done things like this to other folks's little business was wicked men in general. That they kind of got behind being legal and grinned out at folks and said: "Do your worst. You can't stop up." But now I see, like a blast of light, that it was no such thing; but that most of them was probably good husbands and fathers, like Silas; industrious, frugal, members of the common councils, and of the school boards, elders in the church, charitable, kindly, and believing simply as the day that what they was doing was for the good of business.

"Well," Silas was saying, "what you going to do about it?"

I looked back at Mame Holcomb standing, nervous, over by the cranberry barrel:

"I've got this to do about it," I says, "and I know Mame Holcomb has, and between us we can get every woman in Friendship Village to do the same—unless it is your wife that can't help herself like lots of women can't: Unless you get your foot off Bitty's neck, every last one of us will quit buying of you and go down to the Flats and trade with Bitty. How about it, Mame?"

(Continued next week.)

THE NEW CLOCK.

BY FLOY SCHOONMAKER ARMSTRONG.
 We have a new clock at our house,
 It takes the old one's place,
 But sister Bess and I can't bear
 Its great big quiet face.
 It shows the hours and days and months,
 In figures—two round rows,
 And yet it isn't smart enough
 To tell us what it knows.

We like a clock that speaks right out
 And says: "'Tis half-past eight
 And if you do not hurry off
 To school, you will be late!"
 The old clock did. And every night
 It called to us and said:
 "My dears, when next I strike, you two
 Must march straight up to bed!"

The new clock never talks out loud,
 Just ticks and looks so wise,
 As if to say: "Speak low, my dears,
 And learn to use your eyes."
 I know, without the dear old clock
 To call out every rule,
 We'll always go to bed too soon,
 And always late to school.

All that is purchasable in the capitals of the world is not to be weighed in comparison with the simple enjoyment that may be crowded into one hour of sunshine.—Higginson.

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196 pounds Lily White Flour	costs.....	\$10.00
29 quarts milk	"	2.32
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By planning to bake your bread when the gas oven is being used for pastry baking you will save \$1.60 in gas, or at least divide the cost between bread and pastry.

People using wood or coal in cook-stove really have no extra heating expense.

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No. 7983—Girls' Dress. Cut in sizes 8, 10, 12 and 14 years. The dress closes at the back and has pannier pockets.

No. 7974—Children's coat. Cut in sizes 2, 4 and 6 years. The skirt section is circular and is cut in three gores.

No. 7993—Ladies' skirt. Cut in sizes 24 to 30 inches waist measure. This skirt is cut in three gores and can be made with or without the applied yoke.

No. 7967—Ladies' apron and dust cap. Cut in sizes 36, 40 and 44 inches bust measure. High or low neck may be used.





Woman and Her Needs

At Home and Elsewhere



Friends and Neighbors

THE four-year-old was trying to learn the difference in the meaning of the words "friend" and "neighbor." There was a difference, he was quite sure, because the people next door were neighbors, and they would not speak to his papa and mamma, while they had friends who came most a hundred miles or so just to talk to them 15 minutes. He pondered the subject long and deeply, and finally jumped up excitedly.

"Oh, I know the difference, now," he said. "Your neighbors live next door, but your friends have to live a long ways off."

Thinking it over later I wondered if there could be a better definition of the difference. Why it is that human beings can not live across the road from one another and continue to be friends seems hard to determine, but certain it is that few of us have friends living near. Many a friendship has been broken when the parties got near enough to be "neighbors." And who can count those who have gone down to destruction before the perils of a camping party or a week spent in the same cottage at the lake.

Two young women who have been bosom friends for years went for a lake trip together last summer. They shared a stateroom together and were gone in all ten days. They have not spoken to each other since their return, but the things they have spoken about each other would fill a large-sized volume. One declares the other is a "gourmand," while the other accuses the one of every sin from untidiness to thievery. They had been friends for ten years before that fatal trip. Now they are not even neighbors.

I suppose the trouble is that so few of us can be hypocrites all the time. When we only see a friend for two or three hours once in a while we have no trouble glossing over our faults and making them think we're perfection. But when they get near enough to run in of a morning before we "get warmed up to our subject," as the lecturer says, murder is bound to out. They find out then we are untidy or miserly, or had tempered early in the day, or selfish. And we find out that they are incessant borrowers and inveterate forget-to-payers, and they want to leave the baby with us on the very day we want to go out. And so it goes. Friendship isn't strong enough to stand such nearness and a barely perceptible coolness arises which eventually changes into a hard frost.

Many of us realize this inherent tendency in human nature to be jarred by too intimate a knowledge of our friends' daily life, and shy off from too frequent visiting and too close contact. One woman of my acquaintance sold her home three years ago and is still looking for a place to live because every house she has selected so far turns out to be in the same block, or back to back, with that of someone she knows well.

"I will not live near any of my friends," declares this wise lady. "Even if they didn't wake up to my faults my children would bother them or our chickens would scratch up their garden or their dog would run across our front yard, and bang would go the friendship. If I must have people near me I want them to be someone I don't know so if I never have their friend-

ship I won't miss it. I love friends, and I know the best way to keep them is never to ask favors of them and not let me know too well. 'Familiarity breeds contempt,' was not spoken in vain."

The great age of the saying, "No man is a hero to his valet," proves that this streak of human depravity has always been recognized by philosophers. Sudden and violent friendships, much over-worked, are always short ones. Therefore, if you would keep your friends, don't get too chummy and, as the small boy said, be sure to "live a long ways off."

DEBORAH.

PLUM DUFF AND SPICED DUFF, FRUIT DUFF—AND DUFF.

BY C. H. WEEKS.

The veriest novice in culinary achievements may, at almost the first trial, make good plain duff. After that all is plain sailing; she has at her command a variety of toothsome desserts for dinner or lunch which are easily and quickly made.

Using one heaping cup of flour, one teaspoonful of baking-powder, one-quarter teaspoonful of salt, mixed not too stiff with sweet milk, one has the nucleus of a score of delicious hot puddings at the smallest possible cost and a minimum of time. The dough, when mixed, is put by spoonsful on a buttered plate and steamed over boiling water twenty minutes.

With the plain duff as given above may be served a variety of sauces. Foremost among them in excellence is the following:

Molasses Sauce:—Mix one-half cup of sugar with one heaping teaspoonful of flour, and add one cup of boiling water. Let boil ten minutes, or till clear, then add one-half cup of molasses, allow to boil up again and add generous tablespoonful of butter and salt to taste. This sauce is improved for some by the addition of lemon juice or vinegar.

At the expiration of the twenty minutes place the snowy mounds of duff on the serving dish. With fork in either hand gently make a cleft in the top of each and drop therein a half-teaspoonful of butter. Pour over all, the whole or a portion of the hot molasses sauce and serve at once.

To the plain duff may be added apple, or half an apple peeled and cored; or half a peach may be buried in the heart of each spoonful of dough and steamed. Raisins, currants, cranberries or preserved cherries may vary the mixture and with all may be served the molasses sauce given, or the following:

Snow Sauce:—Rub to a cream one small cup of vinegar and one large tablespoonful of butter, add beaten yolk of one egg and stir well. Set the bowl containing sauce in basin of hot water upon the stove; add tablespoonful of hot water, stir well, add another tablespoonful of hot water and stir. In a moment add the third tablespoonful of water and if the sugar is not entirely dissolved leave bowl in the hot water till the sauce is like a golden syrup. Remove from fire and pour into sauceboat. Add the stiffly beaten white of egg, laying it on top of the sauce. It may be stirred into it before serving.

Spiced duff may be made by adding

a half teaspoonful of ground cinnamon, a dash of clove, and two tablespoonful of chopped citron to the plain duff mixture. With this should be served egg sauce. Cream one-half cup of butter and one cup of powdered sugar. Add beaten yolk, then the stiffly beaten white of one egg, and beat all well. Flavor with vanilla. Serve spiced duff very hot.

Buttered duff is delicious served with fruit sauces. Prepare plain duff. When done remove to serving dish, and over the whole pour one-half cup of partly-melted butter. Over all pour any fruit sauce liked; apple, cherry, cranberry, raspberry, or peach. If peach, a sprinkling of cocoanut is an improvement. If strawberries are used they are best served cold, and crush-

ed enough to liberate part of their juices and sprinkled generously with powdered sugar. Cream, plain or whipped, adds the finishing touch.

The combinations which may be employed are many, and all are appetizing and sure to be called for again and again.

Last, but not least, is the rich, luscious lemon duff. Mix well together one cup of sugar, one of water and one of molasses. Add one lemon, seeded and sliced, and put to heat. When boiling, add plain duff by spoonsful directly to the boiling syrup, cover closely, and cook fifteen minutes. Each puffy mound will be covered with the sweet syrup. The duff and sauce should be served in the same dish, and very hot.

More Cloth In Coats and Skirts

THIS promises to be a season when the styles will be really becoming. As one editorial writer points out, now that fabrics of all kinds have soared in cost, garment makers are putting more cloth into their models in order to have an excuse to double their prices. Whether or not that is the reason, coats and skirts are much fuller, though the skirts even up the expense of the fullness by their abbreviated length.

"Yards and yards in width," one glowing advertisement describes its coats, and when one sees them billowing about the slim girls and women who don them, one can believe the "yards." Separate coats are long and full, the fuller the better, and in many cases the fullness hangs absolutely unconfined. Other models show belts, some belted in the front only, others in the back only, while still others are belted in all the way round. Ribbed cloths are favorites, Bolivia cloth, a new ribbed goods, being first choice, and wool velours second. Green is the modish color, followed by brown, and navy blue, which can never be escaped, is still with us. Fur is as good as ever for trimming, better if that could be possible, and the smartest models show collars and cuffs of mole, squirrel, "possum" and raccoon. Square collars and deep cuffs are especially favored, though the roll collar is seen on many smart garments.

Skirts, too, are full and flaring. A popular model just now is of plaid, checked or black silk, shirred at the waist in lieu of a belt and with deep, shirred patch pockets. This is especially modish in bright checks and green plaids, black having been much worn during the summer.

Cloth plaids are also shown, but these, obviously, can not be shirred. Instead there is a yoke and belt with set-in pockets covered with large flaps. The skirt may be gathered onto the yoke in the back, or set on plain, the former method being chosen by slight figures. Of course, checks and plaids do not have a clear field. There is the inevitable navy blue and black, green, brown, taupe, in short, all the standard colors.

Every sort of fabric is utilized for these separate skirts. You may have your choice of plain taffeta, charmeuse, satin, velour, chuddah cloth, gabardine, whipcord, tweed, poplin and serge. Your pocketbook may be suited, too, for in spite of soaring prices there are still many bargains at \$7.50 to be picked up, while for \$5.00 there

are serviceable skirts which came in last spring, but are near enough to the fall style to satisfy the most particular.

HOME QUERIES.

Household Editor:—I have a black and white check woolen dress that I must clean before wearing, and would like to wash it. It has no bad spots, is just soiled. Could you advise me how to wash it best to keep from shrinking?—Anxious.

Household Editor:—Has anyone a recipe for musk melon butter?—Mrs. R. H.

Thank you for the tomato recipe. We received so many replies we could not use all.—Ed.

Household Editor:—To lay down whole ripe tomatoes, make a brine of salt and water strong enough to float a small potato. Pick tomatoes without a blemish and rather greenish, very hard and firm. Lay these in jars carefully immediately on picking, fill jar with tomatoes then pour on the brine to cover. Put cloth over tomatoes, and plate or some other cover. Freshen in cold water when wanted for use.—Mrs. L. E. S.

Household Editor:—I have been a reader of the Michigan Farmer for a number of years but have never written. I enjoy your paper very much and always find good helps.

I have lots of recipes and if I see this, for laying down whole ripe tomatoes, in print, may send more.—A Reader.

Mrs. L. E. S.'s recipe, almost the same was already in type when this arrived. Thank you, and come again.—Ed.

Household Editor:—In the last issue of your paper, in the Home Queries department, someone asked for a recipe for laying down whole ripe tomatoes in a jar. I think I have the recipe that is wanted. Take medium-sized, smooth, ripe tomatoes and after washing cut them through the middle, then rub the cut surface with a mixture of equal part of pepper, salt and grated horseradish. Place the two halves of each tomato carefully together and pack them closely in a jar, putting a plate over them to hold them down, and put them in the cellar. The juice of the tomatoes will make brine enough to cover them. They will keep a long time. When the brine is rinsed off and the tomatoes sliced they taste very much like fresh ones. I hope this is the recipe W. F. B., Holly, is looking for. If the address had been given in the paper I could have sent it

so it would reach them sooner. I enjoy the crochet patterns given in the paper very much and would like them more often. Also Deborah's "Domestic Crucible" stories.—Mrs. L. H. Deatur, Mich.

HOW I BECAME A FRUIT GROWER.

BY A. FREEMAN.

Many of the readers of the Michigan Farmer will admit that the work on the farm needs physical strength, and that there is plenty of work. Also, that help is scarce. Who would want to see the crops going to waste, when you know how much time, money and work it had cost to get it as far as the harvest? As I never lived in the country before I was married, I had to learn this all by observations and experience. Sometimes it was utterly impossible to get competent help. Therefore I had to lend a hand, and then had to keep on with it, which was all too much for my strength.

My health began to break down. As country life was new to me I enjoyed having a garden. Things tasted so much better fresh from the garden. At last I begged my husband to plant a small bed of strawberries. I was so hungry for small fruit, which neither we or our neighbors had. We planted six rows across the garden. Oh, the joy to come out early in the morning and pick those luscious berries for breakfast. At that time I had them on the table at all meals for three weeks. Now everyone can stretch the season to seven and eight weeks.

I had been very poorly in the spring, but after being out every day, and almost the largest share of the day, picking my berries, I gained in health. From this little patch I sold berries to all my neighbors who cared to buy, at five cents per quart. Berries were cheap in our county, and still I sold \$25 dollars worth from this small piece of ground, which opened my eyes some.

Wheat was 60 cents per bushel and only averaged 38 bushels per acre; so why bother with it? We sent for catalogues, subscribed for horticultural papers, studied them all winter, planned, prepared, and then had the nursery owner come to give his advice as to the right condition of soil and location, because we were ignorant. How ignorant our experience told us; Our adviser, too, made gross mistakes.

Many of the counties now have county agents, rather "adviser," who should save the ones who ask their opinion hundreds of dollars.

I grew well and strong, we prospered on our small farm, and I enjoyed my work so immensely that I became a bore to those uninterested in it. You come so close to nature, all those wonderful developments you witness, that you have no room in your heart for enmity or pettiness. Nor time for gossip, only love, love for your work and for your plants.

I would be glad to help others to commercial fruit growing with my 23 years of experience.

THRIFT HINTS.

BY MAUDE L. WESTCOTT.

At the present time when the spirit of thrift is abroad in the land, suggestions that point the way to economical solutions of the housewife's problems are peculiarly pertinent. The art of saving is quite as important as the art of making money and the woman who has learned many useful little "tricks" whereby to save the pennies in the management of her home and income is adding materially to the family's financial success. Here are some practical hints for the enlightenment of the would-be-thrifty homemaker:

Don't discard faded, soiled or discolored rugs or matting. Dye in any preferred shade will rejuvenate and prolong their periods of usefulness. First beat, clean all spots with soap and water or gasoline, then spread out flat on

the floor. With a wide paint brush apply the dye—light blue for a blue rug, tan or orange for brown, light green on a green rug. The rug will look muddy if the dye is too dark. It will take several packages—prepared according to accompanying directions, for a medium-sized rug. This process repeated once a year will keep the rug fresh looking and attractive.

When eggs are cheap is the time to preserve them for use in the winter. Give each egg a coating of lard and pack in jars of salt, small end down. See that the eggs are fresh and have the salt rather fine. Do not let them touch each other. Keep in a cool, dry place.

Children's shoes will wear almost twice as long if the soles are soaked in linseed oil. Set the shoes in a pan containing a very little oil, and allow them to remain for several hours. Wipe thoroughly before they are worn so that they will not mark the floor.

Thrift consists largely in keeping one's possessions in good condition and as long as possible. Household articles rightly cared for will last just twice as long as those carelessly treated. The cheaper grades of printed linoleums and oilcloths do not wear so well with hard usage; the pattern wears off and the whole soon has a faded appearance. This may be prevented by giving it a coat of clear varnish twice a year, thus keeping it fresh and pretty and easy to mop. Having furniture revarnished involves expense or hard work. Using a mixture of two parts linseed oil to one of turpentine on the dust cloth will keep it new in appearance indefinitely. Once a week go over the whole, carefully rubbing up every portion, with a soft duster moistened thoroughly with this mixture. Use a clean cloth, renewing when much soiled, and not any old rag or stocking leg that will leave lint on the furniture. This manner of dusting is really a gradual process of re-varnishing, and articles treated in this way seldom need any other attention.

Plumbers' bills are practically unknown to the woman who knows something of the system installed in her house, or at least is familiar with the common household remedies for frozen or clogged pipes. To thaw out a pipe a lighted lantern placed beneath it will gradually melt the ice. A preparation of coarse salt and boiling water is also most effective; pour a bucketful of water in which the salt has been boiled, slowly through the pipe. The clogging of kitchen waste pipes may be relieved by the following method: Purchase a small can of caustic potash and turn it out over the drain of the sink, allowing a small drip of water from the faucet to flow through it. Soft soap is formed by the combination of caustic potash and grease which dissolves in water and washes away.

Wool should not shrink if washed properly. Use luke warm water for washing and rinsing and pull into shape when you have finished. The best method is to make a suds of a good wool soap, add a little ammonia and squeeze and rub gently with the hands. Do not use a board. Rinse through several waters until the last is perfectly clear. Otherwise there is danger of streaking. Dry where there is no danger of freezing.

AFTER THE SUMMER TIME.

BY MARGARET ERSKINE.

The wild rose is a-noddin',
An' a swayin' in th' breeze,
An' the Puff balls are a-scatterin'
Their soft down across the Leas,
An' the song bird is a-singin',
Fit to bust his little throat,
A-trillin' an' a-hangin',
On to his highest note.

An' the sun he is a-shinin',
Just as hard as he can go,
An' the little stream's a-silvered
Where the fish dart to an' fro.
An' the bees they are a-hummin',
Round the little clover flowers,
As they sippin' steal their honey,
For the long, drear winter hours.



Hang Out A Line Of Holeless Hosiery

When you hang up the stockings on wash day and find them hole-worn and torn, you realize that instead of your well-earned rest, you have an evening's darning ahead of you. There's no need of so much darning. Buy Durable Durham Hosiery for the whole family, and on wash day you'll hang out a line of holeless hosiery.

DURABLE DURHAM HOSIERY
FOR MEN, WOMEN AND CHILDREN

is made right in the heart of the cotton district from the best yarn we can make. It has heavily reinforced heels, toes and soles—always fits snug after every washing, and the tops can't be jerked from the bottoms. Every pair is made strongest where the wear comes hardest.

Our location, economical manufacturing conditions, and the fact that we are the largest manufacturers of this class of hosiery in the world, enable us to sell superior hosiery for the low price of 10, 15 and 25 cents.

For best wear, buy Durable Durham 25-cent Mercerized Hosiery.

Durham Hosiery Mills
Durham, N. C.



Better Cake and Biscuits

In all recipes calling for baking powder you will get better and finer food and insure its healthfulness by using baking powder made from cream of tartar, such as Royal Baking Powder.

Cream of tartar is derived from grapes—a natural food, as contrasted with phosphate or alum, derived from mineral acids, and used because of their cheapness in the manufacture of some baking powders.

Housewives are sometimes led to use inferior baking powders because of apparent lower cost, but there is little difference in cost in practical use—about one cent for a whole cake or pan of biscuits, which is very little when you consider the difference in quality and healthfulness.

WEAR YOUR OWN WOOL

Spun and woven by the old homespun methods, just as the Pilgrim Mothers did it for the Pilgrim Fathers. We will make you pure wool blankets, campers blankets, tweeds, fulled cloth, flannels, wool batting, yarn, and hosiery. If you will send us your wool. Write today for price list, and learn how to save money on the best woolsens.

REED CITY WOOLEN MILLS,
Established 1853. Reed City, Mich.

Buy Your **COFFEE** WHOLESALE IN 5-LB LOTS Get the BEST and SAVE 10 cts per pound. WE PAY POST, EXPRESS or FREIGHT IF YOU LOVE GOOD COFFEE SEND FOR PRICED LIST JEVNE COFFEE CO. (Est. 1881) Coffee Specialists Dept. 7, 2855-57 W. Madison St., CHICAGO.

When writing to advertisers please mention The Michigan Farmer.

IVER JOHNSON



SAFE!

Even Under the Blows of a Hammer

You can't bully an Iver Johnson Revolver! Only one thing under the sun can fire an Iver Johnson Revolver—that is a purposeful pull on the trigger.

Iver Johnson Revolvers and Cycles are both needed and appreciated in farm homes.

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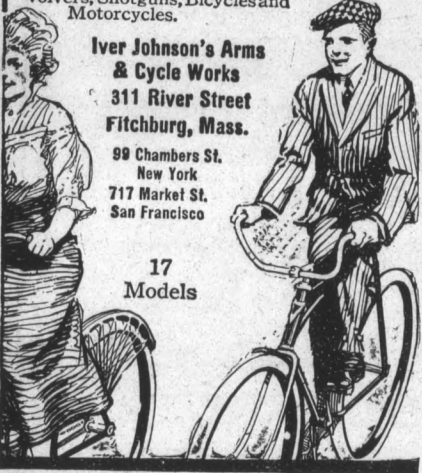
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17 Models



On page 1464

of our big new General Catalog is shown a gasoline engine which most makers would rate at more than 10-horse power. We call it 9-horse power, because we want to give more than you expect. Price, \$141.00. Sears, Roebuck and Co., Chicago.

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We will send you as many gallons as you want of the best 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.

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Rides Like An Auto

The New Patented Harvey Bolster Springs are made just like the finest automobile springs. They absorb all the bumps, jars and jerks of rough, uneven roads, and change an ordinary wagon into an easy-riding spring wagon. A set on your wagon will enable you to get your perishable produce to market in first class condition always. **Insist on Harvey's.** If your dealer can't supply you write us for free catalog and price list.

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WANTED—AN IDEA. Who can think of simple things to patent? Protect your ideas they may bring you wealth. Write for "Needed Inventions" and "How to get Your Patent and Your Money." **RANDOLPH & CO., PATENT ATTORNEYS, DEPT. 67, WASHINGTON, D. C.**

Farm Commerce.

The Milk Buyer Changes His Answer

GO back home, you farmer, and get better cows." For many years that has been the encouraging answer given by the opulent milk buyer to the necessitous appeals of the producer for reasonable prices for milk. And the farmer, like a little lamb, has each time gone back home, secured better cows, produced better milk and sold it at the same old price, while the spoiler has smilingly jumped into his private car and traveled back to headquarters, ordered a raise in milk prices to his customers, and through the influence and power of his wealth has thoroughly entrenched himself financially and, where necessary, politically, for whatever might come.

"Go back home, you farmer, and get better cows." And when the farmer had added better cows to his herd it happened that his hired men came to him and pictured how much better conditions they would have to work under, and the higher wages they could get in the city, and that they would go unless he raised their pay. So they got the extra money that came from the larger quantities of milk produced by the better cows, and more. But the farmer soon saw that he could not keep all of his help long for he would have nothing to pay them so he let a few of the men go to the city while he and his wife and children put in longer hours of labor to do the work without pay that he might keep the milk buyer supplied at the same old price.

"Go back home, you farmer, and get better cows." And as the farmer did so and kept down the cost of labor through the gratuitous work of his wife and children, he found that all the extra profit coming from the better cows was consumed, and more, by the advanced cost of feed. So he grew more and better feeds, built silos and balanced rations that every possible saving might be affected in order to keep the milk buyer supplied at the same old price.

"Go back home, you farmer, and get better cows." And again he complied. Then one afternoon when he was very busy out in the field, he was called to the house to be told before his wife and children by an inspector that he would have to replace his wooden floors with concrete, seal the stable above the cows, rearrange the barns, build a dairy house, etc., etc., or he could no longer sell milk. And so the already over-burdened farmer went to the bank and secured a loan and made the necessary changes and additions. Then calling upon his own reserved strength and that of his wife and children for longer and harder hours of labor and through planning the most efficient rations that science and experience could compound, he still found that the interest on the loan and the depreciation of the property more than offset the increased income from the milk produced by the better cows. And the farmer kept on selling the milk to the buyer at the same old price.

"Go back home, you farmer, and get better cows." And so the farmer returned and again tested every animal in his herd, weighed and reckoned the cost of feed to each one and marked the few that seemed to be least efficient in the conversion of feed into milk. These he sold and then he went out to find good ones to fill their places. After traveling a long way and visiting many farmers whom he thought might have good cows for sale, he discovered that his neighbors were all out looking for cows of the same kind, and because of the great

scarcity of good cows the price was very high—so high, indeed, that none could pay what was asked. These neighbors, he soon learned, had suffered the same humiliating and discouraging experiences that he had gone through, and as they talked over the seemingly hopeless situation confronting them, there suddenly shot across this farmer's mind from somewhere, a great light.

The light brightened the way, as it were, and he saw more clearly than he had ever seen before, and he wondered at himself in amazement. Had he all through the almost unendurable experiences of past years never for a single moment thought of it? Had it not once occurred to him that the well-groomed, high-headed, uncompromising, arbitrary representative of the buyers' fraternity could be mistaken as to just what the exact cost of producing milk should be? Wherein had this man living in a palatial home on a highly restricted boulevard, a keener appreciation of the amount of

labor and feed and equipment and overhead charges required for producing milk than the man on the job?

And the farmer stood up and the neighbors saw that a great change had come over him, and he said, "O, fools that we are, neighbors! For these many years we have been flim-flamed, bamboozled, cajoled, hooked, fooled to the top of our bents! Prices can be so low that the best cows of the best herds we own cannot return a profit." Then his neighbors saw the light and understood.

And the next time the man who had repeatedly told the farmer to "Go back home and get better cows," came to town he met the same farmer but a different spirit. And there were five hundred other spirits of the same kind with the farmer, and in a chorus that thundered like the voice of Thor, these men addressed the visitor thus: "You can have the milk we produce at such a price and no less."

And as the echo and the re-echo of the reverberations died away the once confident and uncompromising man was overcome by the awful silence that followed. After a cold sweat his massive frame shook as if a terrible ague had gripped him, his face grew pale and his lips quivered as he whispered, "Gentlemen, (note the salutation), I'm terribly sick—just send one of your men to headquarters and they'll do what's right by you."

Advertising Farm Products II.

By I. J. MATTHEWS

THERE are some obstacles to direct farmer to customer selling. These will be here stated so that farmers may avoid some of these obstacles and make direct selling more universal and more profitable.

Magazine advertising involves and necessitates the mail-order method of selling products and there is little doubt but that this method, when perfected, will be more profitable for the producer. It was thought that the parcel post law would make it possible for the farmer to trade more direct with the consumer but while it has been possible in some cases, in general, the measure has not brought about the end desired.

Purchases must be made in larger quantities before a farm mail order business can be made to bridge over the breakage of a dozen eggs or the spoiling of one or two pounds of dairy butter in transit. A larger quantity purchased at one time will be more economical for the buyer, likewise more economical for the producer for, lamentable as it may seem, the extra cost of marketing by mail now is paid by the producer. He must sell at some figure near the market value in order to compete with the retailers of the city.

There must also be definite quality standards before the farmer can profitably dispose of his products direct to the consumer. When the customer purchases eggs, he wants to know that they are hens' eggs and not robins' eggs. This example is a little out of the commonplace, yet eggs are no more edible and suited for culinary purposes than stones until it is known what sort of eggs they are and how fresh. The housewife should know that when she orders A. No. 1 eggs she will get a dozen strictly fresh eggs weighing 28 ounces and with an approximate diameter of one and one-half inches. These eggs might be either brown or white. When the market classes of farm products can be classified with that degree of exactness, there will be more incentive for a demand on the part of consumers for products direct from the soil.

Many people do business on the installment plan. The grocer usually carries the householder's bill and this is paid at the end of the month when the workman gets his wages. The farmer is not equipped to handle this sort of trade. Neither has he the cap-

ital nor the opportunity to get the measure of the extent of the personal credit he should grant to his respective customers. The C. O. D. system now used in the mails is of no value in selling farm products, except that it gives a customer the use of his money for a little longer time. When improved credit and C. O. D. systems can be devised, when the quality standards of the various farm products have been certainly settled upon, then the consumers of the cities can profitably deal with the farmer direct in the event that the staples can be used in large enough quantities. When these reforms are brought about and they will soon come, it will become almost necessary for farmers to advertise their wares.

The fisherman seeks bass where bass are known to abound. In the same way, if the farmer has products to sell, he must advertise in publications that are read by those likely to want what he can supply. It would be foolhardy for a breeder to advertise stock for sale in a manufacturers trade journal, he must advertise in papers read by farmers. The farm magazines are the mediums through which the world may know that the farm can supply numbers of cows, horses, or calves. In order to secure cumulative effects, advertising should be carried on for a period of time but there are so few products that will be produced through a long period of time that it is well nigh impossible to recommend this sort of advertising. It may be well in passing to call attention to the fact that a few farmers have made use of this sort of publicity. I have in mind a case where a certain Holstein breeder advertised the fact that a well known bull was heading his herd and that in three years he would have females for sale sired by the famous individual. This was long time advertising and the kind that it would pay every farmer to use.

It is impossible to discuss farm advertising without outlining some constructive policies and giving some advice to the producer. A young man starting in the farming business ought to make a survey of the field and know thoroughly what he will produce. It is sometimes impossible to know exactly what will be for sale, but if he starts in to breed Shorthorn cattle, he will be able to do some constructive and profitable advertising in the forty years that he will likely be in the bus-

ness. It is long-time production that makes it pay to advertise. Raising Shorthorns for two or three years, Jerseys for two or three years and Shropshire sheep for a similar period will never enable the farmer to make very much use of any except sporadic and local advertisements. It is generally agreed that the profits of publicity come in cumulative effects, in the volume of sales rather than through increasing the selling price of the article. So the young farmer should have in mind a major life business in not more than two or three commodities. Other farm products may also be produced in a minor way but these must be disposed of locally while the specialties may be left to periodical advertising. For instance, the young man starting out with Shorthorn cattle, Berkshire hogs and Rhode Island Red fowls will by constructive breeding produce a class of stock in a few years that will justify placing it before the public through the press.

MICHIGAN FRUIT MARKET NOTES.

A total of 835 iced cars of peaches were shipped out of Berrien county during the week opening September 11 and the boat lines handled almost a like quantity.

The two canneries at Coloma, Berrien county, are running full blast, with upwards of 100 people employed. They are making big packs of tomatoes, pears and peaches. Friday Bros. have been bothered to get help and have been running trucks to Benton Harbor and Covert to fetch women to work.

Grape growers of Paw Paw and Lawton held meetings September 19 and 20 with representatives of the M. A. C. and the Michigan Bureau of Markets and discussed better packing methods. Cars of grapes that come up to standard will be certified by the state, a diamond-shaped monogram having been prepared for use, with the letter M.

Luther Hall, owner of the famous Northern Spy orchard on the state road, four miles north of Ionia, has prospects of harvesting a \$10,000 crop of apples this fall.

Bangor has been a busy fruit market this fall, particularly around the Fruit Growers' Exchange where 20 of the large growers sold their stuff. The market opened at \$1.25 for best peaches, but dropped after a while to \$1 for Elbertas and other varieties brought less. Peaches were inclined to run small in size. One sale is reported of choice Spy, Russet and Greening apples at \$2.75 per barrel, but most orchards have sold around \$2.40 per barrel. Growers are reporting a scarcity of help, with a dearth even of the usual hoboos.

Peach shipments from orchards in the vicinity of Hartford, Van Buren county, have been around 175 cars, while the two canning factories at Hartford have utilized thousands of bushels. Shipping stock has brought 90 cents to \$1.35, while over-ripe fruit has sold for less. On the whole, it has been a fairly good year for growers.

The Scottville-Custer Fruit and Produce Exchange, composed of about 20 Mason county growers, handled about 2,000 cases of cherries this season, which netted growers 80 to 90 cents per crate. Peaches have been handled in carlots to good advantage, fancy stock bringing \$1.25 and seconds \$1 per bushel. The peaches were put over graders at the Scottville warehouse.

New fruit orchards are developing in the Hart and Shelby district, with prospects of a return to the good old days when 30 cars per day were shipped from Shelby station alone.

While the peach crop in the Casnovia district, Muskegon county, is about one-quarter as large as last year there are some peaches. Asa Humphreys estimates his crop at 2,000 bushels. Dr. Hersey will have four to five thousand bushels and there are other good orchards. ALMOND GRIFFEN.



This is Styleplus Week from Maine to California!

Styleplus Week from coast to coast, the country over! The week when the live-wire, hustling merchants are putting Styleplus suits and overcoats in their store windows for you to admire! The week when the up-and-doing men of the nation are buying their new winter clothes—Styleplus at the attractive and easy price—\$17. The price \$17 for such splendid fitting, splendid wearing clothes has always been remarkable. But right now it is an achievement without a parallel.

All wool or silk-and-wool fabrics in the latest attractive shades and patterns. The foundation (canvas and haircloth) is thoroughly shrunk in water for twenty-four hours. Fine substantial linings. Hand tailoring in all the vital parts. Only silk thread is used throughout. A corps of famous designers fashion the models. Here are clothes of remarkable style and value, covered by a guarantee that makes you sure your money's safe! Visit the Styleplus Store today.

Style plus all-wool fabrics + perfect fit + easy price + guaranteed wear

Styleplus \$17 Clothes

"The same price the nation over."
(In other countries duty added)

You know the price before you go into the store—\$17 always, everywhere. Watch your local newspapers for advertisements of the nearest Styleplus Store. Look for Styleplus in the Store Window. Look for the Styleplus Label in the coat collar. If there should not be a Styleplus Store in your town, ask your favorite dealer to order a Styleplus suit or overcoat for you.

Write us (Dept. H) for free copy of "The Styleplus Book."

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

DR. DAVID ROBERTS' COLIC DRENCH

Your horse kicks at his stomach—paws—lies down—gets up—lies down—rolls over on his back. Make sure it's colic. Do something quick! You can save his life if you are ready with Dr. David Roberts' Colic Drench to allay the pain, to liquefy the poisonous gases and stimulate the paralyzed bowels. Get it, have it ready in the stable. Learn when to drench, how to drench, by studying the "Practical Home Veterinarian."

Dr. Roberts' Physic Ball and Horse Tonic prevent constipation and keep bowels open. One Physic Ball equals a month of grass.

Fever Paste acts on mucous membrane of the throat and overcomes distemper, fever, colds, etc. Use *White Liniment, Heave Powder, Gall Balm, Antiseptic Poultice and Breeding Tonic.*

Get Dr. Roberts' Live Stock Prescriptions at your drug store—nearly 4000 dealers in U. S. Look for and insist on getting the package that bears Dr. Roberts' picture. Send \$1.00 for copy of 184-page "Practical Home Veterinarian," treating all diseases of live stock. Address

DR. DAVID ROBERTS VETERINARY CO.
960 Wisconsin Ave. Waukesha, Wis.



LIME Pulverized lime rock for "sour" soils. Write for LOW PRICES DIRECT TO YOU and we will send sample and full particulars. Write to office nearest you. **LAKE SHORE STONE COMPANY.** Muskegon, Mich., and Benton Harbor, Mich.

Potatoes For Sale In local shipments of 5 bu. or more. Write for prices to Faye H. Webster, Dighton, Michigan.

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Indiana Farmer, Indianapolis, Ind.	57,101	.25
The Progressive Farmer Birmingham—Raleigh Dallas—Memphis.	174,121	.80
Breeder's Gazette, Chicago, Ill.	90,000	.60
Prairie Farmer Chicago.	100,000	.50
Hoard's Dairyman, Ft. Atkinson, Wis.	67,820	.45
Wisconsin Agriculturist, Racine, Wis.	63,454	.30
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Pacific Rural Press San Francisco, Cal.	22,000	.16
	1,805,351	\$8.23

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Markets.

GRAINS AND SEEDS.

October 10, 1916.

Wheat.—Although a sharp slump in wheat prices followed the opening of the markets on Monday morning, due to the sinking of ships off the American coast by German submarines, the heavy buying by the Allies' agents for export quickly stopped the decline and a large portion of the loss was recovered before the close of the day's session. Practically all of the news is bullish; the government crop report shows a wheat yield of 607,566,000 bu. for this country. This is 404,000,000 less than last year's crop. The American visible supply has also been reduced to 40,000,000 bushels greater than a year ago. This reduction from former weeks is due to the conservative selling by farmers. Then, too, conditions in Argentine are very discouraging to the bears and a poor crop is promised there. One year ago No. 2 red wheat was quoted locally at \$1.12½ per bushel. Last week's Detroit quotations were:

	No. 2	No. 1	Dec.
	White	White	
Wednesday	1.60½	1.55½	1.64½
Thursday	1.61	1.56	1.65
Friday	1.59	1.54	1.63
Saturday	1.60	1.55	1.64
Monday	1.57½	1.52½	1.61½
Tuesday	1.59½	1.54½	1.63½

Chicago.—December wheat \$1.59½; May \$1.58½; July \$1.34.

Corn.—Trade in this cereal was influenced by the weakness in wheat at the opening this week, but the trade rallied well from the low point and closed with only a fraction of a cent loss for the day. Cables from Argentine indicate the corn crop in that country to be seriously damaged. According to the government crop report, United States farmers will produce this year 2,717,932,000 bushels. This is 300,000,000 bushels less than the crop harvested last year. One year ago No. 3 corn was quoted locally at 65½c per bushel. Last week's Detroit quotations were:

	No. 3	No. 3
	Mixed	Yellow
Wednesday	89	91½
Thursday	90	92½
Friday	90½	92½
Saturday	90½	92½
Monday	90	92
Tuesday	90	92

Chicago.—December corn 77c; May 78½c.

Oats.—The volume of business in this department has been comparatively small with the trade dull and easy. Prices suffered a fractional decline on Monday through the weakness of wheat and corn. A year ago standard oats were quoted at 39c per bushel. Last week's Detroit quotations were:

	Standard	No. 3
	White	White
Wednesday	51½	50½
Thursday	51½	50½
Friday	51½	50½
Saturday	51½	50½
Monday	51	50
Tuesday	51	50

Chicago.—December oats 47½c per bu; May 51½c.

Rye.—Foreigners are buying this cereal for export and the market is firm with cash No. 2 quoted at \$1.25 per bushel or 2c above last week's price.

Beans.—The Detroit Board of Trade has advanced quotations on the local market and the trade rules firm with immediate delivery and prompt shipment quoted at \$5 per bushel and October delivery at \$4.95. These quotations do not seem to be on a par with prices as reported from up state points. In Chicago the market is firm and quiet with supplies light. Michigan pea beans, hand-picked, are quoted there at \$6@6.25 per bushel and eastern red kidneys at \$5.75.

Seeds.—This market is active and easy with prime red clover quoted at \$9.65; alsike \$10; alfalfa \$9@10; timothy \$2.40 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$8.40; seconds \$8.20; straight \$8; spring patent \$8.90; rye flour \$7.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$26.50; standard middlings \$28; fine middlings \$35; cracked corn \$36; coarse corn meal \$30; corn and oat chop \$34 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$14@15; standard timothy \$13.50@14; No. 2 timothy \$12@13; light mixed \$13.50@14; No. 1 mixed

\$11@12; No. 1 clover \$10@11. Straw.—Rye straw \$8.50@9; wheat and oat straw \$7.50@8 per ton in carlots.

DAIRY AND POULTRY PRODUCTS.

Butter.—The market has advanced in all grades of butter and is strong at the advance. Creamery extra 34c; do. firsts 32½c; dairy 27c; packing stock 25c per lb.

Elgin.—Prices are ½c higher. Local and export demand keeps the market firm. Price based on sales is 34½c.

Chicago.—Market lacked tone on account of prices which are ½c higher than last week. Creamery extras are quoted at 34½c; extra firsts 34c; firsts 32½@33½c.

Eggs.—The market is firm at an advance of 2c over last week. Firsts 33c; current receipts 30c.

Chicago.—A firm feeling exists with prices slightly advanced. Storage stock made the greatest advance. Firsts 30½@31c; ordinary firsts 28½@30c; at mark, cases included 22@29½c per dozen; firsts, storage paid 30@30½c.

New York.—Fresh gathered extra fine 39@41c; extra firsts 37@38c per dozen; firsts 33@36c.

Poultry.—Large receipts have caused lower prices and a weak market. Live broilers 18@18½c; No. 1 hens 17@17½c; others 15@16½c; ducks 17c; geese 13@14c; turkeys 24@25c.

FRUITS AND VEGETABLES.

Apples.—Market is firm and prices unchanged. Barreled stock \$3.50@4 or fancy; choice \$2@2.75; No. 2, 50@51 per bushel. At Chicago a steady feeling prevails for fancy stock which sells for \$2.50@4.75 per bbl; No. 2 stock \$1.50@2.

Pears.—Bartletts are steady at \$1.50@1.75 per bushel; other kinds \$1@1.25. At Chicago pears are in fair demand and No. 1 Bartletts bring \$5.50@6.50 per bbl; Seckle \$3@4.50; other kinds \$1.50@3; No. 2 all kinds \$1.50@1.75.

Grapes.—Delewares and Niagaras sell for 14@15c per pony basket, and Concord at 22@23c per 8-lb. basket. At Chicago the market is steady with prices slightly lower. Concord in 8-lb. baskets (6@6¼ lbs. net) bring 18@19c; Delewares 22@24c; Niagaras 15@18c.

Peaches.—Peaches are easy and unchanged. AA, \$1.25; A, \$1; B, 50c@51. At Chicago Michigan Smocks are selling at \$1@1.25 per bu; one-fifth bushel Gold Drops 10@15c.

Potatoes.—At Detroit potatoes in car lots bring \$1.40@1.50 for round and \$1.25@1.35 for long. No Michigan potatoes are quoted at Chicago but others bring from \$1@1.25 per bushel. At Greenville the farmers are getting \$1.10@1.12.

WOOL AND HIDES.

Wool.—A considerable business was transacted in the wool market last week. Prices are firm to higher and the market is strong in every department. Fleeces are moving more freely with the quotations showing an advancing tendency. Michigan unwashed delaines are quoted in Boston at 35@36c; do. combing 38@40c; do. clothing 30@31c.

Hides.—No. 1 cured 19c; No. 1 green 17c; No. 1 cured bulls 15c; do. green 12c; No. 1 cured veal kip 23c; do. green 20c; No. 1 cured murrain 19c; do. green 17c; No. 1 cured calf 30c; do. green 27c; No. 1 horsehides \$6; No. 2 do. \$5; No. 2 hides 1c and No. 2 kip and calf 1½c lower than above; sheepskins, as to amount of wool 50c@51.25 each.

GRAND RAPIDS.

Fresh eggs still climb with 31c as the quotation for the week's opening. Dairy butter is worth 26c. Grain prices at the mills are as follows: No. 2 red wheat \$1.51; rye \$1.10; corn 90@93c; oats 45@50c; barley 95c; buckwheat 90c. White pea beans, October delivery, are quoted here at \$4.25. Potatoes at outside buying stations are around 90c and tubers on the city market here sell in a small way at \$1.25@1.35. Cabbage is worth 90c@1.10; live fowls are quoted at 14@15c.

DETROIT EASTERN MARKET.

Tuesday morning the eastern market was doing a smaller volume of business than usual. Buyers were plentiful however, and prices are being well maintained. Tomatoes were offered in fair quantities at \$1.50@2 per bu; cabbage \$1.50@1.75; lettuce 40@60c; potatoes \$1.40@1.75; apples 75c@2, the fancy Snows being sold at the latter price; pears 75c@1.25; onions \$1.50; cauliflower \$2.25 per bu; eggs 42@45c; loose hay \$18@20 per ton.

LIVE STOCK MARKETS.

Buffalo.

October 9, 1916.

(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 220 cars; hogs 110 d. d.; sheep 40 d. d.; calves 1100 head.

With 220 cars of cattle today, our trade was absolutely rotten, bulk of the medium steers a quarter lower and the common steers very hard to move at any price, but there was a good demand for the cow stuff and the bulk of them sold steady. There was a good call for the best grades of stockers and feeders, but the common light kind sold very mean. It has got to the time of the year when we are bound to have large runs and we cannot expect any more than a steady market next week.

We had the largest run of hogs that we have had for some time and the quality was again very poor. Hogs weighing 200 lbs. were very scarce and this class sold but very little lower than Saturday's best time, while light grades sold anywhere from 10@25c lower than Saturday's average. The bulk of the sales were around \$9.60, with a few weighty kinds at \$9.75@9.85, one load at \$10. Pigs and lights, as to weight and quality, \$9@9.25; roughs generally \$8.75. Entirely too many light weight hogs here, which caused the slump in prices. While we look for a fair trade on anything carrying a little weight, there is a poor prospect for improvement on the lighter kinds. Our advice would be to follow no advances that we might have in the next month or six weeks and use caution in buying common and light kinds, entirely too many of the one kind coming to market.

With a light run of lambs today our market opened active and about steady with the close of last week, and we look for steady to strong prices the balance of the week.

We quote: Best lambs \$10.50@10.65; cull to common \$9@10; yearlings \$7@9; bucks \$5.50@6.50; ewes \$7.25@7.50; cull sheep \$3.50@5.50; wethers \$7.75@8; top veals \$12.75@13; heavy \$8@9; common and light \$10.50@12; grassers \$5.50@6.

Chicago.

October 9, 1916.

Cattle. Hogs. Sheep. Receipts today.. 25,000 35,000 30,000 Same day 1915.. 27,121 17,958 20,277 Last week..... 63,577 140,171 153,460 Same wk 1915.. 44,929 81,533 86,591

Hogs sold early this morning up to \$10, but declined about 5c later. Last week's hog receipts averaged but 211 lbs. in weight. Cattle were mostly steady today, with buying centered in butcher stock and medium to good steers, prime beefs being scarce. Prime range lambs were held as much as 25c higher, but buyers held off. Shipments of lambs and sheep from here last week reached 55,029 head.

Cattle started off last week with a better general demand for fat lots, and prices were higher, Monday's advance being followed by better prices on subsequent days, with reaction on Thursday. Eastern shippers were very fair buyers during the first part of the week, and the market was particularly strong for choice heavy beefs, the top sales being a dime higher than a week earlier and within 15c of the highest price of the year. The top price, \$11.35, was paid for 16 head of Illinois 1507-lb. steers and for 60 head of fancy old-fashioned heavy Ohio steers weighing from 1715 to 1824 lbs., such heavies being novelties these times. The bulk of the steers marketed sold for \$8@10.35, with the strictly choice cattle taken at \$10.80 and upward, while a good class brought \$10@10.80, and medium to good steers sold at \$8.75@9.95. Fair to pretty good little grass-fed killers brought \$7@8.25, with warmed-up steers going at \$8.30@8.70. Fat yearlings were salable at \$9.50@11.25, and there was an active and much higher market for butcher stock, cows bringing \$5.10@8.25 and heifers \$4.50@9.50, and a few head of fancy yearling heifers purchased as high as \$10@10.25. Cutters sold at \$4.55@5, canners at \$3.50@4.50 and bulls at \$4.50@8. Veal calves were active at high prices, sales ranging at \$11@13, with heavy calves selling at \$4.50@9. There was a fair amount of trading in stockers and feeders at \$5@7.75, with not much doing above \$7.50.

Hogs were marketed freely last week and prices shot downward with amazing rapidity, local packers having the situation well under control, as eastern shipping buying orders were on a small scale. At the close of the preceding week the top price of hogs was \$10.50, while on the following Monday top was \$10.27½, with a Tuesday top of \$9.75 and a Wednesday top \$9.67½. Reactions took place later, but it was evident that hog prices had seen their

highest levels and were going to be placed on a lower basis. Much surprise was expressed by many stockmen who had been holding on to their hogs under the impression that ultimately prices would be much higher. The packers have acted as a unit in forcing the market lower and have been buying large supplies of hogs in other markets and bringing them here in order to aid in depressing values. A large supply of hogs for winter packing is promised, and with old corn selling at 80 to 85c per bushel, stockmen are not disposed to hold hogs very long. At the week's close hogs sold at \$9.05@10.05, with pigs bringing \$6.50@9.25, while the heavy packing hogs brought \$9.05@9.70, light shippers \$9.70@9.90 and heavy shippers \$9.75@10.

Lambs from the ranges of Idaho, Montana, Nevada, Utah, and Washington were received in much increased numbers last week, and everything in the live mutton and feeder lines sold much lower than during the previous week, with the best feeding lambs selling on Monday for \$10 per 100 lbs., which was also top for the best killers. On subsequent days prime mutton lambs sold at higher prices, and the best yearlings and sheep sold better, as did choice breeding ewes. Feeder lamb trade centered strongly on weights of less than 60 lbs. Closing prices were: Lambs \$7.75@10.40; range feeding lambs \$8.75@9.90; yearlings \$7.25@8.60; wethers \$7@8.25; ewes \$3.50@7.25; breeding ewes \$6.25@10; bucks \$4.75@6; feeding yearlings brought \$7.50@8.60 and feeding wethers \$6.50@7.35.

GOVERNMENT CROP REPORT.

Corn.—State.—October 1 forecast 47,300,000 bushels; production last year (final estimate), 56,000,000 bu.

United States.—October 1 forecast 2,720,000,000 bushels; production last year (final estimate) 3,054,535,000 bu.

All Wheat.—State.—Preliminary estimate 12,631,000 bushels; production last year (final estimate) 20,448,000 bushels.

United States.—Preliminary estimate 608,000,000 bushels; production last year (final estimate) 1,011,505,000 bushels.

Oats.—State.—Preliminary estimate 42,700,000 bushels; production last year (final estimate) 64,260,000 bu.

United States.—Preliminary estimate 1,230,000,000 bushels; production last year (final estimate) 1,540,362,000 bushels.

Barley.—State.—Preliminary estimate 1,980,000 bushels; production last year (final estimate) 2,508,000 bushels. **United States.**—Preliminary estimate 184,000,000 bushels; production last year (final estimate) 237,009,000 bushels.

Rye.—State.—Preliminary estimate 5,291,000 bushels; production last year (final estimate) 6,045,000 bushels.

United States.—Preliminary estimate 41,884,000 bushels, production last year (final estimate) 49,190,000 bu.

Buckwheat.—State.—October 1 forecast 874,000 bushels; production last year (final estimate) 870,000 bushels.

United States.—October 1 forecast 13,900,000 bushels; production last year (final estimate) 15,769,000 bu.

Potatoes.—State.—October 1 forecast 17,600,000 bushels; production last year (final estimate) 20,945,000 bu.

United States.—October 1 forecast 301,000,000 bushels; production last year (final estimate) 359,103,000 bu.

Hay.—State.—Preliminary estimate 4,398,000 tons; production last year (final estimate) 3,458,000 tons.

United States.—Preliminary estimate 86,155,000 tons; production last year (final estimate) 85,225,000 tons.

Apples.—State.—October 1 forecast 4,080,000 barrels; production last year (final estimate) 3,150,000 barrels.

United States.—October 1 forecast 66,200,000; barrels production last year (final estimate) 76,670,000 barrels.

Peaches.—State.—Estimated production 1916, 2,010,000 bushels; estimated production 1915, 2,360,000 bushels.

United States.—Estimated production 1916, 36,911,000 bushels; estimated production 1915, 63,460,000 bushels.

Beans.—State.—Preliminary estimate 3,730,000 bushels; production last year (final estimate) 4,250,000 bushels.

United States (five states).—Preliminary estimate 9,900,000 bushels; production last year (final estimate) 10,278,000 bushels.

Prices.

The first price given below is the average on October 1 this year, and the second the average on October 1 last year.

State.—Wheat, 139 and 99c per bu. Corn, 85 and 77. Oats, 45 and 34. Potatoes, 138 and 40. Hay, \$10 and \$12.20 per ton. Eggs, 27 and 23c a dozen.

United States.—Wheat 136.3 and 90.9c per bushel. Corn 82.3 and 70.5c. Oats 44.5 and 34.5c. Potatoes 112.0 and 48.8c. Hay \$10.36 and \$10.39 per ton. Cotton 15.5 and 11.2c per pound. Eggs 28.1 and 22.3c per dozen.

THIS IS THE LAST EDITION.

MICHIGAN CROP REPORT.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKET.

Thursday's Market.

October 12, 1916.

Cattle.

Receipts 2853. There was a good run in all departments at the local yards this week and barring northern shipments off the Pere Marquette, everything arrived in good season; the last P. M. train had to hold for Thursday's market.

The quality in the cattle division was again common, a large number of thin stockers being in the receipts that were dull, although there was a good active demand from the country for this class with a little more flesh on them. The general market was fairly active at last week's closing prices on all grades. Milch cows and springers of quality were fairly active but the common grades were dull. The close was steady and nearly everything was sold as follows: Best heavy steers \$8; best handy weight butcher steers \$6.75 @ 7.50; mixed steers and heifers \$6 @ 6.50; handy light butchers \$5.25 @ 5.75; light butchers \$4.75 @ 5.25; best cows \$5.25 @ 5.75; butcher cows \$4.50 @ 5; common cows \$4.25 @ 4.75; canners \$3.50 @ 4.25. Best heavy bulls \$5.50 @ 6; bologna bulls \$5 @ 5.50; stock bulls \$4 @ 4.50; feeders \$6 @ 6.75; stockers \$4.50 @ 6.25; milkers and springers \$4 @ 7.5.

Bishop, B. & H. sold Parker, W. & Co. 4 cows av 895 at \$4.25, 2 do av 1040 at \$5, 2 butchers av 780 at \$6, 23 steers av 1056 at \$7, 6 do av 921 at \$7.40, 10 do av 993 at \$7.40, 1 bull wgh 1340 at \$5.50, 1 do wgh 990 at \$4.25, 16 butchers av 607 at \$4.75; to Thelan & M. 2 feeders av 790 at \$6, 3 stockers av 613 at \$5.75, 10 do av 574 at \$5.50; to Resnick 17 butchers av 668 at \$5.25; to Bray & B. 11 cows av 927 at \$4.25, 13 do av 875 at \$4.35; to Sullivan P. Co. 1 bull wgh 850 at \$4.75, 3 do av 897 at \$5.25, 2 do av 825 at \$5, 4 cows av 1110 at \$5.25, 4 do av 1000 at \$5.35; to Parker, W. & Co. 1 steer wgh 900 at \$7; to Nagle P. Co. 4 do av 1080 at \$7, 2 do av 960 at \$6.50, 1 do wgh 1070 at \$7.25, 1 cow wgh 1200 at \$5; to Fineman 7 butchers av 723 at \$5; to Goose 7 do av 521 at \$4.50; to Struble 7 stockers av 674 at \$5.50; to Parker, W. & Co. 10 cows av 963 at \$4.25, 1 bull wgh 1090 at \$5.25, 2 do av 1135 at \$5.50, 2 do av 860 at \$5, 1 do wgh 1470 at \$5.65, 3 cows av 1100 at \$4.35, 5 do av 930 at \$5.25; to Lowenstein 2 feeders av 870 at \$5.75, 8 do av 987 at \$6.50; to Hertler 5 do av 916 at \$6.50, 13 do av 927 at \$6.50.

Veal Calves.

Receipts 1188. The veal calf trade opened up about steady with last week, a few choice bringing \$13, but as the supply was large and a great number were common and heavy the general market on Thursday was about 50c lower. Best grades \$12 @ 12.50; mediums \$9 @ 11; heavy \$5 @ 7.50.

Bishop, B. & H. sold Sullivan P. Co. 5 av 155 at \$12, 17 av 140 at \$11; to Kull 12 av 145 at \$11.75, 5 av 180 at \$13; to Thompson 8 av 180 at \$12.25; to Parker, W. & Co. 7 av 155 at \$12, 19 av 145 at \$12.25, 18 av 160 at \$12, 10 av 140 at \$12, 2 av 170 at \$13, 46 av 140 at \$11.75.

Erwin, S. & J., sold Mich. B. Co. 4 av 130 at \$12.50, 7 av 180 at \$12.50, 7 av 150 at \$12.50, 4 av 130 at \$12.50; to Goose 3 av 315 at \$4.75.

Haley & M. sold Thompson 3 av 170 at \$12.75.

Sheep and Lambs.

Receipts 8039. The quality in the sheep and lamb division was generally poor and on Wednesday the market was about steady with last week but on Thursday sheep dropped 25c and lambs 10 @ 15c, best lambs selling at \$10 @ 10.15 and best sheep \$6.25 @ 6.50; the close was dull at the decline as follows: Best lambs \$10 @ 10.15; fair lambs \$9 @ 9.50; light to common lambs \$6.50 @ 8.50; fair to good sheep \$6.25 @ 6.50; culls and common \$3.50 @ 4.

Sandel, S. B. & G. sold Nagle P. Co. 42 lambs av 73 at \$9.85; to Bernard & P. 40 sheep av 85 at \$5.50, 38 do av 90 at \$5.50; to Sullivan P. Co. 11 do av 95 at \$5.50, 51 lambs av 65 at \$9.50, 36 do av 75 at \$9.75; to Young 24 do av 95 at \$9.50; to Nagle P. Co. 21 sheep av 120 at \$7, 22 do av 115 at \$6.75, 25 do av 125 at \$6.75, 90 lambs av 81 at \$9, 35 do av 70 at \$9.50; to Sullivan P. Co. 89 do av 75 at \$9.75, 59 do av 70 at \$9.50.

Hogs.

Receipts 13,404. The hog trade on Thursday was about 25c higher than on the same period a week ago or 5 @ 10c higher than the close on Wednesday. Pigs \$8.75 @ 8.85; other grades \$9.25 @ 9.60.

Wheat.—The estimated yield of wheat in the state is 15.76, in the southern counties 15.94, in the central counties 16.2, in the northern counties 14.20 and in the upper peninsula 19.80 bushels per acre. The per cent of acreage sown this fall as compared with last year is 88 in the state, 86 in the southern counties, 89 in the central counties, 91 in the northern counties and 95 in the upper peninsula. The average date of sowing wheat in the state and central counties is September 23, in the southern counties the 26th, in the northern counties the 18th and in the upper peninsula the 16th.

The total number of bushels of wheat marketed by farmers in September is 218,728 bushels. The estimated total number of bushels of wheat marketed in the two months August-September is 2,500,000.

Rye.—The per cent of acreage sown this fall as compared with last year is 92 in the state, 90 in the southern and central counties, 95 in the northern counties and 99 in the upper peninsula.

Barley.—Estimated average yield per acre in the state is 23.12, in the southern counties 24.30, in the central counties 22.64, in the northern counties 19.55 and in the upper peninsula 25.58 bushels.

Oats.—The estimated average yield per acre in the state is 28.96, in the southern counties 31.05, in the central counties 28.85, in the northern counties 24.25 and in the upper peninsula 32.53 bushels.

Corn.—The estimated average yield per acre in the state is 19.02, in the southern counties 18.84, in the central counties 18.88, in the northern counties 19.30 and in the upper peninsula 25.00 bushels.

Potatoes.—The estimated average yield in the state is 40.64, in the southern counties 29.05, in the central counties 39.15, in the northern counties 50.63 and in the upper peninsula 48.67 bushels per acre.

Beans.—The estimated average yield in the state is 7.48, in the southern counties 6.88, in the central counties 8.25 and in the northern counties 7.74 bushels per acre.

Sugar Beets.—The estimated average yield in the state is 6.96, in southern counties 6.79, in the central counties 6.72, in the northern counties 7.75 and in the upper peninsula 9.00 tons per acre.

Buckwheat.—The estimated average yield in the state is 11.58, in the southern counties 10.83, in the central counties 10.81, in the northern counties 12.55 and in the upper peninsula 18.00 bushels per acre.

Owing to the unfavorable season much of the acreage of corn, potatoes and beans was a total failure and crop correspondents quite generally claim that fully 25 per cent of the estimated acreage planted has not yet been harvested.

Crop and Market Notes.

Michigan.

Arenac Co., Oct. 3.—Corn will be below the average yield, but no husking done yet. Potatoes are nearly a failure; beans less than half a crop. Lots of wheat being sown. Apples a fairly good crop; a few pears and no peaches. Apples 40 @ 75c per bushel; wheat \$1.41; beans \$4.50; potatoes \$1.65; milk \$1.65; butter-fat 32c; cattle \$5; lambs \$8.

Branch Co., Oct. 5.—Corn is badly hurt by frost and there is a considerable amount of soft corn. Potatoes are almost a failure, and beans will average five bushels per acre. Cloverseed will yield about two bushels per acre. Some wheat yet to sow, as it has been so dry that the ground could not be plowed. There are not many feeders being kept, owing to the high prices and shortage of oats and corn. Apples are a fair crop in well kept orchards. Peaches and pears are light crops. Wheat \$1.50; corn 85c; oats 43c; potatoes \$2; butter 24c; eggs 28c; butter-fat 34c.

Hillsdale Co., Oct. 5.—Since the heavy rains about two weeks ago the farmers have been busy preparing the ground for wheat and rye, of which the usual acreage will be sown. Corn will average a light crop, though some pieces are heavy. Corn husking has just begun. Beans a light crop, averaging probably seven or eight bushels per acre. Cloverseed is a good crop, about two bushels per acre. Good winter apples will be rather scarce. Pears and peaches have been fairly plentiful. Wheat \$1.45; rye \$1.12; oats 40c; hogs \$9 @ 10; cattle \$8; spring chickens 17c; potatoes \$1.50; eggs 30c; dairy butter 30c.

Van Buren Co., Oct. 5.—Corn will be a light crop. Potatoes about half a normal crop. Beans are a light crop. Cloverseed is good and is cut but none hauled. There is about the usual acreage of wheat sown. There is a good crop of apples on sprayed or-

chards. Apples \$1; potatoes \$1.50 @ 1.75; wheat \$1.45; corn 90c; oats 45c; hay \$8; beans \$4.50 @ 6; hogs \$9.50 @ 10; cattle \$5 @ 6; dairy butter 30c.

Washtenaw Co., Oct. 7.—Corn mostly put in silos, and in some instances the silos are not filled to their capacity. There is very little corn to husk. Potatoes very poor, probably 25 per cent of a crop. Cloverseed is better than a normal yield. Not quite the usual acreage of fall grains sown, owing to continued dry weather. Yield of apples very good, peaches a fair yield. Wheat \$1.40; rye \$1.15; potatoes \$2; milk \$1.80; butter 36c; eggs 30c.

New York.

Columbia Co., Oct. 5.—There were heavy frosts October 1 and 2. Corn is only a fair crop. Early potatoes were good but late ones a short crop. Beans badly rusted. No wheat grown here, but the usual large acreage of rye sown. Apples a medium crop, pears a fair crop, but few peaches. Apples \$2 per bbl; beans \$6 per bu; eggs 45c; butter 35c. There is a milk war; producers are organized and prices are higher.

Pennsylvania.

Perry Co., Oct. 9.—Corn cutting is just beginning, and the crop will average about 60 bushels of ears per acre. Potatoes are almost a failure and sell at \$1.50 per bushel. Only a few beans raised here. Not much clover cut for seed, but it seems well filled. There is more land being sown to fall grain than usual, and some seeding yet to be done. Apples are not plentiful. Peaches about half an average crop, and sold in the orchard for \$1 @ 1.75 per bushel. Cattle being shipped in to be fattened at \$7.80 per cwt. Wheat \$1.40; oats 35c; rye 75c; corn 80c; eggs 32c; butter 28c; chickens 15c; veal calves 10c per lb.

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For Sale Thoroughbred Ramboulett Rams \$150.00 a head. F. O. B. here, also breeding ewes. Rams and ewe lambs. J. W. GRAHAM, R. 1, Davisburg, Mich.

For Sale Registered Hampshire Rams, young ewes and ewe lambs, also, Shire Stallion Bonding Harold 9754 B H S B. C. W. SAYLES, R. 3, Owosso, Mich.

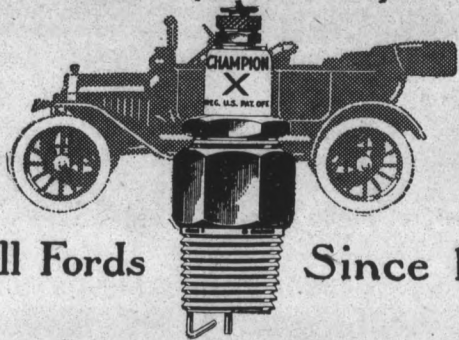
HORSES
Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmira, Michigan.

FOR SALE—Registered Percheron Stallions, Mares and Fillies at reasonable prices. Rams and ewe lambs. F. L. KING & SON, Charlotte, Mich.

The Fairfield Stock Farm, Percheron and Belgian and Oxford Down sheep. H. B. PETERS, Carland, Mich.

WANTED
Grade Percheron Stallion, heavy, black, from 1 to 5 years old. Address Box M-930, Mich. Farmer, Detroit.

Champion "X"
 "TOLEDO MADE FOR THE WHOLE WORLD'S TRADE"
Dependable Spark Plugs



On all Fords Since 1911-

PRICE 75c

Since 1911.

Year after year and every year the Ford output has been the largest in the world.

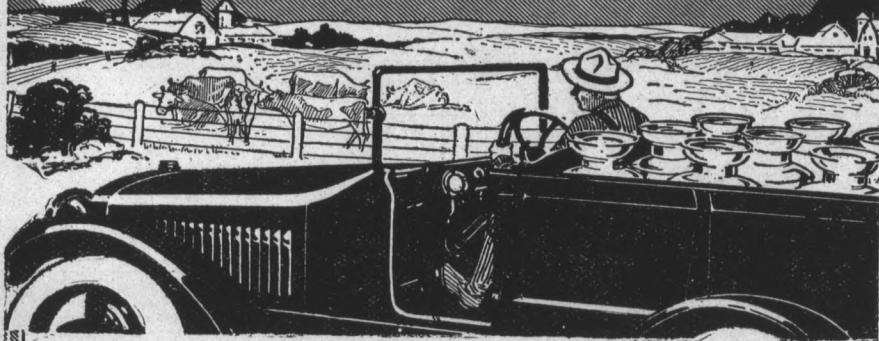
And the Champion X Spark Plug during all these years has been standard factory equipment on this world's record output.

The only reason that Fords have been equipped with Champion X Spark Plugs all these years is that they serve the wonderful Ford motor better than any other plug ever designed for it.

Remember this when you replace the spark plugs in your Ford and see that your dealer supplies you with Champion "X"—look for the name on the porcelain.

Champion Spark Plug Company
 513 Avondale Avenue Toledo, Ohio

Polarine
 THE PERFECT MOTOR OIL



For Correct Lubrication

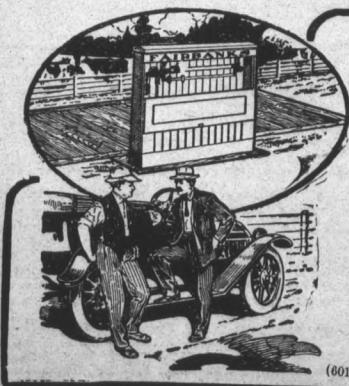
—Any Make Car at Any Speed or Temperature

It lubricates thoroughly the remotest friction surfaces. It enables your motor to deliver the maximum power of which it is capable. Polarine does away with excessive carbon and scored cylinders. Cut down your repair expense and increase the resale value of your car by using Polarine.

Use Polarine and lubrication begins the minute your engine starts.

Standard Oil Company (Indiana) Chicago, U. S. A.

Red Crown Gasoline gives more power, more speed, more miles per gallon



Base Your Prices on True Weights

Avoid the uncertainty of guess work by *carefully weighing* stock, grain and other products on Fairbanks Scales.

Fairbanks, Morse & Co.

CHICAGO - DETROIT

Milk and Public Health

By FLOYD W. ROBISON

THE very great value of milk in its relation to the public food supply is conceded. Its value in relation to other animal food products is not sufficiently known. Without doubt much would be gained from a standpoint of economy by an incorporation of ever increasing proportions of milk and its products into the daily menu.

Unquestionably the general healthfulness of the race would in a similar way be augmented by the use of larger quantities of milk in daily food.

This brings us to the consideration of what are the relationships existing between the milk supply and public health. The fact that municipal authorities the world over are giving primary consideration to milk above all other food products is sufficient proof that it is conceded to be the item which of all foods is most deserving of scrutiny.

Milk an Ideal Medium for Germs.

As we have observed from its composition, milk is ideal as a food. Being elaborated in the liquid phase and at the temperature of the animal body, it is easy to conceive that from these facts taken together it must be an ideal medium for the growth of micro-organisms and it is in this respect that milk bears its most intimate relationship to the public health.

Raw milk is a living product. Aside from the fact that it contains an abundance of food material it differs from many other animal food products in that it is not a passive food material. It is an organized product with cellular life which makes it in the raw state exceedingly stimulating as human food.

Raw Milk is a Living Food.

We know that pure milk contains living, activated cells; that it contains active enzymes and ferments of different types, all of which lend character to milk and are of great importance in its relationship to human food. These facts suggest certain ideal methods of handling the milk and along these lines is shown the superiority of raw milk over pasteurized or heated milk. In other words, raw milk has the characteristics of living milk and heated milk presents the same characteristics as other cooked animal food. We have observed likewise that the cooking and preparation of some types of foods are responsible for the devitalizing which has become so alarmingly conspicuous in our national diet.

Laying aside, therefore, the very close, ideal relationship existing between pure milk in the raw state and adequate nutrition, it is the consideration of milk in its relation to bacterial infection that commands our most careful attention still, at the present time.

The Sour Milk Germs.

It is not strange that the small cellular organisms should find milk an ideal medium for their life activities. Probably the most common bacterial change which occurs in milk is that brought about through the activity of the organism which produces lactic acid in the milk. The fact that milk sours after standing for some time has been known since milk was first used as a food, but the reason for the presence of the lactic acid in milk—just why souring takes place—has been the development of the researches of comparatively recent years. The presence of bacteria in milk was known as early as 1850 but scientists at that time did not think to connect the bacterial activity which was known to exist in milk with the phenomena of the souring of milk. Souring was a term which indicated a progressive stage of development in food products. Its behavior was known generally but no inquiry was made into it. It was not until Louis Pasteur began his series of

classic investigations that the relationship, which we now know to exist between bacteria and the souring phenomenon in milk, was proven.

Even at that time the evolution of lactic acid and the mode of its production was not known. Much chemical work, varied with its bacteriological reinforcement, has been performed in late years, as a result of which we now know that very few of the chemical changes which take place in milk, which increases or decreases its food value and which change its relationship to public health, are the result of the activity of any one set of micro-organisms. Souring changes, as well as other changes, vary in each different milk, caused by the associative action of the different micro-organisms present.

The Milk Distributor's Reason for Pasteurizing Milk is to Keep it from Souring.

We have learned that the most desirable change which can take place in milk in its relation to public health as well as its relationship to public food supply is the souring change. The activity of the organism which promotes souring is the type of activity in milk which should be encouraged. Strangely enough, the organisms promoting the creation of lactic acid are the ones which have been most strenuously fought in commerce. The desire apparently of commercial milk distributors is to get milk upon the market and in the hands of the consumer before it turns sour. Consequently various expedients have been resorted to to accomplish this result. A number of years ago preservatives were used to prevent the growth of sour milk organisms until the practice was stopped by municipal inspection laws. Since then pasteurization, or heating of milk, has been resorted to until it is quite common in the cities of this country that pasteurization measures are enforced by law. The main thing accomplished by this is the prolonging of the period in which milk may be put upon the market in spite of the fact that it is exceedingly doubtful if it removes appreciably the hazard to public health, and likewise in spite of the fact that it does admittedly appreciably lower the food properties of the milk itself.

One hesitates to criticize severely an ordinance requiring pasteurization of milk. Theoretically it has little in its favor but until we have adequate inspection of milk, not only as it enters the city but at the premises of the dairymen, and adequate protection of the product during its entire transportation to the consumer's door, we are inclined to concede an advantage in the interests of safety on the side of pasteurization.

DOES RAPE SCOUR LAMBS?

I would be inclined to think that rape was prone to produce scours with lambs if it were not for the fact that some of the old ewes are also scouring on the permanent pasture of mixed grasses. I therefore think it is the succulency of the feed, rather than the plant itself that causes the trouble. Any green, succulent food is liable to do this. The permanent pasture has greened up since our rains and acts as fresh pastures does in the spring.

COLON C. LILLIE.

ALWAYS SIGN YOUR NAME.

Frequently inquiries are received from subscribers who neglect to sign their name or give their postoffice address. Such inquiries are not replied to under our rules. To receive prompt attention the enquirer must sign his name and give his postoffice address. The name will not be published if request for this omission is made.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.

A GRANGE COMMUNITY CENTER.

In the "Grange Forum" is an interesting account of the successful community Grange work now being carried on at Wixom. This work was inaugurated by Berto A. Holden, who has been prominent in Grange work throughout the state, and Rev. Fay Cilley, former pastor of the Wixom Baptist Church.

The article from the "Forum" follows:

"Of late years much has been said about the needs of rural communities, and all students of the subject agree that the 'Get-together' idea is the solution of the rural problems. Many rural communities, and many semi-rural (small villages), have been trying to maintain two or three separate and distinct churches, as many separate Sunday schools and aid societies, etc. They try to maintain and support several pastors and their families and only half succeed. By co-operation they could maintain one strong virile church organization and employ the most capable of pastors.

"While the 'Get-together' idea is being preached, and much is written about it, a rural community at Wixom has been putting these ideas into practice. Wixom has one church, the Methodists, Baptists, Congregationalists, Prebyterians and all other denominations worship under the same roof and at the same altar. Their minister is as liberal and broad-minded as his congregation. They have one Sunday school with 190 members. They have an organization for community betterment, a federated committee, and have now bought and are operating a purely co-operative store.

"Wixom has been placed on the map. Hundreds of churches, hundreds of Granges and rural communities are discussing how Wixom does it. Ten years ago not one farmer and not one child in a thousand could have told even in what county Wixom is located, now a majority know of Wixom in Oakland county.

"Who put Wixom on the map? There is a reason for all things. Things don't just happen. There are prime movers back of all great movements. In this case the credit is largely due to Rev. Mr. Cilly, who until a recent date was pastor of the Baptist church, and B. A. Holden, Master of the Grange at Wixom. These men are the moving factors—they had a vision and the power of leadership. Their good wives and families, and other men and women of the community have also had a hand in the work.

"What Wixom has done, other rural communities can do. Let us all get the Wixom spirit and the 'Get-together' idea."

AMONG THE LIVE GRANGES.

The Feature of the gathering of the Grangers of the county for the Shiawassee Pomona Grange at Laingsburg, was the address of State Master J. C. Ketcham, of Hastings, on "Organization." Mr. Ketcham, always an interesting and entertaining speaker, was at his best and gave many valuable thoughts on the subject. He also found time to urge support for state-wide prohibition and condemned in strong terms the attempt of the liquorites to befog the issue with wet "home rule." If his advice be followed every member of the Grange will work and vote to make Michigan dry and to defeat home rule.

Farmers' Clubs

Associational Motto:

"The skillful hand with cultured mind is the farmer's most valuable asset."

Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

FARMERS' CLUB FAIRS.

The Riley-Olive Farmers' Club held their September meeting at Merle Beach, September 22. The fair was well attended and exhibits fine. Prof. Bibbins, of M. A. C., judge of grain and vegetables, said he had found no better grains this year. Prof. Burgess, judge of poultry, gave some good poultry points. Miss Brusselbach, teacher of domestic science, of Lansing high school, gave good judgment on the ladies' exhibits. The Club gave them all a rising vote of thanks. Dinner was served at noon. Cliff Plowman and Miss Dean furnished fine music. Prosecuting Attorney Fehling gave an address on "Community Spirit," saying the cultivation of community spirit was needed to produce better things for the farmer. It will produce better men and women and better citizens. Better citizens will vote for the good questions of the day, and they must get out and vote and teach our citizens to respect our flag. Rev. O. J. Price, of Lansing, gave a short talk. Prof. Burgess gave some fine piano selections. Club voted to hold a fair next year and to take our exhibits to the county fair. The next three meetings are: October, Mr. and Mrs. August Wott; November, Mrs. and Mrs. C. T. Rockwell; December, Mrs. Edw. Pike, at which meeting officers will be elected for the ensuing year.—Mrs. Ella Blizzard.

The Somerset Farmers' Club held their annual Club Fair for the Junior agriculturists of the township of Somerset, Saturday, September 23, at the home of Mr. and Mrs. E. B. Lane. There being no entries by the boys, the girls carried off all the prizes. The two classes were from 10 to 14 and 14 to 18 years in age. There was a fine display of hand-made garments, each exhibitor showing three garments. To make it plain, there was machine work, crocheted trimming, also embroidery, all of which showed remarkable skill and talent with the needle. These young girls were superintended by the Mrs. Blanch and Ruth Westcott. Miss Hollinger, domestic science teacher of the A. H. S., was the judge and awarded the first prize of the class A, from 10 to 14 years, to Miss Rose Baker, 11 years; the second prize to Miss Gladys Westcott, 12 years; third, Miss Berenice Watkins. Class B, 14 to 16 years, first prize to Miss Lucetta Randolph; second, Miss Aseneth Somers, of the eight-weeks' club. Miss Lucile Stearns received first prize for best ladies' leather pocketbook, and Miss Kathleen Smith received first prize on poultry. After dinner the meeting was called to order by the president, Mrs. Jay Chandler, and all joined in singing America. Prayer by the Rev. E. Guenther, roll call and business, after which an interesting program followed, at the competition of which the Club adjourned to meet with Mrs. Margaret Branch, Saturday, October 28.—Mrs. Z. E. White, Cor. Sec.

CLUB DISCUSSIONS.

The Salem Farmers' Club held its September meeting at the pleasant farm home and grounds of Mr. and Mrs. Wm. Geigie. About 75 guests and members of the Club sat down to a most bountiful dinner. As many old friends were present the re-union and the social hour were much enjoyed, out-of-door sports being much in favor with the gentlemen. The Club was called to order by President Thompson and a good program given. Miss Geiger and Mrs. Johnson furnished music, which was much enjoyed. Miss Tena Bovee gave a practical number on "Hoing Between the Rows," and Mrs. W. Burns a humorous recitation entitled, "Hannibal Hawkins' Wedding." Deforest Thompson read an interesting selection on "The Value of Sweet Clover as a Hay and Forage Crop." The president of the W. C. T. U. suggested that we have a speaker on state-wide prohibition. This was favorably received. Speaker to come in October. Rev. Carter spoke of the fake amendment called "The Home Rule," which is wholly a liquor measure. Adjourned with music to meet in October with Mr. and Mrs. Webb Lane.—Cor. Sec.



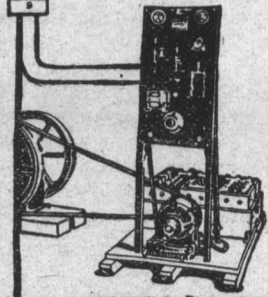
Clean, Safe Light at Your Finger's End

A TOUCH of the finger sends a flood of pure, mellow, man-made sunlight anywhere you will—instantly. Out there in the cow-barn, up in the hay-loft, out in the kitchen, where the women-folks are cleaning up after a late supper. Anywhere, any time you say.

Western Electric Farm Lighting Outfits

lay all the convenience and cleanliness and pleasure of electricity right at your feet, no matter how big or small or isolated your farm may be. There is a Western Electric Farm Lighting Outfit built for you, to meet your particular needs. It will hitch right up to the gas engine you already have.

Write for our book, "Brightening Up the Farm," which we will send free on request. It tells exactly what you want to know.



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INCORPORATED
500 South Clinton Street, Chicago, Ill.
EQUIPMENT FOR EVERY ELECTRICAL NEED

WESTERN ELECTRIC COMPANY:
Please send me, AT ONCE, illustrated booklet, No. MF-21 on your Electric Farm Lighting Outfit.

Name _____
P. O. Address _____
State _____

O. I. C's. 4 last fall boars big growthy ones, also last spring pigs either sex, not akin. Farm 1/2 mile West of depot. Otto B. Schulze, Nashville, Michigan

O. I. C. & Chester White
Strictly Big Type. April boars large enough for service, also have May boars, that are good ones. Can furnish in pairs not akin. Have been breeding the big type for 15 years. The kind that fill the pork barrel. Newman's Stock Farm, Marlette, Mich. R. 1.

FOR SALE: 85 head of thoroughbred O. I. C. hogs will be sold at my annual hog sale Oct. 15. Write for catalog. E. B. Milet, Fowlerville, Michigan.

O. I. C's. 14 choice young boars ready for service. 2 sows to farrow in Oct. and open gilts. Cloverleaf Stock Farm, Monroe, Mich., R. No. 1.

Large Strain P. C.—Two nice fall gilts to farrow in Aug., Sept. and Oct., get one of these sows with pigs by side. H. O. SWARTZ, Schoolcraft, Michigan.

AT HALF PRICE
Genuine big type Poland China Hogs, Bred Sows, Spring Pigs. Boars ready for service. Special, the best big type fall yearling boar in Michigan. Also registered Percheron Stallions and Mares. J. C. BUTLER, Portland, Mich., Bell Phone.

Big Type Poland Chinas Spring boars, at reasonable prices. Order soon to save express. A. A. WOOD & SON, Saline, Michigan.

Poland China Spring Pigs
Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big, stretchy, splendid individuals, with best breeding. Pigs from such matings will please you. Get our prices.
HILLCREST FARM
KALAMAZOO, MICH.

FOR SALE. P. C. Sows, "Big Type" bred for Sept. farrow. Extra good 7 months boar. March and April pigs. S. O. B. Minorcas. R. W. Mills, Saline, Mich.

Large Type P. C. Gilts and sows. Bred for Mar. and April farrow. Sired by Big Des Moines, Big Knox Jr. and Giant Defender. Bred by Big Knox Jr. Smooth W onder 3 and Big Jumbo, four great boars in state. Come or write. W. E. Livingston, Parma, Mich.

For Sale Poland Chinas either sex, all ages. Something good at a low price. P. D. Long, R. F. D. No. 8, Grand Rapids, Mich.

Large type P. C. Sows and gilts all retained for my Feb. Sale. A few choice Spring boars ready to ship. W. J. HAGELSHAW, Augusta, Michigan.

BIG TYPE POLAND CHINA Spring boars that will please you, priced right. G. W. HOLTON, Route 11, Kalamazoo Michigan.

Large Stiled Poland China Pigs, either sex, pairs not akin. Oxford sheep, both sex and Short-horn Bulls. ROBERT NEVE, Pierson, Michigan.

For Big Type P. C. Spring Boars and Gilts bred for April farrow. Write or call on Armstrong Bros., R. 3, Fowlerville, Mich

Big Type P. C. boars from litter of 11. Mar. farrow \$20 each. Ship C. O. D. to reliable parties. Thos. Barnett R. No. 1, Lone Dale Stock Farm, Pontiac, Michigan.

WALNUT ALLEY HERD. Big type Poland Chinas headed by Hadley Desmoins No. 21925 and Smothe Jumbo Jr. No. 24387. Sows represent blood of two A wonders. Pigs of either sex ready. A. D. Gregory, Ionia, Mich.

Big Boned Poland China boars shipped C. O. D. call and price. E. R. Leonard, St. Louis, Michigan.

Big Type P. C. Three extra good yearling boars, good 1000 lb. prospect. Sired by Big Type King our 1000 lb. boar. Spring pigs either sex. Special three Mow breed boar pigs. W. Brevbaker & Son, Elsie, Mich.

For Sale Big Type Poland China Spring Boars ready for service, best breeding at prices you can afford to pay. Pedigrees furnished. M. E. HESS, Lone Cedar Farm, R. 2, Pontiac, Mich.

GROWTHY THE DISEASE PROLIFIC "MULEFOOT" RESIST- PROFITABLE HOG ING
FOUNDATION STOCK FROM BEST BLOOD OF BREED
THE CAHILL FARMS
KALAMAZOO - - - MICHIGAN

Hampshire Swine. Bred Sows and gilts for August and September farrow s. Spring pigs, sex both. FLOYD MYERS, R. No. 9, Decatur, Ind.


HAMPSHIRE Boars, sows, gilts and pigs. Choice stock. A. E. BACON & SON, Sheridan, Michigan

Hampshire Hogs. Only a few spring boars left. \$25 each. Taking orders for bred gilts. John W. Snyder, R. 4, St. Johns, Mich.

SHEEP.
SHROPSHIRE
I will be at the State Fair with 20 field rams. All are for sale and are a better bunch than has been seen in Detroit in recent years. KOPE-KON Farms, S. L. WING, Prop'r. Kinderhook, Mich.

INGLESIDE FARM
Offers Twenty registered Shropshire Ewes being bred to a prize winning ram.
H. E. POWELL, IONIA, MICH.

(Additional stock ads on page 365).



Lousy Hens Won't Lay

During the hot summer months lice propagate and take possession of the poultry house. Your hens are moulting now and to grow new feathers saps all of their vitality. If you allow your hens to be pestered with lice during the moulting period, they are sure to settle with you at the egg basket this winter. Now is the time to make sure your hens are free from lice. Get a package of

Dr. Hess Instant Louse Killer

Sprinkle it in the nests and on the fowls. Add a little to the dust bath occasionally during the fall and winter, then your hens will be lice-free, contented and winter layers. It also kills lice on horses, cattle, colts and calves. Sold in sifting-top cans. GUARANTEED.

1 lb., 25c; 3 lbs., 60c (except in Canada)

Manufactured by
Dr. HESS & CLARK
Ashland Ohio

DEALERS

and farmer-agents can secure exceptional opportunity to represent us in unoccupied territory. Easy sales and good profits assured on Blue Hen Mammoth Incubators, Blue Hen Lamp Incubators and the


Blue Hen Colony Brooder

—better than ever with the 1917 additions and improvements. Yet sold at the same low price, possible only by increased demand and larger production. Write for our special selling proposition.

Watson Mfg. Co.
Drawer 48 Lancaster, Pa.



\$14.50



On page 1460 of our big new General Catalog is shown a famous 1½-horse power Economy Gasoline Engine priced at \$28.95. Shipped from warehouse near you and guaranteed satisfactory.

Sears, Roebuck and Co., Chicago.

KITSELMAN FENCE

Get It From the Factory Direct

HORSE-HIGH, BULL-STRONG, PIG-TIGHT

Made of Open Hearth wire, heavily galvanized—a strong, durable, long-lasting, rust-resisting fence. Sold direct to the farmer at wire mill prices. Here's a few of our big values:

- 26-inch Hog Fence - 15 cts. a rod.
- 47-inch Farm Fence - 21 cts. a rod.
- 48-inch Poultry Fence - 27 cts. a rod.

Special Prices on Galv. Barbed Wire.

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.

KITSELMAN BROS. Box 278 Muncie, Ind.



FREE

Wonderful Money Saving Fence Book. Over 150 Styles. 13¢ Per Rod Up. Gates—Steel Posts—Barb Wire.


DIRECT FROM FACTORY—FREIGHT PAID

All heavy DOUBLE GALVANIZED WIRES. 13¢ per rod up. Get free Book and Sample to test.

THE BROWN FENCE & WIRE CO.,
Dept. 49 Cleveland, Ohio

POULTRY JOURNAL

Practical, Snappy, Instructive—YOUR PAPER. For the breeders of Mich., Ind., Ill., Wis., only. You should read it. 50¢ a year, 3 mo. 10¢. Agents wanted. Big 4 Poultry Journal, Desk 26, Chicago.



Don't Sell Off Your Pullets

ACCORDING to reports from poultry dealers in different sections of the country, many farmers are selling off practically all of their poultry. There are at least two reasons for this: Grain prices are high and poultry prices are higher. Some of these people believe they cannot afford to feed such high-priced grain, while others doubtless feel that they cannot afford to ignore the opportunity to sell fowls at such unheard of high prices.

While there is some sound logic in this argument, we should stop and consider the after-effects of this policy. Selling off the hens and pullets is bound to reduce the winter and spring egg supply. The number of eggs now in storage is said to be less than the average at this date. What the effect of this will be on prices, a few months hence, can easily be imagined. A decided shortage in all kinds of poultry products next season is confidently expected. Therefore, it looks now as if it might be well worth while for those who still possess a good flock of layers, to think the matter over, seriously, before yielding to the temptation to sell.

Keep All Promising Chickens.

Look over your poultry and cull out every undesirable bird, retaining all of the young hens that are known to be good layers and all of the promising, thrifty looking pullets. If the fowls have been roosting out-door during the summer, now is the time to put the houses in proper shape for winter. If possible, get the poultry into the houses without being caught. This can be done by using some grain and a good deal of patience. If the pullets refuse to go in the house after being "towed" in a few times, they should be kept confined for a few days. Of course, it must be the same house where they will be kept during the coming winter, else the work of training would all count for nothing.

Beware of over-crowding; no flock of hens will do their best in cramped quarters. It is not advisable to keep young pullets and hens together, if the latter are abusive. Pullets are always timid.

Give the fowls plenty of floor space. We have a scratching shed attached to each and every poultry house on the premises (intended for chickens), and yet we aim to give the fowls room to exercise, as much as possible, in the roosting quarters, by having all of the roosts on a level at one end of each house, and dropping-boards under the roosts. These boards form a solid floor beneath, so that none of the manure can get onto the floor proper. The roosts are about fifteen inches above these boards. The latter are easily cleaned. This gives the fowls a chance to scratch among clean litter.

Keep the Hens Busy.

We gather large quantities of dry leaves every autumn. These make the best scratch material we have ever used. They contain no dust and being free of weed seeds they make an excellent fertilizer or mulch for flower beds or small fruits. It is no task at all to keep the hens busy when there is plenty of litter to dig in. The leaves should be anywhere from six inches to a foot deep all over the floors. We scatter some small grain, such as wheat or kaffir, among the litter and stir it up a little so it will not be too easily found. We like to do this work at night after the hens are on the roost. Then, as soon as it is clear enough in the morning, the hens are at work. This gives them an appetite.

Feed a Variety.

If not enough grain is used to satisfy the hens (and we like to give them plenty) we throw down a sheaf of wheat or rye. By the way, if no other litter is available, the straw from unthreshed grain provides a good scratch material. There is no better way to feed grain than unthreshed.

We give the poultry all the good buttermilk they can drink, the year round. Also, plenty of pure water. Last winter we fed whole grain almost exclusively, giving a warm mash once a week for variety; also, for the purpose of giving a basis of salt and purpose of providing a means of feeding salt and powdered charcoal, which we think are required by all poultry.

We provide green food all winter. Sprouted oats give best results, but raw cabbage will answer very well. At night we feed whole corn, allowing a quart for each eight or ten hens, according to variety of fowls. In very cold weather it is warmed before being used.

ANNA W. GALLIGHER.

PLANNING FOR WINTER EGGS.

The birds that are to give us our winter eggs should be selected in the early fall. This allows for time to groom them, as the trainer does his horse for a race, and get them settled down to business when eggs are high and scarce. If every poultry keeper would do this, there would not be the usual period of high prices that occurs in late fall and early winter. Of course, it costs a lot more to produce eggs at this time than in the spring and it is true that eggs must sell for more money than at the natural season for laying, but the top prices that usually prevail at Thanksgiving are partly caused by the fact that only a comparatively few give their birds the proper attention. The hen will lay without much coddling in the spring but she will not in the fall and winter.

Dispose of the Culls.

We keep a careful watch of the old hens and cull them down pretty closely. As they stop laying in the fall, they are sold off. The Plymouth Rocks and Wyandottes, under heavy feeding, get rather fat at this time. Some of them are disposed of as early as July and August, but it has been our experience that these birds often lay well up to the middle of September. As

this is written about that time, we have a considerable flock of these birds that have had but a short vacation and that during the hottest weather. However, we look over the flock frequently and any one that becomes excessively fat is taken off. The poultryman who has a chance to sell such birds to a retail trade will find it pays to dress the fat hens at home and get all the profit. Later in the fall, when considerable numbers of the birds are removed, they are sold alive to the city dealer. By culling the old hens in this way, we get the flock down to winter size by the latter part of September. A good-sized flock of old birds is wintered over each season. They are usually one year old hens and are selected for laying qualities and because they appear to be of strong vitality. Such birds are used for breeders and at the same time they are usually good profit producers as layers. The hens that have a short vacation in August, then moult and get their new coats quickly, are the ones that make winter layers.

Care of the Pullets.

Of course, we must, to a considerable extent, depend upon the pullets for winter layers. These are hatched out fairly early and are kept growing by good care right from the start. We do not believe a stunted bird will ever amount to much. Pullets are placed in winter quarters early. This does not mean that they are shut into restricted pens but they are given the right conditions at night and allowed plenty of liberty during the day. On cold stormy days the birds are better off in the house. We feed a ration something like the following: Corn, 100 pounds; wheat, 100 pounds; oats, 50 pounds. A dry mash at the rate of five pounds of bran, five pounds of shorts, three and a half pounds of beef scrap. Oyster shells, charcoal and grit are kept where the birds can get them. Early in the fall, when insects are plentiful, the beef scrap is cut down but later this is about the right proportion. After the grasses are killed by frost, ground alfalfa is added to the mash, or some other form of green feed is given.

C. H. CHESLEY.

The Beginner's Breed

IN reading over articles concerning the lives of successful poultry breeders, it is not uncommon for the articles to say, "He began with Leghorns but after breeding them for several years, sold all of the original stock and purchased Barred Rocks, later he discarded these for White Rocks and he has now been breeding this variety with great success for fifteen years." Possibly the breeder may have started with some other breed but the story reads somewhat the same. The poultry breeder who has attained great success with a variety of fowls did not necessarily start in with one breed and stick to it regardless of his preferences for all time.

An article of this kind might be taken as meaning that frequent breed changes are all right. This is not so. It costs money to change breeds of poultry the same as it costs money to change any kind of business, but no man is at fault if he makes a change after proving to his own satisfaction that he is on the wrong track. Frequently the beginner starts out with a great deal of enthusiasm for one breed. For some reason that is unexplainable the results are not all he expected. This may result in selling the fowls or in keeping them in a half-hearted manner though no profit is made and continued breeding is neglected. Breeders of this kind do injury to the poultry business by turning out poor birds and seemingly proving to the world that pure-bred poultry are not much good and practically no better than the many-colored scrubs.

It is possible that the beginner de-

scribed above is in reality the right kind of a man to make a success with poultry. If he had owned Barred Rocks and changed to Leghorns he might have liked Mediterranean fowls better, or if he disliked the smaller breeds he might have changed to a general purpose fowl and enjoyed a great deal of success in the business. There are some men who do not like the ordinary utility breeds and they have great success with such breeds as the Campines, Lakenvelders, and Houdans. Breeds of that type are attractive to many men who would not care to worry about Plymouth Rocks or Leghorns.

The summing up of the situation proves that a man is not always a failure in the poultry business because his results with some certain breed have been medium to poor. It sometimes pays to change. If you have to change too much it probably means that you do not really like the chicken business but a few switches may put you on the right track. As the history of many of the leading poultry breeders and fanciers indicates, they did not find their "best breed" with one try, but they stayed with the business and usually began to succeed with the second or third venture.

Ingham Co.

R. G. KIRBY.

FEEDING SILAGE TO POULTRY.

As a cheap succulent feed in winter for laying hens, we have found silage made from mature corn and soy beans very effective. While no record was kept of the actual increase in the number of eggs obtained over a no-silage

ration there was a difference in favor of the silage even when fed in moderate quantities. Owing to the soy beans having been grown with the corn there was a large proportion of the former. The value of such silage for laying hens has been appreciated by a number of farmers who grow the soy beans with the corn for silage for feeding cattle and sheep. A basket full thrown into the boxes twice a day will be eaten by the hens in a brief time in cold weather.

One poultryman who raises over two thousand chickens a year, both for show purposes and to supply a retail trade, built a ten-foot silo to furnish succulent feed to the chickens during the cold months. By keeping a half-dozen milk cows he is able to feed enough of the silage each day during the warmer months to keep it from spoiling. He has found it a very economical feed, especially when his twenty acres of hills does not furnish much root crops in dry summers. When fed in combination with milk and ground corn it makes a good ration for fattening fall-raised chickens for the winter market.

The addition of soy beans to the corn, that is, ensiled together, provides silage rich in protein and therefore makes it very nutritious. When the corn is ensiled in the mature stage, just when it is glazed, poultry will consume almost all of it.

The poultryman recommends that it be fed twice a day in such quantities that the most of it will be eaten within an hour after feeding. It should not be allowed to lie in the pens or lots as it will soon sour and mold. If the silage is fed in a self-feeder of narrow dimensions in warm weather it will not ferment as quickly as when it is strewn out in boxes and it will be much easier to keep the pens clean and free of undesirable odors. Better results will be had by feeding the silage separate from other feeds.

Indiana. J. L. JUSTICE.

RESULTS OF CAREFUL BREEDING.

Careful breeding is a good foundation upon which to build successful egg production. The poultry department at Purdue University has been keeping careful records of their Single Comb White Leghorns during the past five years, and by using pedigrees in selecting the breeders, some good layers have been produced.

In the first four years of the work only two Leghorns produced 200 or more eggs in one year. In 1915 a dozen pullets have exceeded the 200 egg mark by October 1. This good production is thought to be due to careful mating. Many people fear the term "inbreeding," believing that the breeding of close relationship will surely prove detrimental to the flock. Line breeding, commonly known as careful inbreeding, has been the source of much good results in breeding. Only by it can blood lines be concentrated or the characteristics of the parent exist in the offspring in percentage greater than one-half.

The trap nest is the only sure means of measuring a hen's egg production. Continued trapnesting for more than one year will often bring surprises. Following are two examples of the value of line breeding and the use of the trap nest.

Hen No. 1416 laid only 49 eggs as a pullet, but in the following four years laid 174, 149, 147, 167 eggs. In 1912 she was mated to her son, No. 1015, and produced No. 720, who laid 106, 131 and 210 eggs in her first three years of life. This hen mated back to 1015 produced No. 3001, that has laid 211 eggs. This pullet mated back to 1015 produced four daughters that were laying by September 15. Male No. 1015 contained half the blood of his dam, No. 1416. No. 720 had three-fourths; No. 3001 had five-eighths, and the pullets nine-sixteenths of the blood of No. 1416. Thus four generations after the hen was first mated there ex-

isted several pullets with a predominance of her blood.

Another interesting mating is with the famous hen, Miss Purdue. This bird laid 224 eggs as a pullet and 219 eggs a year old hen. Her number was 272. Mated to Male No. 2154 she produced Male No. 572. This male mated back to No. 272 produced pullet No. 3019 who has laid 202 eggs. This hen mated back to No. 572 produced a pullet that was laying by September 15, 1915. This means that the pullets hatched in 1915 are five-eighths of the blood of Miss Purdue. Other pullets from Miss Purdue's blood that are laying well in 1915 are No. 3015 with 209 eggs, No. 3013 with 211 eggs.

Pedigree breeding with poultry is as practical as with cattle, and is the only sure means of breeding up high egg production.

CAUSES OF POOR RESULTS WITH POULTRY.

People are complaining of the high price of eggs at this time of the year, and in my opinion there are two potent reasons for their scarcity. One is the fact that many poultry raisers do not provide them proper food, but suppose that hens can pick up what is needed.

Now no farmer would think of using his cows that way. He would see that they had regular feed and plenty of it. On farms where there are grain fields near, the hens may pick up what they need, but in villages and on many farms there is no such source and they should be fed every day a grain feed.

Then another cause of non-laying is the little mites which infest most all hen houses and frequently drive the hens to trees and on fences.

To properly appreciate the torture of these little pests, every person should allow themselves to be covered with them once in a life time at least, and stand it for an hour.

These mites are small and when empty of blood are greyish in color, but when gorged with blood appear red and are then called red mites.

They hide in crevices and behind paper pasted on walls or under any small obstruction. Kerosene oil or kerosene emulsion will kill them, but the best remedy I have found is the common lime-sulphur used to spray fruit trees, using one part of it to 25 of water, and spray the coops thoroughly, getting into the bottoms of nest boxes and on perches, side walls and even roofs. In fact, do not leave an inch of surface untouched.

One can use a compressed air potato sprayer, but where one has an orchard sprayer, he can take off the extension rod, put the nozzle on the end of hose and with good pressure spray the coop nicely.

The hose will allow it to be carried to all parts. Repeat every three weeks during hot weather. E. H. ALLYN.

FOWL FEEDING EXPERIMENTS.

In a test by the Pennsylvania Station five pens of White Leghorn pullets were fed alike except as to the protein feeds allowed. Pen 1 received meat scrap, or animal protein, and pens 2, 3, 4 and 5, 33 per cent of soybean meal, gluten meal, linseed oil meal, and cottonseed meal, respectively, in a dry mash. All pens received the ordinary grain mixture. It was observed that during the first year the mortality was high in the pens receiving the oil meal and the cottonseed meal. A number of the birds apparently broke down under the strain of the highly concentrated rations.

Five pens of 50 White Leghorn pullets each were fed alike except as to succulent feeds. Pen 1 received a commercial product, succulent tablets; pen 2, dried beet pulp; pen 3, mangel beets; pen 4, sprouted oats; pen 5, no succulents of any kind. The total egg production for the year was 4,432, 4,600, 5,247, 5,317, and 4,239 for the respective lots.

Help Your Molting Hens They Will Pay You Back

Hens can't lay when molting; they are too busy making feathers. And at this critical time they are in danger of contracting disease because of weather changes, lack of plumage and weakened condition.

Help them now. Quick action is needed. They will pay you back in dollars and cents.

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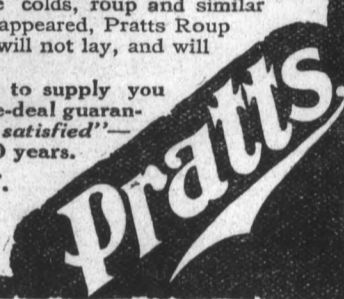
will help a lot, too. Used in stormy, cold weather as a preventive, it will keep the flock free from troublesome colds, roup and similar disorders. If these troubles have already appeared, Pratts Roup Remedy will save the birds. Rousy hens will not lay, and will give the disease to the rest of the flock.

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RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$3; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00, 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$6 to \$25, 10 eggs \$3. A. E. Crantou, Vassar, Mich.

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A. R. O. herd tuberculin tested, headed by grandson of King Segis Pontiac. PEACELAND STOCK FARM, Three Rivers, Mich. Chas. Peters, Herdsman, C. L. Brody, Owner, Port Huron

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Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Vertigo.—Have a calf three weeks old that has sick spells, causing the muscles of body to jerk, and I might add that all four legs seem to be affected. Whatever this sickness is, it seems to produce a cramped condition of the muscles, then he falls down. He was all right until he was a week old. H. S., Fenwick, Mich.—Give your calf 2 ozs. of castor oil or the same quantity of epsom salts every 12 hours until his bowels move freely, then give him 10 grs. doses of potassium bromide two or three times a day.

Suppurating Foot.—My nine-year-old mare cut her foot on barb wire, making a wound below the fetlock; since then foot and leg has suppurated in several places. Now I am at a loss to know what to do. She has had the attention of two different Vets., but they fail to effect a cure. J. C. H., Bloomingdale, Mich.—Give your mare 1 dr. of fluid extract nux vomica, 2 drs. fluid extract cinchona and 2 drs. of fluid extract gentian at a dose twice a day. Dissolve 1 oz. iodoform and 2 ozs. of boric acid in one-half gallon of water and wet sores two or three times a day.

Abscess—Fistula.—My eight-year-old mare ran down in flesh last fall, showed lameness in right hind leg, bunch finally broke open in two places on the outside and has discharged pus ever since. The abscess broke on the inside first, then wound healed, bunch formed on outside and opened and is now running. She is not lame and is able to work. I am told her liver is sluggish, but I have been unable to cure her. J. E. H., Fenwick, Mich.—Mix together one part fluid extract of nux vomica, three parts tincture cinchona (Comp.), and three parts tincture gentian compound. Give her a tablespoonful at a dose three times a day. Apply one part iodoform and four parts boric acid and force some of this powder to bottom of cavity once a day.

Impure Blood—Worms.—I have been a reader of the Michigan Farmer for many years and am always interested in the veterinary column, but failing to find a parallel case to mine I would like to know what to do for a horse that is troubled with a whole lot of small boils on shoulder. Have a dog that seems to be bothered with worms. G. G. W., Cedar Springs, Mich.—Sponge off sores with one part bichloride of mercury and 1000 parts water twice a day. Give him a dessertspoonful of Donovan's solution of arsenic at a dose in feed or water two or three times a day. He should be well groomed twice a day, kept in a clean, well ventilated stable or turned out to grass. For every pound that your dog weighs, give him 1 1/2 grs. of powdered areca nut in a tablespoonful or two of milk at a dose three times a week for two weeks, unless you believe that the first dose or two produced the desired effect.

Partial Paralysis.—I have an old high-lived horse who has for the last two months seemingly lost part of the control of his hind quarters. Occasionally he has pain, causing him to act as if he had colic, except that he merely lies down and pants for a time, then gets over it. He sways on his hind legs when walking, swinging perhaps a little more to the left side and is unable to travel fast. G. M., Charlevoix, Mich.—Your horse suffers from a species of locomotor ataxia and his recovery is quite doubtful. Results obtained by giving drugs in this kind of a case is decidedly uncertain; however, you had better give him 1 dr. doses of fluid extract of nux vomica, and 30-gr. doses of potassium iodide three times a day. Also, a tablespoonful of Fowler's solution at a dose night and morning.

Infected Joints.—I have a colt two months old with bunch on stifle which is causing lameness. Within a few days it showed lameness in fore leg and I applied a blister which fails to give relief. W. L., Munith, Mich.—Apply equal parts of tincture iodine and camphorated oil to bunches three times a week.

Imperfect Mastication of Food.—I have a calf about three months old, she eats grass, but she lies down to chew her cud; she swallows it and when it comes back about half of it drops out of her mouth. After that she seems to be very hungry. We feed her milk three times a day. Is there any help for her? T. E. S., Alanson, Mich.—I am inclined to believe that your calf will be all right as soon as it eats more roughage. However, you had better examine its mouth for there may be a small foreign body lodged between the back grinder teeth.

J. E. BURROUGHS
79 HEAD
October 23, 1916

DETROIT SALE

State Fair Grounds, Detroit, Mich.

W. E. FELLOWS
26 HEAD
October 23, 1916

A Sale Truly Remarkable From Standpoint of Individuality and Breeding



Thistleton Christmas Hengerveld. She is a fine type of the daughters of Johan Hengerveld Lad. She has record of 25.83 lbs. butter 7 days, milk 593.6 lbs; 30 days, 102.59 lbs. butter, 2641.8 lbs. milk. Both she and her son by the 35 lb. bull are in the sale. The 2 nearest dams of her son will average 39.55 lbs. She is how bred to the 35 lb. bull.



Louise Van Beers DeKol is a good example of the daughters of Johan Hengerveld Lad. Her dam is a 20.02 lb. granddaughter of Sarcastic Lad. At 33 months this heifer made 18.87 lbs. butter from 359.8 lbs. milk. She is bred to the 35 lb. bull. When this picture was taken she had been in milk for 11 months.

The stock in this sale represents the cream of the herds of these two consignors, who because of stress of other business, find it necessary to reduce their live stock efforts.

No old cows, three teaters or otherwise blemished cows are to be offered, nor the real young calves. All animals will be straight and right and all over six months of age are tuberculin tested by State Approved Veterinarian.

This is without doubt the finest lot of Michigan Cattle ever offered at Public Sale.

36 Daughters and 20 Granddaughters of Johan Hengerveld Lad

This bull is one of the best sons of Hengerveld DeKol, and his dam was the wonderfully fine imported cow Uilkje (25.34 lbs. butter from 661.6 lbs. milk record made year ago before the day of high records). Probably never again will so many granddaughters of Hengerveld DeKol be found in one sale. The daughters of Johan Hengerveld Lad are fine individuals and big producers; 25 of his 54 A. R. O. daughters have heifer records of from 20 to 31 lbs. of butter in 7 days.

25 Daughters of Ypsiland Sir Pontiac De Kol

This bull sired by a son of Sir Korndyke Manor DeKol is from that wonderful cow Pontiac De Nijlander—35.43 lbs. butter from 750.2 lbs. milk in seven days at 5 years, 32.73 at 4 years, 30.01 at 3 years, the only 30 lb. 3 year old who has passed the 30 lb. mark at her next two succeeding lactation periods.

25 Daughters of Sir Lieuwkje Korndyke Kate DeKol

This is a 30 lb. bull his dam being the 30 lb. cow Lieuwkje Pauline DeKol Wayne who also has a 30 lb. daughter and a 30 lb. granddaughter.

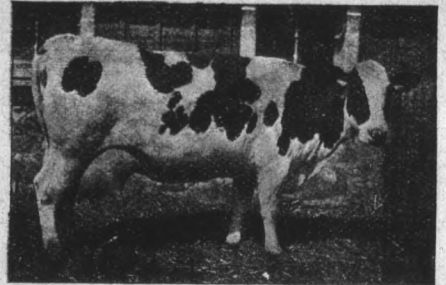
The sire of this bull is Sir Woodcrest Korndyke Kate DeKol, who has about a score of A. R. O. daughters, 3/4 of them having records from 20 to over 36 lbs. The daughters of Sir Lieuwkje Korndyke Kate DeKol are just coming in milk and four already have A. R. O. records averaging over 15 lbs. butter at an average age of twenty three months.

This bull is full brother to the 36 lb. cow Lieuwkje Lynfield Pleasant Valley Kate (twice 32 lb. cow).

The balance of the animals in the sale, some 15 or 20 head comprise some exceptionally fine animals including a daughter of King Walker, and several sired by sons of King Segis, Paul Beets DeKol, Johan Hengerveld Lad and other fine sires.

No Breeder Can Afford To Miss This Sale

Sale Under Management of
Liverpool Sale & Pedigree Co., Inc.,
LIVERPOOL, NEW YORK.



Lillie Green Hengerveld is not in the sale herself but she is well represented by 2 daughters and two granddaughters. She is a good example of the type of foundation cows of the Burroughs herd. She has a 5 year old record of 27 lbs. butter from 644.6 milk, while at 33 months she made 25.02 lbs. butter from 462.1 lbs. milk a state record when made. Lillie Green Hengerveld is a daughter of Judge Hengerveld De Kol.



Burtondale Lady Pietertje is a sample of the 25 daughters of the Fellows herd sire Sir Lieuwkje Korndyke Kate DeKol who is from the 50 lb. cow Lieuwkje Pauline DeKol Wayne and full brother to the twice 32 lb. cow Lieuwkje Lynfield Pleasant Valley Kate (36 lbs). She has a 24 months record of 15.25 milking almost 50 lbs. per day.

Duroc Jersey Herd Boars

Special Offering of High Class Fall Bear Pigs. Breeding and Individuality good enough for breeders who appreciate the best.

Also some good farmer's boars. This is the best lot of fall pigs we have ever had to offer. A cordial invitation is extended to visit the farm and inspect the stock. If you wish one of the best young Jersey bulls in Michigan we have him for sale. For further particulars, address,

Brookwater Farm, Swine Dept., Ann Arbor, Mich.

Having decided to go out of the Dairy Business I will Sell at

Public Auction, Oct. 16, 1916, at 1 o'clock sharp

My entire herd of registered and high grade Jersey Cattle

Consisting of twenty head of milch cows and seven heifers. Average Herd Test 5%. This herd has been bred up from year to year until it has become one of the most productive in the State. A heifer Lady Edith of Hillside from this herd won the world's record for producing the greatest amount of butter fat in one year. Farm three miles south and one and one quarter miles east of South Lyon and two and one half miles West of Salem. Auctioneer F. J. Boyle, Prop. H. S. Munn.

REGISTERED JERSEY BULLS FOR SALE

1 yearling, and Bull calves from 8 to 10 months old. Also 3 cows. Write your wants. SMITH-PARKER, R. D. No. 4, Howell, Michigan.

Maple Hill Farm Registered Jersey Cattle for Sale

Both sexes. The kind that pay at the pail. J. R. Worthington, R. No. 7, Lansing, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered bulls, Scotch topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & L. R'y. Address G. R. Schroder Mgr. BIDWELL STOCK FARM Box 3, Tecumseh, Mich.

Shorthorn Cattle of both Sex for Sale

W. W. KNAPP, Howell, Michigan.

DAIRY BRED

Shorthorns of best Bates strains, young bull 8 months old for sale, price \$150. J. B. HUMMELL, MASON, MICHIGAN.

AND POLLED DURHAMS FOR SALE

Have red roan and white. Have over 100 head in herd. C. Carlson, Leroy, Mich.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum Secy. Cant. Mich. Shorthorn Breeders' Assn. McBride, Mich.

Milking

Shorthorns, roan 3 year old. Bates bred herd bull \$250. Young bulls and heifers. DAVIDSON & HALL, TE CUMSEH, MICHIGAN.

SHORTHORNS FOR SALE

8 Bulls, also females. W. B. McQuillan, Howell, Mich

FOR Sale—Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 11 to 13 mos. old John Schmidt, Reed City, R. No. 5., Michigan.

Shorthorns For Sale. Young bulls \$100. Bred cows, and heifers \$150 for quick sale. Write W. J. BELL, ROSE CITY, MICHIGAN.

Polled Durham Bull Calves ready to ship. Recorded in your name. Also Mule Foots, good ones, get prices. Frank Bartlett, Dryden, Michigan.

HOGS.

Berkshires of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, E. 2, Bloomington, Mich.

The Very Finest Berkshire Pigs Cheap C. S. BARTLETT, Propr. Pontiac, Michigan

Our Berkshires

Have just arrived home from the Fairs, where we won twelve champions, thirty-one firsts, twenty-seven seconds, five thirds and two fourths, a total of seventy-seven premiums.

Some of The Winners Are for Sale

and we also have plenty of others, consisting of a few choice fall boars and gilts and spring pigs of both sexes.

They are Priced to Sell as we need the room for fall litters. Swigartdale Farm, Petersburg, Mich.

Berkshire Boars and gilts. May farrowed, large growthy fellows. Also a litter just ready to wean. A. A. PATTULLO, R. 4, Deckerville, Mich.

BERKSHIRE SOW and yearling gilt bred to farrow early in September. Boars ready for service. Also open gilts. Chase Stock Farm, R. 1, Marlette, Mich.

ROYALTON Bred Berkshires. Extraordinary offer. Bred sows, boars ready for service and pigs both sexes, selling out, all registered stock with papers. D. F. VALENTINE, Supt., Temperance, Mich.

Berkshires. Of various ages, either sex, open or bred, prolific strains. Registered, at moderate price. Elmhurst Stock Farm, Almont, Michigan.

DUROC JERSEYS

A choice lot of spring pigs, both sex, pairs and trios, not akin. Prices reasonable. Send for pedigrees. THE JENNING'S FARMS, R. F. D. 1, Salsby, Mich.

J. W. KEENEY, Erie, Mich. Males, good ones for Dec. service. Breeder of Duroc Swine. D. M. & T. local from Monroe or Toledo, Keeney Stop.

Duroc Jersey Special. Pigs 8 wks. old \$12 each. Trio for \$35, no kin. Reg. and Del. anywhere in state for next 10 days. J. Robert Hicks, St. Johns, Michigan.

Duroc Jersey Boars Two June 1915; 12 April 1916. Write for description. I guarantee satisfaction. J. H. Banghart, East Lansing, Mich.

Duroc Jerseys. Some yearling & Spring boars good enough to head your herd. Will sell Eureka Cherry King 6745. Ask about him. W. C. Taylor, Milan, Mich.

Duroc Jerseys—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

For Sale, Duroc Jerseys, choice breeding spring pigs either sex. Prices right. John McNicoll, Station A, R. 4, Bay City, Mich

Duroc Jerseys. Apr. pigs either sex, boars ready for service and a few bred sows for Sept. and Oct. Some Holstein cows bred for fall. E. H. Morris, Monroe, Mich.

FOR SALE

Six registered Jersey Duroc boars, old enough for service. These are from a seven hundred pound sow and from a litter of ten and are as good as any I have ever seen anywhere. Each one is good enough to show at any fair and good enough to head any herd. They are in fine condition and active, never having been confined in a pen. Price, if taken at once, twenty dollars each; if crated, two dollars extra. Delivery to express or freight station free. A. T. STARK, OTSEGO, MICHIGAN.

DUROC JERSEYS: A nice bunch of Spring Gilts, also 3 good Spring Boars old enough for service. Wm. W. Kennedy, R. 3, Grass Lake, Mich.

Duroc Jersey Boars of the large, smooth boned type. E. D. Heydenberk, Wayland, Michigan.

For Sale Duroc Jersey Boars, big heavy boned fellows, Spring and Fall Pigs. M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

Duroc Jerseys Big Type Boars with breeding and individuality that is hard to beat, bred from prize winning stock, prices reasonable, satisfaction guaranteed. F. J. DROTT, R. 1, Monroe, Michigan

Duroc Stock hogs. Spring gilts, tried Sows, August Pigs. Percheron Stud Colts. E. J. ALDRICH, Tekonsha, Mich. R. 1, Bell Phone.

Dobson's Durocs Combined, size, quality, breeding. Hard boars, spring boars, spring sows for sale. Odo. L. Dobson, Quincy, Michigan.

Big Type Boars: O. I. C's ready for service Bred Gilts—Fall Pigs. Registered in buyers name, shipped C. O. D. Prices very reasonable. J. Carl Jewett, Mason, Mich.

O. I. C. Swine—A nice lot of spring pigs. Write your wants. Meadow View Stock Farm, Holland, Michigan. R. R. No. 5.

O. I. C. Serviceable Boars shipped C. O. D. Registered in purchaser's name. H. W. MANN, Danville, Mich.

CHESTER WHITES Sows bred for Sept. farrow, spring pigs in pairs, not akin. 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

CHESTER WHITE March pigs either sex. Booking orders for Sept. 1 pigs, 2 year old sow farrowed 9 pigs Sept. 5. Herd boar is 2 yr. old. Ship C. O. D. W. A. Searcy, Mt. Pleasant, Mich. R. 4.

CHESTER Whites: 5 pigs include 1st. & 4th. boar, 1st. & 3rd. sow & 1st. & 2nd. bred sows young herd at State Fair, \$140 for all. NEWTON BARNHART, St. Johns, Mich.

Registered O. I. C. Swine Stock For Sale—All Ages

Correspondence Solicited, Visitors Always Welcome

Brightside Farm Grand Lodge, Mich.

400 Big Type O. I. C. and Chester White Pigs From Feb. Mar. and Apr. farrow sired by the five best boars in the state. School Master 52707 who won more champions, defeated more champions than any boar show 1915. Also 2nd, sire to our undefeated breeders young herd at 7 state fairs, Allen junior champion at Wis. State fair 1914, and Captain Jim 33161 under 6 months boar and Junior champion at every state fair show 1915. Then we have Le Deux, model 20015, first in class at Sioux City, Iowa, 1914. Get our catalogue, its free. We Register Free; Guarantee satisfaction in every way. ROLLING VIEW STOCK FARM, Cass City, Mich.

O. I. C's Spring boars ready for service. Gilts good ones. Satisfaction Guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C. Stock all Sold JULIAN P. CLAXTON, Swartz Creek, Mich.

O. I. C. SWINE: If you are interested in O. I. C's, let me start you with a choice pair or trio, not akin, or a gilt, due to farrow about September first. A. J. GORDEN, R. No. 2, Dorr, Mich.

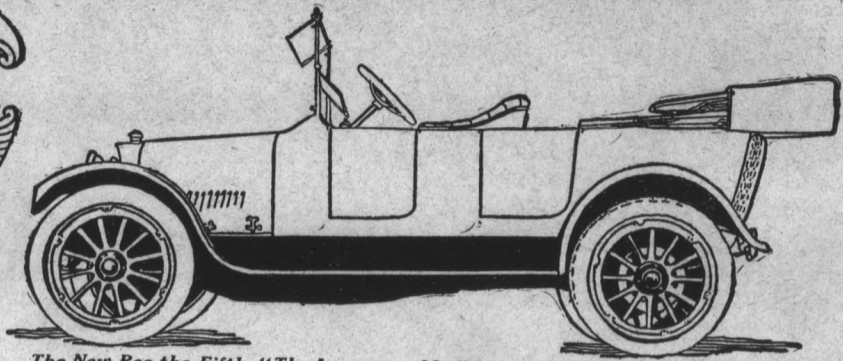
O. I. C. Choice Gilts bred for fall farrow and Spring Pigs. Prime Winning Stock. Write for low price. A. V. HATT, Grass Lake, Michigan.

O. I. C. Swine and Reg. Holsteins, few boar pigs of May farrow at a reasonable price, quality considered. ELMER E. SMITH, Redford, Michigan.

O. I. C's. Yearling boars; bred sows and July pigs of *A No. 1A* quality at reasonable prices. Write me. H. F. BAKER, Cheboygan, Mich.

O. I. C. HOGS Fine April Gilts and Males. Pairs no relation. At a bargain if taken at once. J. R. Way, Three Rivers, Mich.

(Additional stock ads on page 367).



The New Reo the Fifth, "The Incomparable Four," \$875, f. o. b. Lansing

Here's the Secret of Reo Reliability

DOUBTLESS YOU'VE WONDERED—knowing as you do, how absolutely dependable are Reo cars—how free from troubles and how low in upkeep cost: **YOU'VE WONDERED** wherein lay the secret of that reliability that is Reo.

WELL, WE'LL TELL YOU. And then you'll wonder at its ridiculous simplicity.

YOU READ, IN THE ADS, how this engineer or that inventor has revolutionized the science of engineering and produced a wonder-working car.

YOU READ THAT every year—only this year it's another engineer. That revolutionary stunt of last year has been forgotten.

IT WAS AS IMPOTENT as a South American revolution—it didn't!

SO THE SECRET ISN'T to be found in any such feat or invention.

REO PERFORMANCE—reliability, dependability, uniformity of performance of all Reos, of whatever model or price—is the result of the taking of infinite pains in the designing, the making and the inspection of the Reo product.

IT'S THE LITTLE THINGS that count—not the big ones.

ANYONE—A BOY EVEN—can make a motor that will be "different." Or an axle, a transmission or a set of springs that might impress the tyro as new and wonderful.

BUT TO MAKE ANY of these vital units better—that is the task—that should be the aim. It has always been the Reo aim.

INFINITE CARE in the fabrication and then in the inspection, and finally in the testing of the assembled whole—that is the secret of Reo success in making, not the most but the best, automobiles.

IF THERE ARE 2000 PARTS in a motor car; and if there's an average of four machining operations on a part—that's 8000 chances for something to go wrong!

AND ONE DEFECTIVE PART—one, however small or seemingly insignificant—that does not fit absolutely, and you'd have a car that would be less than a Reo in performance—more than a Reo in cost of upkeep.

INFINITE PAINS, WE SAID: Perhaps that's too big a term. But if you could know how great is the task—how unremitting the care—to guard against even one little error creeping into any one of these 8000 places—you'd grant us the word "infinite."

"THOSE PESKY LITTLE TROUBLES that are always happening with other cars, are unknown to the Reo owner," says one Reo dealer, "and that's why the demand for Reos is so great."

WHEN YOU STOP TO THINK about it, the troubles you've had with other cars were not big troubles. Your motor didn't drop out of your car or your transmission strip or your frame break in two.

IT WAS THE LITTLE THINGS that pestered your motoring life—parts shaking loose or getting out of adjustment. Dust in bearings—oil leaks—everywhere. Squeaks and creaks and rattles.

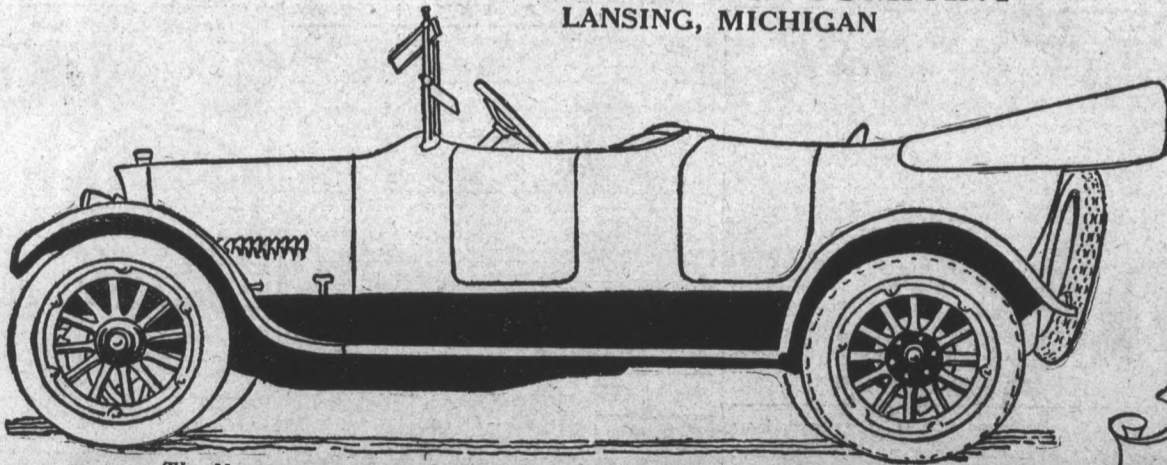
ALWAYS THE DREAD WHEN STARTING out that you might not return. Always the fear when in a hurry that some pesky little trouble resulting from some pesky little defect, of which you were cognizant, might delay you. Wasn't there?

WELL THEREIN LIES the big difference between Reos and other cars—the big difference is in attention to the little things.

IT IS NOT UNCOMMON—in fact—it is the rule—for a new Reo owner to drive his car thousands of miles—a year, two years—without even seeing the inside of a garage or lifting the bonnet to make an adjustment or repair.

HONOR AND FAITH and a Good Intent—these and the attention to little things they dictate—result in Reo Reliability as it is known the world over, "The Gold Standard of Values" in automobiles and motor trucks.

REO MOTOR CAR COMPANY
LANSING, MICHIGAN



The New 7-passenger Reo Six Touring Car, \$1150, f. o. b. Lansing

