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Authentic Figures on the Cost of Milk

By C. F. PRESTON

Chester County, Pa., Farm Agent

THE prevailing sentiment with the rank and file of dairymen throughout all of the east is that theirs is not a paying business and that if they are to be expected to furnish milk to the trade much longer a radical change in prices will have to be effected. The casual observer asks why farmers continue in a business which is other than lucrative. One answer is that they don't. In proof of this fact, witness the sale of herd after herd in our best sections followed by the turning of attention to some other line of farm work or to city employment with brighter prospects. A second answer to the question is that most farmers have been unable to keep up the fertility of their soil without manure, which, as a by-product of the dairy business, is largely responsible for the high average yield of grain and grass crops throughout the dairy section.

If one doubts the statement that on a great many farms milk is produced at an actual loss to the farmer, he should take pencil and paper and do a little figuring for himself. When he does this his calculations must not consist merely of adding the cost of his feed to the cost of his labor, subtracting this amount from his yearly receipts and arriving at the profit without further deductions. Contrary to this, he must figure as any long-headed business man would. The so-called overhead charges are there. They are actual and must be reckoned with and to ignore them, cherishing a delusion of their non-existence, is suicidal.

In Massachusetts.

Referring to a report of the Massachusetts Agricultural Experiment Station covering a period of years from 1896 to 1911, it is interesting to see both the itemized charges against the dairy and the cost of producing a quart of milk under Massachusetts conditions. For the station herd and during the period of years named the average cost of grain and roughage per cow is given as follows:

Grain.—Total cost, \$4,416.84; average cost per cow, \$33.72. Roughage.—Total cost, \$7,377.96; average cost per cow, \$56.32. Total food cost per cow, \$90.04. Percentage of total cost, grain, 37.4 per cent. Percentage total cost, roughage, 62.6 per cent.

It will be seen that the average cost of food consumed per cow was \$90.04 and the cost of grain was 37.4 per cent of the total cost.

In addition to the feed cost as given above we have the overhead or fixed charges itemized in the following manner: Basis 20 cows; (1) On barn for housing cow and feed (per cow valued at \$75), interest, taxes, depreciation, repairs and insurance, 10 per cent, \$7.50. (2) On value of cow (\$75), interest and taxes, 7 per cent, \$5.25; depreciation, 15 per cent, \$11.25. (3) On value of barn tools, dairy implements and the like, per cow (valued at \$7.62), interest and depreciation, 15 per cent, \$1.15. (4) Value of perishable tools and supplies, per cow (cards, brushes, record sheets, soap, salt, bedding, vet-

erinary service, etc.), \$9.00. (5) Cost of pure-bred bull, per cow, \$4.00. (6) Care of cow and milk for one year, \$35.00. Total per cow, \$73.15.

A credit of \$17 is given for calf and manure which is made to offset fixed charges to this extent and brings them to \$56 per head. Each cow in the station herd then had to face a yearly bill of \$146 or the sum of her feed and overhead expense.

The cows were for the most part Jerseys. The average yearly production in quarts was 2,683, which converted into pounds is 6036.3, and which in this particular case makes 100 lbs.

sive. Average number of cows, 25 average food cost, \$84.07; fixed charges, \$50. Total cost per cow, \$134.07. Average production, 6,378.7 pounds, or 2,835 quarts.

The fixed charge of \$50 represents the overhead after \$15 have been deducted as a credit for calf and manure. From the above it is seen that 100 lbs. of milk cost \$2.12, and a single quart 4.78 cents.

In New Jersey.

From the thirty-first annual report of the New Jersey station we have rather significant figures on the cost of milk production, first when all home-

\$1.91 per cwt. or 4.31 cents per quart; with feed at market value \$2.21 per cwt., or 4.98 cents per quart.

In the first case hay was figured at \$4.82; green forage at \$2.68; corn stover at \$4, and silage at \$3.50 per ton, said to be actual cost of production. In the second case hay was figured at \$15; green forage at \$3; corn stover at \$8, and silage at \$5 per ton. The cows were unusually heavy and Holsteins largely predominated. They gave the remarkable average of 8,661 lbs. of milk per cow, testing 3.96 per cent of fat at a cost of 4.31 and 4.98 cents per quart respectively. In case of such a herd, if the farmer sold his roughage to his cows at cost, the cost of producing his milk at the farm would be 4.31 cents and if he secured market prices for his roughage the cost at the farm would be five cents per quart. The investigator states that "no charge is made for the investment in the farm itself or the dairy buildings and includes neither dairy apparatus, milk utensils, incidental expense, nor insurance."

Approaching the subject from the angle of a practical dairyman, the late Director Voorhees of the New Jersey Station presented figures on a somewhat different basis but arrived at practically the same figure. Allowing an average production of 7,500 pounds, he determined the cost of 100 pounds to be \$2.20 and that of a quart 4.83 cents. These figures are based on prices of labor, feed, etc., obtaining eight years ago.

In Chester County, Pa.

A former Chester county dairyman who found it inexpedient to remain in the business handed the writer a comprehensive set of figures which are argument enough in themselves for his selling the dairy. To economize in space his figures are given in condensed form and amounts chargeable yearly to each of his forty cows:

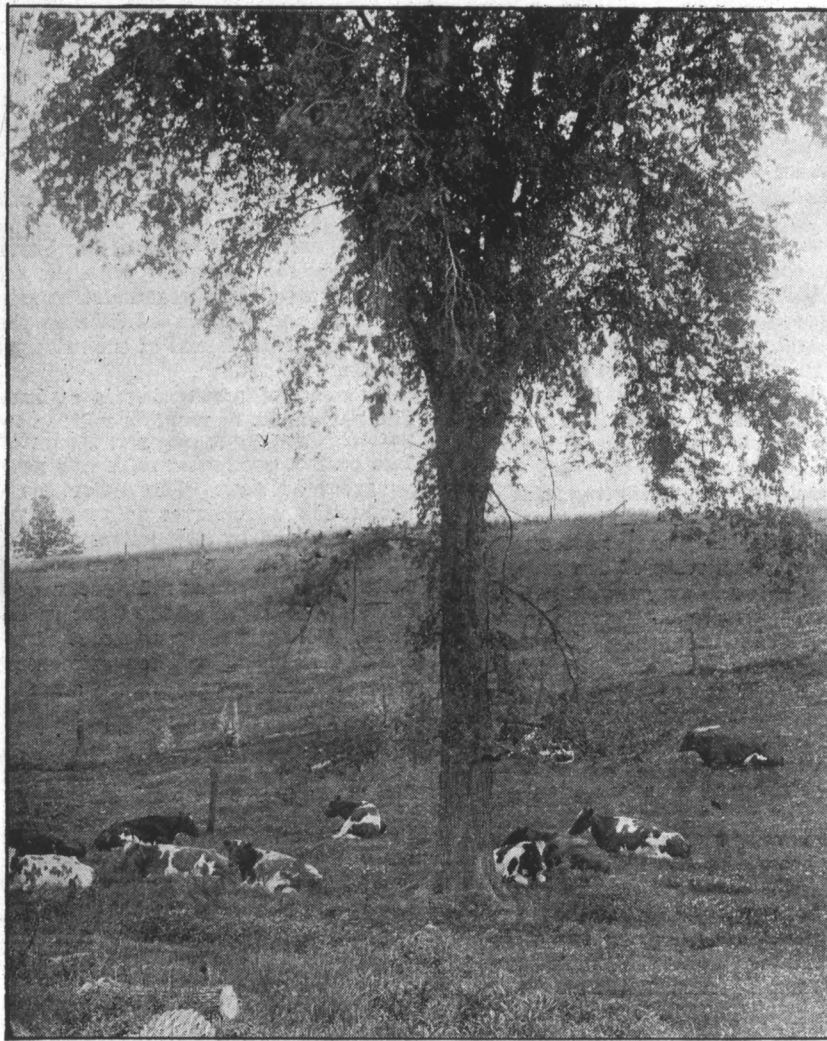
Investment in cows, barn, milk room and ice house and two 150-ton silos, \$11,400.

Interest and depreciation (cows), \$16; interest and depreciation on equipment, incidental to dairy, \$19.43; feed and roughage, \$83.08; marketing, including freight to Philadelphia, hauling to station, use, depreciation and loss of cans, (freight and can use are based on 7,300 pounds of milk per cow), \$32.85; use of bull, \$1.50; labor, \$20.90. Yearly total cost per cow, \$173.76.

These figures do not represent guesses or estimates but are taken from ledger, milk sheet and check stub and were so disturbing in their nature that a sale was advertised and the cows disposed of on the strength of them. The cows, by the way, were grade Holsteins of unusual merit.

In this man's calculation no credit is given for manure, but a rather generous allowance of \$5 is given each cow for her calf. In determining the cost of production the dairy is grouped into three classes according to their average. A group of his best cows averaged 3,900 quarts and naturally this

(Continued on page 295).



Summer Pasture as well as Winter Feeding is a Big Item of Cost.

of milk cost \$2.42, and a quart 5.43 cents. Commenting on these results the author of bulletin No. 145 has to say: "The figures indicate that the farmer having a superior herd of Jersey grades whose average milk yield is 6,000 lbs. per cow, should receive substantially 5.5 cents per quart for it at the farm in order to get a fair market price for his roughage and \$35 per year for his labor per cow.

In Connecticut.

The Connecticut Experiment Station publishes, in Bulletin No. 73, complete data covering work at the station dairy for the years 1907 to 1911 inclu-

grown feeds are charged at the actual cost of production, and second, when they are charged to the dairy at market values or what they would bring if sold locally and for cash. The data follows in order:

Number of cows, 31; average weight per cow, 1,231 pounds; average food cost per cow at cost of production, \$95.73, at market values, \$121.60; fixed charges per cow, \$70.22; total cost per cow with feeds at production cost, \$165.95, with feed at market value, \$191.82. Average production per cow, 8,661 pounds, or 3,850 quarts. Cost of milk with feed at production cost,

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DETROIT, SEPTEMBER 30, 1916

CURRENT COMMENT.

The West Michigan State Fair.

The fair season comes at the wane of a period of agricultural activity as a time of relaxation and entertainment, as an opportunity for farmers to compete in friendly contests with their choicest products of the season and as a means of educational inspiration for improvement for another year. For all these purposes the 1916 West Michigan State Fair was a complete success and the breaking of the daily attendance records showed that West Michigan appreciated the endeavors of the management to furnish entertainment, education and inspiration.

The fair was a complete success because in no instance was any department below the standard. The live stock departments were the subject of much favorable comment. All available space was taken and enough stock turned away to make a good county fair. The building containing the farm crops was artistically arranged and contained excellent exhibits of grains, fruits, vegetables, honey and dairy products. The county exhibits were especially interesting and instructive as they showed as completely as the space would permit the agricultural products of each county. The fruit show was of high quality and of high educational value because variety contests furnished excellent opportunity for the study of the suitability of varieties for home and commercial purposes.

The farm machinery exhibit was very complete in various devices which will make farm work easier and the farm home more modern and comfortable. The newest developments in mechanical aids such as tractors, trucks, lighting outfits and toilet outfits drew special attention. It was an excellent opportunity for farmers to keep posted on the latest developments along this line.

The auto show was greater than the expectations of the auto enthusiasts whose number are legion. The building was well decorated and autos for every need and most every purse, as well as auto accessories were shown.

The poultry building was a babble of chicken talk and crowing roosters. The discussion of the merits of the ribbon winners was no more frequently heard than the utility of the farm hen. This was a farmers' poultry show and on that account an annex nearly the size of the main building was necessary to house the exhibits. There were four times as many entries as the year before.

The dog show, in which there were many likable and fancy specimens of the canine family, was popular, especially among the urbanites who have

country homes. There was great interest in the judging, and the owner of a blue ribbon pet felt no uncertain pride in the winning of a prize.

The main building with its commercial exhibits, state prison and other public institutions' displays, was as usual attractive, and the high grade midway and grand stand shows were fully due the great patronage they received.

The West Michigan State Fair has come to a new life. It has gained the good will and patronage of the people of the western part of the state and as an agricultural fair is equal to any in the state. It has become an annual event in rural advancement in western Michigan.

Marketing the Bean Crop.

In another column of this issue will be found an article on the bean market situation from the pen of President Cook of the Michigan Bean Growers' Association. Every bean grower in the state should carefully read this article and take thought upon his duty as well as his opportunity in the matter of marketing his season's bean crop.

Unfortunately, as President Cook states, there are always a certain percentage of farmers who for one reason or another are not enthusiastically loyal in their support of any co-operative enterprise undertaken by their fellows for the benefit of the industry as a whole. With the certainty that even the speculative buying of beans will be at a high price this season, owing to the general shortage in foodstuffs as well as to the exceedingly short bean crop, and the fact that many bean growers will feel the necessity of marketing their crop early in order to satisfy their need for ready cash, it is reasonable to expect that this tendency will be more marked in the marketing of this year's bean crop than is ordinarily the case where co-operative action by a large number of farmers is proposed or undertaken.

As heretofore pointed out, however, the price of this foodstuff to the ultimate consumer will not be affected in any considerable degree by the controlled marketing of the crop by the growers, and if the bean growers of the state would secure their legitimate share of the consumer's dollar, they have the opportunity to bring about this desirable condition by adhering strictly to the minimum price scale fixed by the Michigan Bean Growers' Association in marketing this year's bean crop. The maintenance of this scale will, however, necessitate the gradual marketing of the crop, consequently the bean grower who is able to hold his product for the later market without any serious handicap will materially aid in sustaining prices by holding his crop for the later market. Even the man who must have money for immediate or early use will do well to use his credit at the local bank to secure same rather than sell his bean crop at a reduced figure.

It is only by making the handling of the bean crop a merchandising rather than a speculative enterprise that the growers may reap a legitimate reward for their labor and the speculators be eliminated from the business. Any legitimate means which may be taken to that end will help to place the bean growing business on a more profitable basis and insure a more stable food supply to consumers. The article mentioned should be carefully read as a means to that end.

There is no feature of the landscape which causes such favorable remark among country tourists as a well kept rural cemetery. To our discredit as a progressive people he it said that such a cemetery is the exception rather than the rule throughout the country districts of Michigan.

In another column of this issue appears a plea for the general observance of Memory Day which should appeal to the human sympathy and ten-

der sentiment of every Michigan Farmer reader. The Memory Day movement has grown rapidly since its inception through the efforts of the leader in the Farmers' Club movement in Michigan who is the author of the suggestions as to the proper methods of observing the day, which will be found in another column, until September 30 has been designated as Memory Day by an act of the state legislature and has been called to public attention by a proclamation of the governor, suggesting its general observance. May the day serve to call to our minds a duty which none would intentionally shirk, but which is too often postponed until a more convenient season.

The Milk Campaign

A TELEGRAM just received from New York states that the 13,000 milk producers of New York who belong to the State Milk Producers' Union and who represent 190,000 milch cows which contribute one-half of the milk supply of New York city, are demanding \$2.17 5-6 per hundred pounds for three per cent milk for the ensuing six months. Their trouble is, as ours, that the milk producer has never come to a knowledge of the value of the market side of his proposition. He has felt that his duties ended in the manufacture of a clean, wholesome milk placed in the can just outside the barn door.

The manufacturer of other products realizes that his work is but half done when he has turned his products outside the door of his factory. He realizes that the selling part of his proposition is just as important and much more profitable than the manufacture of his product and if you, the individual milk producers of Michigan, cannot awake to this problem and arise to the occasion and accept the opportunities offered by the state organization of placing your product in the hand of the selling committee of your local organization, you had better sell your cows and get out of the business of manufacturing milk.

The reason that some of the buyers are so averse to dealing with the selling committee of our association is because of the weapon of defense that this puts in the hands of the milk producers.

The day of awakening is at hand. The per capita demand for milk in the nation was never so great as now. The cost of producing milk was never so great as now. The difficulties of production were never so great. The price received by city delivery and for condensed milk was never so great as now. It is up to the milk producer to demand his share of the raise in this price. Below is given the cost of production in ten different experiments in different states, each under state supervision:

Table with 2 columns: Location and Cost per 100 lbs. Includes Lindenboro, N. H., Cow Testing Association (\$1.93), Massachusetts Ex. Station (2.42), Storrs Ex. Station, Conn. (2.12), New Jersey Ex. Station (\$1.94), Delaware Co., New York, 1912 (2.35), Delaware Co., New York, 1913 (2.03), Kent Co., Michigan, 1914 (1.67), Kent Co., Michigan, 1915 (1.58), Livingston Co., Mich., March, 1916 (1.83), Livingston Co., Mich., April, 1916 (1.85), Average cost, producing 100 pounds of milk for ten experiments, \$1.97 1-5

The investigation made by the Wicks Investigation Committee on milk production in the state of New York, discloses that the New York dairy industry can not continue unless increased prices are received, because the cost of production is greater than the price received.

The representatives of the United States government who have been making an investigation in Maryland are equally conclusive that milk producers can not continue to supply milk at present prices. Since the cost of production is in excess of prices received for the product.

The following scale of prices have just again been conceded to the Chicago Milk Producers' Union. These (Continued on page 294).

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—A Zeppelin raid on the British Isles was made last Saturday night. Twenty-eight persons are reported killed and 99 wounded in the metropolitan district of London, as a result of the invasion, and two of the Zeppelins fell victims of the anti-aircraft defenses of the city. Unusual activity in aerial warfare also characterized the fighting on the different fronts. In all 60 warplanes were brought down during the last few days 26 of the victims belonging to the central powers and 24 to the entente. Of this number 20 were brought down on the Somme fronts. There have been no important land battles during the last several days. The Italians have occupied an isolated position on the Austrian front but have also lost to the enemy Mount Cimone where 427 prisoners were taken by the Austrians. Italian troops moving on Trieste have cut off the city's water supply.—The Serbians are moving to attack Starkovgrov in Macedonia. This is an important position dominating the right side of the valley from Florina to Monastir.—Fighting has died down in Roumania in the Dobrudja region, while on the Transylvania front an attack by the Roumanians on the Vulcan pass was repulsed.—In Galicia a Russian attack on the upper Dniester river resulted in a general engagement where the attackers succeeded in entering the trenches of the Teutonic allies north of Zberow. Later, however, according to Berlin, the Russians were driven out. Petrograd reports that 1,500 enemy prisoners were taken during the engagement. In the Carpathian mountains several positions recently occupied by the Russians have been recaptured according to reports from the central powers.—Information comes through Amsterdam that a big political crisis is developing in Germany over a continuation of the policy of a ruthless submarine war. The Socialistic party of Germany adopted a resolution at a recent conference declaring their loyalty to the government in defending the country until its enemies are prepared to conclude peace, but condemned strongly the demands of those who wish to make the war one of conquest.

National.

The Mexican Peace Commission continues its session at New London, Conn. During the week the commission will consider many questions pertaining to the looting of mines and other properties by Carranza's military organization, to the manufacture of counterfeit money by Mexican officials, and to various petitions by individuals who have suffered during the recent revolutionary activities in Mexico.

Representatives of banking interests, and large exporting concerns in this country are appealing through the trade advisor of the British embassy at Washington to obtain from the British government concessions lessening the mail censorship restrictions which the state department has been unable to obtain by diplomatic negotiations.

New York city traffic continues to be more or less seriously interrupted by the carmen's strike which started September 6. Other unions have also voted in favor of striking in sympathy with the efforts of the car men to obtain their demands. No violence was reported Sunday, although sentinels were posted throughout the city to watch for, and report on all union men riding on the cars.

The new \$100,000,000 Canadian war loan has been over-subscribed by \$80,000,000. Small subscribers will be considered first in the allotments.

The owners of the Rock County Sugar Co., of Bay City, are planning to reopen the factory for handling next year's crop of sugar beets, and agents will be in the field shortly to contract acreage.

Five expert lumbermen are to be sent to Europe by the bureau of foreign and domestic commerce to study the lumber markets and obtain information to aid American concerns.

Urgent requests are being made by exporting concerns of the United States for direct cable connections between this country and continental Europe. This demand grows out of the interference with trade communications by the British government outside of military necessity. Trade concerns in this country hold to the opinion that this interference is due to a desire on the part of England to hold in check the growth of American commerce direct with continental Europe. Exorbitant prices for paper and high manufacturing cost has compelled the publishers of the Etude, of Philadelphia, to advance their subscription price to \$1.50 per year.

A Valuable Farm Asset

TIME was, when the idea that the birds a man has on his farm constitute a valuable asset, would have been laughed at as mere sentimentalism. But the work of the scientific investigator has proved beyond question what many students of nature have long suspected. Any farmer who is at all observing, can scarcely carry on his out-of-door work without seeing again and again, birds of various kinds, at their beneficial work of destroying insects and seeds of weeds and undesirable grasses. More and more each year, does it become apparent that the larger the number of birds a farmer has about him, the better is he protected from two of his most insistent enemies—insects and weeds. In the light of this fact, it behooves the farmer to do everything in his power to keep the birds on his farm and to attract others.

In dealing with this question, the writer does not expect to advance anything new, but simply to reinforce what has already been shown many times before. The birds yet have many enemies among men, and the question needs frequent airings, to keep it before the public. Thousands of farmers, today, largely through ignorance or thoughtlessness, perform acts while at work in the fields, which result in the death of young birds and in the driving away of the old ones. In protecting the birds about any place and in attempting to attract others and increase their numbers, three important steps should be taken:

Perhaps first of all, comes the war with the English sparrow. This Old World pest is one bird that is plainly not beneficial. Not only this, but the English sparrow drives away the really desirable birds. Swallows, robins, and many other song birds have been known to desert a neighborhood because of the presence in large numbers of the English sparrow. Wheat and corn fields suffer greatly, at times, from the ravages of these imported pests. They can hardly swallow the ripened corn, but often raise havoc with the green product, spoiling the upper half of the ear. These sparrows are a nuisance around the barn and hen-house, nesting over the doors, eating the grain fed to the chickens, and assisting in the distribution of lice by roosting in the hen-house and other out-buildings. A man with a gun is the best remedy for the English sparrow nuisance. They soon get wise, when shot at, and finally disappear altogether from the premises.

Perhaps the second factor in protecting and attracting the birds, is found in proper care as regards the number and range of cats. In some cases this question seems to be a rather delicate one. Often favorite house pets are notorious bird hunters, and are let to roam at will and slaughter hundreds of birds in a single season. It is argued, too, that cats are useful and indispensable about farm buildings. Granting this, it yet must be admitted that thousands of tramp cats and useless cats run at large throughout the country, killing each summer, a countless number of beneficial song birds. Some writers have even gone so far as to advocate a law that would not only exterminate the tramp cat, but that would compel all owners of cats to restrict their range during the nesting season of song birds. Man is prohibited from destroying these birds. Why not prohibit his cat from destroying them?

The third important factor in bird protection is the elimination of the red squirrel. Now the red squirrel is one of the most deadly enemies of birds. Furthermore, he is in himself, absolutely useless. More than this, he is mischievous and often does much harm about the farm buildings. As a robber of birds' nests, the red squirrel has few equals. Treat him as you do the English sparrows. Shoot him on sight, and do the birds a good turn. His presence bodes ill for the birds about your place.

In addition to these three primary

steps to be taken if you would make the birds welcome and secure, there are certain minor factors well worth noting. Without encouraging slovenliness, let it be said that it is possible for a farmer to clean his fence-rows and out-of-the-way places too clean. If you find a bird nesting in a clump of bushes, let the bushes stand. The birds will do more good than the bushes will do harm. Do not wantonly destroy a bird's nest at any time. If it is possible to avoid this calamity to the feathered folk, do so. With the passing of the rail fence, less room is left for the birds. Wire fences kept clear of all brush, leave no room for the bush-loving birds. A clump of bushes now and then, in an out-of-the-way corner, will prove a drawing card and give you more birds.

Another minor factor is found in the construction of boxes to attract certain kinds of beneficial birds, notably the bluebird, the martin, and the wren. These birds may be drawn to a place by the construction of boxes adequate as nesting places. Keep the English sparrow away, and most of the boxes will be occupied by bird families, each summer.

Still another minor factor in the question under consideration, consists in the feeding in winter, of the birds which remain with us during the cold months—namely, the wood-peckers, the chick-a-dee, the gold-finch, the blue jay and in some instances, the quail. The quail which is one of the most beneficial of all our birds, is sometimes hard pressed for food, during ice storms and deep snows, and will welcome corn or wheat from the farmer's granary.

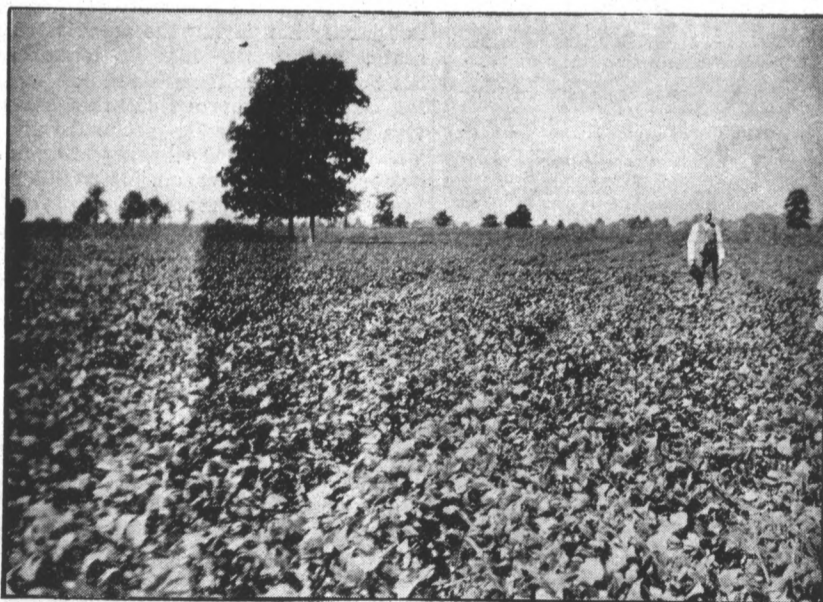
With the foregoing factors in mind, make an effort each year, to augment the bird asset of your farm. It will pay you a hundred fold. Befriend the feathered folk, and they in turn, will do you many a good turn worth dollars and cents to you in your farming operations.

J. A. KAISER.

GOOD SEED PAYS.

The accompanying illustrations are from photographs taken in a field of beans grown by Dwight Locke, of Tuscola county. The larger of the two cuts gives a view of the bean field looking down the rows, showing a perfect stand and large growth of vines, while the smaller photograph shows Mr. Locke turning aside the leaves in order that the photograph may show the pods on the vines beneath them.

Mr. Locke attributes much of his success in growing thirty-two acres of such beans as are here shown, to the



Looking Down the Rows in the Bean Field of Dwight Locke, Tuscola Co.

planting of the best seed obtainable. Mr. Locke writes that he spared no pains in securing good seed as free from disease as possible. After looking at the northern grown seed offered in different localities, he purchased some seed in Charlevoix county for

which he paid \$5.00 per bushel. Later he had opportunity to purchase more seed which was grown on an island in Lake Champlain, for which he paid \$5.25. The premium for these two lots was paid for the reason that they were more free from disease than other samples which could be purchased at a considerably lower price.

Mr. Locke states that many of his neighbors thought he was foolish to pay so large a price for seed beans, but when they look over his crop—which is variously estimated from 25



Mr. Locke Turning Back the Vines to Show the Well-filled Pods.

to 30 bushels per acre—they concede the wisdom of procuring the best seed obtainable for this season's planting.

Of course, good seed alone will not grow a big crop of beans or anything else under unfavorable conditions. Good farming is quite as essential, but good farming in other essentials without this important factor of good seed will not produce even a fair measure of the results here shown, particularly in a season when crop failures are common. It is but another illustration of the fact that if the farmer will do the very best he possibly can, nature is apt to reward him bountifully even under unfavorable weather conditions.

APPLY LIME IN THE FALL OR SPRING.

The results of ten-year experiments on about twenty-five fields scattered through Missouri show an average return of \$5.80 from applying about a ton of ground limestone once in a corn, oats, wheat, clover rotation. The

lime is absolutely necessary and makes the difference between a clover failure and a good stand, the lime has a still higher money value.

About 1,200 pounds of lump lime, or 1,500 pounds of water-slaked lime furnish the equivalent of 2,000 pounds of ground limestone for this purpose, but the ground limestone is usually much more economical to use. It should be applied at the rate of about two tons per acre under the average conditions of these tests, but, of course, this depends very largely on the sourness of the land. Samples of the soil and of the limestone to be used should be sent to an agricultural experiment station which is usually willing to examine the samples and make recommendations based on them.

Lime is not really a fertilizer, although it is sometimes called an indirect fertilizer, that is a material which indirectly helps the crop even though it is not a plant food, as are manure and good commercial fertilizers. It should usually be applied either in the spring before corn, or in the fall to land that has been plowed for wheat. The preparation of the seed bed then works it into the soil. It is sometimes plowed under but it is usually better to mix it with the surface soil. It should not be used as top-dressing on wheat or other rotated crops although sometimes so used on grass.

Mo. Exp. Sta. M. F. MILLER.

FALL PLOWING.

Farmers who have in view the saving of soil moisture, the destruction of weeds, the aeration of the soil, and the uniform distribution of labor, will find fall plowing advisable under several conditions. If this plowing is done early, it gives plenty of time for the furrow slice to become compact and encourages the germination of weed seeds, which will later be killed by the hard frosts. As a general rule, most grain crops do better on fall plowed land, unless they follow some cultivated crop, such as corn or beans.

Heavy soils, especially those of a clayey nature, are oftentimes benefited by late fall plowing, except they be plowed when very wet and sticky. If plowed, when the furrow slice turns over in a smooth, plastic condition, more harm is done than good, for when the slice is exposed to the sun it cannot help but bake and be lumpy, thus injuring the structure of the soil. Besides heavy soils, land that is infested with certain insect pests is often benefited a great deal by fall plowing, many insects being destroyed by late tillage of the soil.

It would be hard to make a definite statement in regard to the fall plowing of land for the following season's cultivated crops. Among farmers, varying degrees of success along this line have been obtained. Much of this difference of success has been due to differences in handling the soil the following spring. For the thoroughness of preparation of the seed bed cannot but help make a difference in the success of the season's crop.

It is true, however, that it is desirable to fall plow for cultivated crops that are to be planted on sod land or stubble land, especially if the latter has received an application of stable manure. This gives the sod a greater chance to break down and decay and allows the stubble furrow slice to unite with the subsoil below. If stubble land is to be left until spring before plowing, it should be disked early in the season, in order to secure a good, firm seed bed. H. W. HULBERT.

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.



Last year we remodeled our home and installed a Caloric Pipeless Furnace. Our house is large and in the coldest weather we enjoy comfort. We were able to use our bathroom with comfort in coldest weather. We did not have a single frozen pipe. We used less fuel than we would with any other make. In remodeling a house there is no better furnace.—E. L. Sindel, Delta, Ohio.

This is One of Thousands

of letters from satisfied users of the Caloric Pipeless Furnace from all over the country. City convenience and comfort are yours with very little expense. You do not have to cut your house up for pipes because the Caloric heats thoroughly with just one register. The



The Original Patented Pipeless Furnace

burns coal, coke and wood and is guaranteed to save 35% of your fuel. In a short time it pays for itself. There are no pipes to waste heat or cause a fire and the air in the house is kept in constant circulation which is an aid to your health. The triple casing on the Caloric prevents the cellar from becoming heated, thus saving produce and canned goods.

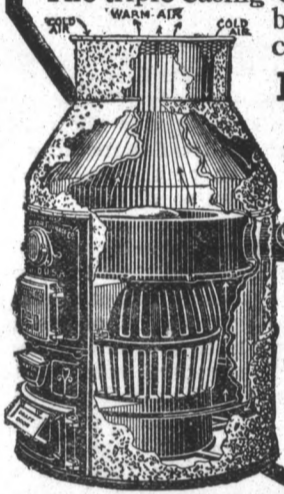
Installed In One Day In Any House New or Old

Because there is only one hole necessary to be cut, this furnace can be installed in quick time, without dirt trouble or inconvenience. It is guaranteed against defective material or workmanship. If it does not prove satisfactory let us know and we shall make it right. The firepot is guaranteed for five years.

Ask Your Dealer or Write for FREE Book. If your dealer cannot show you the Caloric Pipeless Furnace, send your name and address and we will immediately send you our free book. Don't delay. Write now.

The Monitor Stove & Range Co.

3014 Gest St. Cincinnati, Ohio



The Bean Market Situation

A FEW words on the bean market situation would seem to be in order at this time.

A meeting of the Michigan Bean Growers' Association was held at Grand Rapids, September 13-14. A comprehensive report of the Michigan situation right from the fields was offered by delegates and members from all the bean growing sections of the state.

Market Director McBride furnished us with all the reports made by the government, with a large amount of information from the other bean growing states, together with a comprehensive report upon general market conditions of the dry beans, and the can article.

After careful consideration of the statistical situation together with cost of production, the unanimous opinion was that the following prices must be secured to make this year's crop a paying one:

October, \$5; November, \$5.15; December, \$5.30; January, \$5.50, minimum.

Now, brother farmers, do not conditions demand that we do as other manufacturers do and have something to say as to what our product shall bring? If something is not done to put farming on a higher financial plane, it will not be long before sufficient food cannot be secured at any price.

If we see a remunerative price upon our product, and then co-operate, and market the product as actually needed, while the average price may not be higher, the farmer will get his share, and speculators will be largely eliminated. The sad sight of the price pounded down below a profitable basis during the time that the bulk of the crop is being marketed by the growers only to be advanced to a high figure later will be done away with, and in its place will come a sustained lucrative price at all times, and the boys will stay on the farms, and the food supply will be maintained.

The other bean growing states are lining up with us and already have been informed of our action. It would seem to be only the plain duty of every bean grower not to sell a bean below the figures issued from time to time by the association. Where there is a will there is a way and while in some cases it might work a hardship, it is the duty we owe our business, our families and ourselves.

The Jobber on the Job.

The thought has occurred to the writer that if something could be done to discourage the bean jobber from buying beans when conditions would not justify his paying the association's scale, and cause him to shut up his bean shop until such time as market conditions improve or the association reduced its scale, just as he does when he gets all the beans he wants or for any other reason. It would remove temptation from a lot of conservative (to use a very generous term) farmers who seem rather to take delight in putting a crimp in any movement of this kind, and of whom there are enough to seriously hamper those who are willing to assist, although the live ones are in a tremendous majority. With the idea of gaining the attention of the jobber I prepared the following statement:

To Whom it May Concern:—We, the undersigned, having confidence that the prices established for beans from time to time by the executive committee of the Michigan Bean Growers' Association are reasonable and are necessary to return a substantial profit to the grower, do hereby severally and jointly agree that we will not patronize in any way any dealer or jobber who buys beans at a price lower than the scale established by the association.

In one half day I presented that paper to forty farmers. Every farmer

who saw it signed it. They were from all parts of the county and representative of the best and most substantial element in the business. I never circulated a paper that met with such an enthusiastic reception. I could easily secure one thousand farmers' signatures in this county.

If the reader of this is in sympathy with this movement I believe he can assist in no more effective way than to in some way express to his elevator man an emphatic request that he keep out of the bean market when the price is "unfair."

Now is an exceptionally favorable time for the farmer to assert himself. The war in Europe, the high prices for all food products, especially those which compete with beans and the general anxiety at the "away from the farm" movement makes his position a strong one from every standpoint. Will you help to bring home the bacon?

A. B. Cook,
Pres. Mich. Bean Growers' Assn.

COST AND PROFIT IN GROWING PEAS.

I am writing for information on (1) the cost of growing peas for the canner; (2) the average yield of peas; (3) the price paid the grower; (4) the value of the pea straw if any; (5) whether or not two crops may ordinarily be grown in one season. Any information on the above points will be gratefully received.

Calhoun Co. C. C. M.

Last year my peas averaged nearly \$50 per acre; this year they have averaged less than \$10, but I don't think it would be fair to average these two years and say the average crop is \$30 per acre. And yet, last year was much more than an average. It was a big crop. It might be called a bumper crop. Hence possibly \$30 per acre is high enough for the average year. Besides this, we have the pea vines for silage and pea vines make good silage or, if one has no silo the vines can be cured for hay and would make a good substitute for clover hay, but there is considerable work to be reckoned with.

The cost of a crop of peas up to harvesting is no greater than with a crop of wheat or oats, except the seed. This seed item is considerable as it takes three to four bushels per acre at \$2.50 per bushel. The harvesting is very expensive. The cost comes in handling the green crop. They must be hauled to the viner and this must be close by. A few miles' haul makes the cost prohibitive. Even on my farm, where we have a viner station, the cost is great. But the vines in a measure offset some of this expense. I am not competent to say what they are worth. It would take a very careful experiment to determine their value.

The average price for peas is two and one-quarter cents per pound for the green shelled peas delivered at the factory. Most canning factories grade the peas and pay different prices for different grades, but the average is about two and one-quarter cents per pound.

Ordinarily I don't think it is practical to figure on growing another crop the same season after peas. Some years it can be done. But all conditions must be just right. First there must be plenty of labor at hand to prepare the ground for this second crop. Ordinarily it is hardly available. Men and teams are needed for other crops. The work must be done without delay. Second, there must be sufficient moisture at that time of year to start the second crop and grow it. Many times there is not. Third, there must be a late fall. An early frost will ruin any crop we can grow. If these three conditions are favorable, labor, moisture and a late fall, then we can grow a crop of ensilage corn, a crop of buckwheat or a crop of late potatoes that will make excellent seed potatoes.

COLON C. LILLIE.

Farms and Farm Lands For Sale

\$1000 Down Secures Farm 430 Bearing Fruit Trees

84 acres on improved road, less than 5 miles to growing city of 25,000 and 1/2 mile to village. Fine 2-story 10-rm. house, 45 ft. barn with silo and cellar, poultry house. Owned and improved for years by present owner who has made money here and now is forced by family reasons to sell at once. He will throw in pr. horses, 3 cows, hens, hogs, power sprayer, tools and 2 acres beans, 3 acres corn, 3 acres potatoes and a lot of vegetables, hay, oats and alfalfa. \$4100 takes all. For details see page 19, "Strout's Big Bunch of Bargains," copy free. E. A. Strout Farm Agency, Dept. 101, 150 Nassau St. New York.

Farms Before buying, investigate Alabama farms. They are unsurpassed by farms in any other part of the U. S. Fine climate; long farming season, making two crops possible; good water and plenty of it; mild winters; the stockman's haven—come and see. Lands from \$7.50 to \$40.00 per acre. Never again so cheap. Let us show them to you. Write. H. V. HUDSON, Livingston, Ala.

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. Staffeld Bros. (owners), 15 Merrill Bldg., Saginaw, (westside), Mich.

FARM FOR SALE. I offer for sale my farm consisting of 170 acres located three miles East of Flint. It is the best farm in Genesee County, finely equipped for dairying and handling registered stock; fine orchard; two good houses; an ideal home for some one. Price right and terms easy. J. E. BURROUGHS, FLINT, MICH.

257 ACRE STOCK FARM on main road, all improvements. \$30 per acre. 100 others. Send for list. Neville Fram Agency, Phelps Bldg., Binghamton, New York.

Owner Wants to Retire, 80 acres clay loam, nearly level, no waste, good buildings, fruit, markets close; only \$5500. Fred A. Gleason, Greenville, Mich.

Small Farm Wanted in Wayne, Macomb, Oakland or Livingston County. With stock crops and implements preferred. Send price, terms and full particulars. Ross Land Co., 1002 Penobscot Bldg., Detroit

235 Acres, 3 1/4 miles from Battle Creek, Mich. sold at auction October 14th. For further particulars, address C. Van Gieson, Owner, Battle Creek, Mich.

New York State Farms for Sale: Desirable bargains to offer. Free list. Henry S. Ogden, Walton, Delaware Co., New York.

WANTED—AN IDEA. Who can think of simple thing 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.

The Ounce of Prevention

Prevent injuries to your fruit trees NOW—don't have them girdled and killed by mice or rabbits this winter. Put an inexpensive

EXCELSIOR WIRE MESH GUARD around each one. Can be set up in a moment and taken off next spring. Galvanized—lasts for years. Write for sizes and prices.

WRIGHT WIRE CO., Dept. T, Worcester, Mass.

KITSELMAN FENCE

Got 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.

WRITE FOR BROWN FENCE BARGAIN BOOK AND SAMPLE

Over 25,000,000 rods Brown Fence already sold to 400,000 farmers. Factory Prices, Freight Prepaid. 150 styles. 13c per rod up. Gates and Steel Posts, too! Write postal.

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

BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc. 118 West 31st Street, New York

Fleming Egg Preserver.

Keep nine months equal to new laid eggs. Simple, certain, endorsed by State Poultry departments. Time now to test for Spring. Sample covers ten dozen, sent postpaid, ten cents. Address, Blithan, Blackfoot, Idaho.

Which Apples are Popular?

IN looking over a report issued by the government under the supervision of the Department of Agriculture, I was surprised at the magnitude of the apple business of the whole country, and also surprised to find, by actual tests by demand, which are the most popular apples raised as indicated by the prices at which they were sold during the season of 1915-16.

In the whole country it is reported that there was 76,670,000 barrels of apples raised. Of this large amount of excellent fruit raised in 1915, 43,117,000 barrels were sold in the markets, 15,000,000 barrels consumed on the farm as food for humans, and 11,330,000 barrels were wasted on the farms or eaten by live stock, and 7,000,000 went for cider.

One surprising thing is the statement that at the prices for which apples sold last year, so many would go to waste. It looks as though a large number of apple growers did not bestir themselves and get what that eleven (and over) million barrels would have sold for in the markets. The actual loss may have reached ten million dollars.

To a Michigan man the statement that there were more Ben Davis apples raised in 1915, than any other variety, is a surprise. About one-seventh,

itable than many other varieties that sell for a better price. N. A. CLAPP.

THE STATE FAIR FRUIT SHOW.

There is no building on the State Fair grounds which attracts as much attention as the Horticultural Building. This year it was especially attractive as the fruit exhibit was larger and the arrangement of the large county exhibits better than ever before. The quality of the fruit was especially good and although the season is from two to three weeks late the lack of color in the fruit for this time of the year was not especially noticeable.

The greatest interest was centered on the county contests. Heretofore Oceana county, with very few exceptions, was undisputed winner of first premium, but this year the contest between Oceana and Oakland counties was so close that none could guess which would obtain first premium. After careful scoring Oceana nosed out by two points and again took the blue ribbon, its points of superiority being in its artistic arrangement.

The Oceana county exhibit was at the south end of the building. It was placed on a big, well arranged embankment. The design consisted of a penant with the word "Peace" worked out in apples of a different color. Oak-



A view of the orchard of Luther Hall, of Ionia county. The production of many crops of high grade fruit has proven the value of Mr. Hall's unique orchard methods. Mr. Hall raises bumper crops of pork and apples on the same ground, forage crops for hogs being grown in the orchard.

or 14.5 per cent, were Ben Davis. Baldwins ranked second and Winesaps third.

Here in Michigan we have entertained the idea that the Northern Spy is the most universally popular apple grown, and yet it is way down in the list, there being less than four per cent of the entire crop of that variety grown last year. The Jonathan, Greening, Rome Beauty, Wealthy and Grimes all leading the Northern Spy.

Here in this part of Michigan there are many carloads of Steele Red apples grown and sold to dealers in the large cities in different parts of the country, it is disappointing to notice that such an excellent and profitable apple which sells for the highest prices of any of the popular winter apples is not mentioned, and several of the inferior varieties are given a place and a standing among the quotations and averages in the markets.

As to the prices at which the different apples sold, we find that the McIntosh leads at an average of \$2.50 per barrel; the Yellow Newton (Pippin) second at \$2.40; the Tompkins County King third at \$2.21; the Northern Spy fourth at \$2.05; the Gravenstein fifth at \$2.02; the Stayman Winesap sixth at \$2.00. Other varieties follow down the line with the Ben Davis lowest at \$1.42.

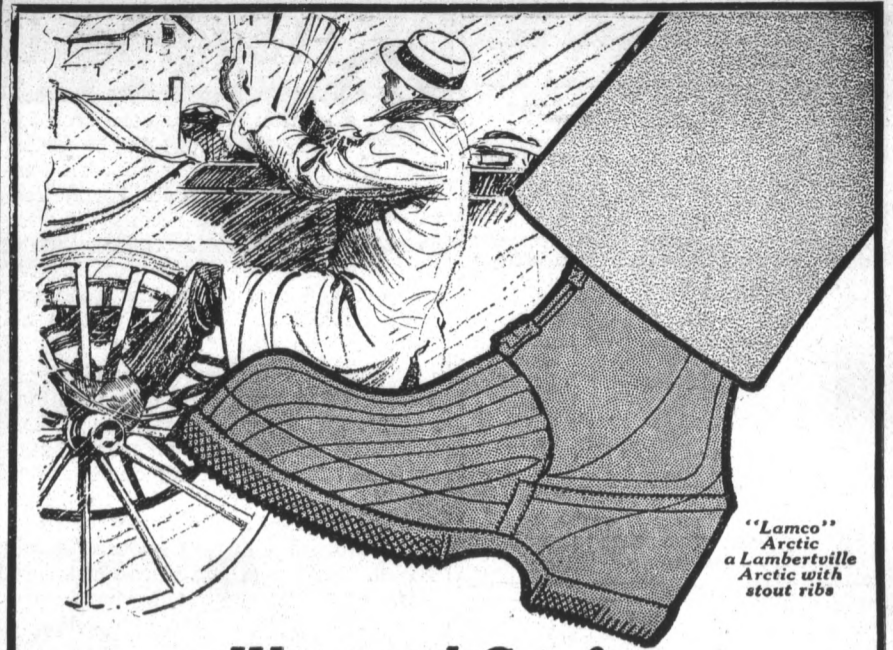
As to the profits with the different varieties, much depends on the productiveness of the varieties grown. The Ben Davis, except in the extreme northern portions of the country, being a persistent bearer, may be more prof-

land county had their exhibit on an embankment across the north end of the hall. The embankment was a straight one and the design was of a rug effect with a large square centerpiece in which the words "Oakland Fruits" were worked out with apples. The Oakland exhibit was one of the largest ever put up in the Horticultural Building while the Oceana had a much greater variety of fruits.

Oakland county is due much credit for the fine exhibit she has made as she gave the veteran prize winning county the closest run for her money she ever had. She also demonstrated to the fruit growing and fruit consuming public who saw the exhibits that Oakland county is one of the widest-awake fruit growing counties of the state. She is forcing public attention, by her activities to the fact that some of the good Michigan fruit is grown in the eastern part of the state.

Five other counties were in the contest and were placed as follows: Van Buren, third; Berrien fourth; Kent, fifth; Charlevoix, sixth; and Washtenaw, seventh. The Van Buren county exhibit was especially attractive because it showed the commercial pack of some of the popular brands of high quality fruit packed in that county.

There was a very good showing of fruit in the single plate, dummy box and commercial pack contests. Those who won the most premiums in these classes were Farley Bros., of Calhoun county, in apples; Dickinson, of Berrien county, in pears; Munson, of Kent in grapes, and Hawley and Billings of Oceana, in plums and peaches



"Lamco" Arctic a Lambertville Arctic with stout ribs

Wear and Comfort Right Down to the Ground

Think how impossible it is for this Arctic to crack. Those seven stout rubber ribs absolutely prevent it. Then the heavy red soles—doubly protected sole and vulcanized welt—make Lambertville "Lamco" Arctics, Boots and Shoes as sturdy as oaks.

"Snag-Proof" Short Boot heavy duck throughout

LAMBERTVILLE RUBBER FOOTWEAR



will wear you long after "the cows come home," and while they wear you they keep you in greatest comfort. Only the toughest, all-new rubber is used. And we use plenty of rubber—more, we think, than in any other boot.

Lambertville Footwear is made in four brands: "Snag-Proof" (all duck), "Redskin" (red rubber throughout), "L" Brand (duck vamp), and "Lamco" (pure gum with ribs)—each full value and at reasonable prices. If there isn't a Lambertville dealer near you, write us and we will see that you are supplied. Send for booklet.

LAMBERTVILLE RUBBER COMPANY
Lambertville, N. J.



Styleplus \$17 Clothes

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

\$17—War or No War!

We have won the fight! This famous trademark remains the same. In the interest of our customers we fought against a rising market to keep the price of Styleplus the same as before the great war. And we triumphed! You can get these splendid all-wool clothes for exactly \$17. The easy price stays just as easy in spite of the fact that everything else is shooting up, taking extra dollars from your pocket. Now more than ever, men, Styleplus clothes are the most wonderful value for your money in the whole world. Get your suit and overcoat!

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

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 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.

ROSEN RYE The new pedigree rye that produced an average yield of 41.2 bushels per acre without fertilizer. Very hardy, stools abundantly and the heads are especially well filled. Farmers report it much better than common varieties. Write to Secretary Michigan Experiment Association, East Lansing, Mich.

TIMOTHY AND ALSYKE \$3.50 Per bu. 45 lbs. Bags extra at 29c each. Send us your order. Young-Randolph Seed Co., Owosso, Michigan.

WE WANT VETCH. SEND US SAMPLES. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

Wanted: Garden and Field Beans, Vetch Seed, Etc., Mail us samples. S. M. ISBELL & CO., Jackson, Michigan.

Northern Grown Hairy Vetch Seed. DORR D. BUELL, Elmira, Michigan.

FOR SALE

Rosen Rye, Winter Wheat, Clovers and Grass Seeds—Bulbs for fall planting. Ask for Price list. S. M. ISBELL & CO., Jackson, Mich.

WHEAT No. 1 Red Champion, the wonder wheat from the east, guaranteed to increase your yields. For prices and samples write W. J. MERRIAM, Almont, Michigan.

THE MILK CAMPAIGN.

(Continued from page 290).

prices include the milk sold to the Borden Condenseries, as well as to the distributors in the city:

October\$1.90
November 2.00
December 2.10
January 2.10
February 2.10
March 1.85

This makes an average again of \$2 for the six months, a raise of 22 cents per hundred over the prices paid for the same time last year.

Some of the condenseries in Michigan are now offering to their patrons a six-month schedule of prices that average the six months of \$1.85 per hundred.

The wholesale price of Borden's Eagle Brand Condensed Milk, according to their own quotations, is as follows:

January 1, 1915, per case net....	\$5.65
December 4, 1915, per case net..	5.90
January 5, 1916, per case net....	\$6.00

Just look at your statements milk producers, and see what schedule of prices were handed to you at these dates. Just look and see if your prices advanced the first of May. Nothing said in this about the buyer waiting to see what he could afford to pay. Nothing said in this about selling at the buyer's price and the buyer's test and the buyer's time, and the buyer's weight.

Milk producers of Michigan, your own organization appeals to you. As you love your homes; as you love your wife and children; as you care for the future of this nation; as you understand your patriotic duty along all these lines that appeal to the true American, we ask you to be zealous in this campaign against a monopoly that threatens the life of this industry that you represent.

We thank you for your splendid cooperation in the past. But this is the time to keep busy. We plead for your co-operation now and in the future.

R. C. REED,
Field Secretary.

LIVE STOCK NEWS.

The first annual meeting of the American Milking Shorthorn Breeders' Association was held Wednesday, September 6, in the live stock pavilion at the Minnesota State Fair. The association is growing rapidly, and the prospects for the future are brighter than at any time since its organization. The membership numbers 53, and includes the University of Nebraska, the Georgia State College of Agriculture, and the Michigan Agricultural College. One hundred and seventy-six head of cattle have been registered, and there are many herds under test, to be registered as soon as they have made the necessary milk records. The following officers were elected for the coming year: President, Prof. Thos. Shaw, St. Paul, Minn.; vice-president, John Logsdon, Waterville, Iowa; secretary, E. A. Willson, St. Paul, Minn.; treasurer, D. E. Willard, St. Paul, Minn.

Following the settlement of the threatened national railway strike, several days were required to bring about a return to normal conditions, for the prices had suffered, especially for cattle of the general descriptions, while cattle and hogs had accumulated in the Chicago stock yards in unusually large numbers. Prime heavy corn-fed beef cattle were the first to return to previous high values, and a consignment of prime extra heavy cattle brought \$11.50 per 100 lbs. on the Monday following the strike settlement, this being as high as any cattle had sold at the highest time. Prime hogs also returned to their former high levels, with a lively local and shipping demand as soon as the accumulations in the stock yards were disposed of.

The distant ranges are shipping out greatly increased numbers of lambs, and Omaha gets a liberal share, especially feeders. Feeding lambs have been selling on the Chicago market at \$10 to \$10.25 per 100 pounds for the bet lots, but sales have taken place up to \$10.60 in Omaha. There is an active demand for breeders in the Chicago market, but their scarcity and dearness check sales, prime yearling breeding ewes having sold as high as \$10.50 per 100 lbs.

Hogging Down Corn

MANY corn belt farmers harvest a portion of their corn crop by letting their hogs do the work. This practice of hogging off corn has been in vogue in a limited way for many years, but until recently it was considered by many as a lazy man's way of taking care of the crop. It was also claimed that it was not good for the hogs and that a large portion of the corn was wasted.

But men's ideas have now changed somewhat in regard to this practice, and from the experiments and actual field tests made by the experiment stations and farmers throughout the corn belt it has been proved that the benefits are numerous and more than offset the objections that present themselves. Where scientific methods are employed, the hogging down of corn has proved of great benefit to all corn-growing farmers, and many of the most successful raisers now fatten their hogs in this way. In nearly every case on record it has been found that it will return as much for the corn while standing on the stalks as it will when the same corn is husked and cribbed and later fed out to the hogs. And any method that will bring the same amount of money that the same produce, plus a certain amount of labor, will bring through the regular channels, is undoubtedly profitable. The labor problem is perhaps the main factor in favor of hogging down a portion of the crop. Corn harvesting when done in the usual way, and especially if the acreage is large, requires an immense amount of work and a correspondingly large number of men; and unless the hands are available the harvesting of the crop in good shape is almost impossible. At corn husking time farmers usually find that it is not a mere matter of the outlay of money required to obtain efficient labor, for help cannot be obtained when wanted, no matter what the pay. Under these circumstances, if the hogs can be put to work profitably in the corn field, why not employ them?

Of course, to be profitable, the operation of hogging off corn must be managed properly. For one thing the hogs must not be allowed too much range at one time, for if they have more to eat than they can handle they naturally will waste some of the feed. For best results from a large field, a temporary fence should be provided so that the hogs can be limited to about the area that they will clean up in a week or ten days. In this way they will have fresh forage from time to time, and will clean up the field as they go. Do not remove them to a fresh patch of corn until the first is thoroughly cleaned up. After the corn that the shotes have been able to break down is eaten up it is well to take a pole and drag over the patch, and in this way the animals are able to get all of the feed. It may be necessary to feed lightly for a couple of days at the last. Woven wire fencing of from 36 to 40 inches in height is the most economical for fencing off portions of the field. Stakes placed every two rods will serve as posts to support the fence, if stretched tight and fastened to solid end posts. Two men can move forty rods of such fence and restretch it in less than half a day.

Spring shotes, those weighing from 75 to 125 pounds, will make the best gains in the corn field. Before turning the shotes in, they should be accustomed to the new corn; this can be done by feeding some new corn every day with their regular feed. The amount of new corn should be gradually increased for a week or ten days, at the end of which time the shotes will be ready to go into the field and help themselves.

It is important that the hogs should have access at an abundance of water as well as shade. Clover or cowpeas

adjoining the corn field is an ideal range for hogs. Some farmers who aim to hog off corn sow some forage crop in the corn at the last cultivation, such as rape, rye, soy beans, etc. These crops furnish green feed and are also excellent for variety in the diet. The green crop is not always eaten by the hogs while on full feed of corn, but they will make some good use of it, and afterwards it makes a good soiling crop and helps to hold the manure left by the hogs during the winter, if the field is to be put to corn or oats in the spring. If the field is cleaned up early enough, it may be disked two or three times and sown to wheat with a disc drill.

Indiana. W. F. PURDUE.

SHEEP IN MICHIGAN.

(Continued from last week).

Difficulties to be Met.

There is the dog nuisance which should receive the attention of our lawmakers. If sheep are destroyed by dogs the farmer who meets with the loss should be fully paid for all damages and no cutting down of values to favor friends or foes. At the present time the wire fence and shot-gun for stray dogs is about the only redress.

Near small towns and villages it is practically impossible to keep sheep without enclosing them in a high wire fence at night. The worthless dogs that are kept in town gather in packs and reconnoiter the country. At night, and when they get a taste of the sheep they make sad havoc by not only killing some members of the flocks visited but seem to have a mania for biting all the different ones they can get near enough to bite. Not ten per cent of the sheep bitten by dogs recover. When a pack of dogs get into and at a flock of sheep they are pretty sure to practically ruin it. Farmers are justified in using a shot gun when one or two tramp dogs that roam the fields come on to their premises. If the dog nuisance could be gotten rid of, many more would venture in the business of keeping sheep in small numbers at least, on their farms.

Internal Parasites.

Another menace to the sheep raising business is the internal parasites. When sheep are kept on the same farm and pastured on the same field year after year, the lambs are quite liable to be bothered with stomach worms. Changing pastures often in summer is a good plan, as the whole flock will eat more and thrive better.

Our Duty.

It is our duty to encourage sheep raising in Michigan. Sheep are scavengers that clean the odd corners of weeds and bushes and make liberal returns for the privilege of doing the same. They are the animals that pay best on the farms in remote portions of the state which are a long way from market. The year's product of wool can be hauled a long way once a year at a little expense. The mutton sheep can be driven to the shipping points at little expense and a very small shrinkage in weight. The income from wool and mutton can be made large, and as it represents two crops a year it will meet the needs of the farmers in supplying money for expenses and improvements.

It would be well for many who are keeping cows and have to haul the milk a long distance, and who are crying out for better prices to enable them to meet the heavy expenses for feed and labor, to consider the matter of keeping sheep instead of cows. One man can look after and care for five hundred sheep the whole year while it requires a man to about every ten cows with the dairy. If the matter were to be looked at from all angles, and properly considered, there would be a revival of interest in the sheep business in a short period of time.

Wayne Co. N. A. CLAPP.

Hillsdale Mich., Sept. 22, 1916.
Wm. E. Robb,
Sec'y of Citizens' Mutual Auto
Ins. Co.,
Howell, Mich.

Dear Sir:
On September 21st on my way from Allen to Hillsdale I had a collision with a Mr. Roads, of Allen Township. Running into a wagon and hay rack, team running away and throwing man off from wagon and breaking his left leg below the knee. I removed Mr. Roads to his home and procured medical attendance. I am notifying you that I am holding policy No. 11,713 of Citizens' Mutual Automobile Insurance Company.

Awaiting your instructions as to what further is necessary to do, I remain,
Yours very truly,
J. WHITNEY WATKINS.

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is the title of a little booklet, giving seven reasons, official and non-official, why it is the best time to spray. This booklet will be sent out by the B. G. Pratt Co., 50 Church St., New York, manufacturers of the well-known "SCALECIDE" at a very early date. If you are not on their mailing list, send them a postal today giving the number of your trees and your dealer's name and you will receive a copy free. Address Dept. 22.

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RANDOLPH, HALL & YOUNG, Owosso, Mich.

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.

AUTHENTIC FIGURES ON COST OF MILK.

(Continued from first page.)
was produced at the lowest price per quart of any, the figure being 4.3 cents. The second group yielded an average of 3,700 quarts, costing 4.5 cents, while the third group of 3,300 quarts, approaching more nearly the performance of common farm dairies, but still superior to them, turned out a product at five cents.

Objection has been made to the high depreciation charged, but this is defensible on the ground of almost certain losses which overtake the dairyman from year to year. For example, in case of the next set of figures presented, the herd was assumed to be more valuable at the end of the year than at the beginning and this "appreciation" was credited to the extent of \$.136 for every hundred pounds of milk produced that year. Two years later the herd was found to be tubercular and slaughtered, with a heavy loss to the owner. Where in any former calculation had he provided for this eventuality?

As a matter of fact, accounts from this farm are kept by the Office of Farm Management, Washington, D. C., from whose records I take the following summary for 1912:

Number of cows, 30; total expenses, \$4,467.62; average cash receipts per 100 pounds for milk, \$2.184; herd appreciation for each 100 pounds of milk produced, \$.136; value of manure for each 100 pounds of milk produced, \$.128. Total receipts 100 pounds of milk produced, \$2.448; total cost of 100 pounds of milk produced, \$2.415. Profit per 100 pounds milk produced, \$.033.

Incidentally it will be noticed the price of making each quart of milk on the farm was in excess of five cents.

There is very little encouragement to be taken from the foregoing data. It must be admitted that dairying in many cases is not a self-sustaining business and that it limits or reduces the profit on general farm crops. Of course, there are many notable exceptions but this article, as inferred in the beginning, has to do with conditions as they affect the rank and file, or average dairyman.

Meat, bread, clothing and in fact everything that constitutes a necessity of life, with the one great exception of milk has advanced in price during the last five years. Why this exception and why has the consuming public any right to expect farmers to sell a commodity below actual cost of production? Nothing could be more logical and necessary than a substantial increase in the price paid a dairyman for his milk.

Quality is a factor that must be taken into account and upon which sooner or later all milk will be sold. Grades must be established on the basis of fat content and cleanliness, and much more stress placed upon the latter than is true of present regulations. A farmer who equips himself at considerable expense to produce milk under sanitary conditions and with low bacteria count must receive a compensating price, not according to his personal ability to secure as much, but rather because he meets a recognized standard.

Very few are awake to the importance of the milk situation. Somewhat prophetic, however, is the recent history of beef cattle, sheep and hog raising, which, on account of low prices, drove so many out of the business that a shortage in our meat supply has occurred and we are now paying exorbitant prices for meat as a result of this condition. The problem, then, is shall we invite a repetition of this with milk as the commodity involved? Surely dairymen will not much longer continue in a losing business and conditions must be righted so that the consumer will be spared paying 14 or 15 cents per quart in the next few years, instead of a just price now, which will

insure continued milk production at fair prices.

GOOD CREAM PAYS BEST.

The American farmer who sells cream should insist that the creamery grade his cream. This will tend to cull out the poor quality of cream and make possible a better grade of butter. Give the creamery a good grade of cream and they can make a good grade of butter. Good butter sells for a high price, therefore top prices can be paid for the cream. Better cream prices stimulate the farmer in obtaining better dairy cattle and increase the desire for a more careful study of economical milk production.

The close grading of cream has become absolutely necessary. Within the last few years creamery butter of the United States has been meeting with greater competition from foreign butter. Butter from Siberia, Australia, Denmark and South America has come to our shores by the ship-load and sold in our large markets alongside American made butter. It has poured into the United States on both the eastern and western coasts.

Imported butter does not reach our markets in as fresh condition as our own butter, consequently the majority of it sells as second grade. In many cases it leaves the point of production as a first-class article, but is so long in transit that it deteriorates and arrives as second-grade butter. Unfortunately the majority of American made butter is also second grade. This is not because it cannot reach the market at once, but because it is made from a poor quality of cream. The American farmer is not producing as good quality of cream as his foreign brother.

First-grade butter is still in big demand in this country and the producers of good butter are realizing a nice margin in price over the producers of second-grade butter. Because of foreign competition with our second-grade butter the difference in price between first-grade and second grade is wide. Foreign competition has not materially increased the supply of first grades, while the supply of seconds has been increased tremendously.

Because of our poor markets for second-grade butter the farmers in every community should compel their creamery to grade the cream, and should do all in their power to see that every farmer produces only first grade cream. Then, and only then, will that creamery be able to pay top prices for cream.
Mo. Col. of Ag. L. G. RINKLE.

DAIRY PROBLEMS.

A Permanent Pasture.

I have a field that we cut oats from this year and we want to make a permanent pasture of. What would you sow there? There is a little white clover on it now but there was no grass seed sown in the oats. Is there something I could sow this fall?
SUBSCRIBER.

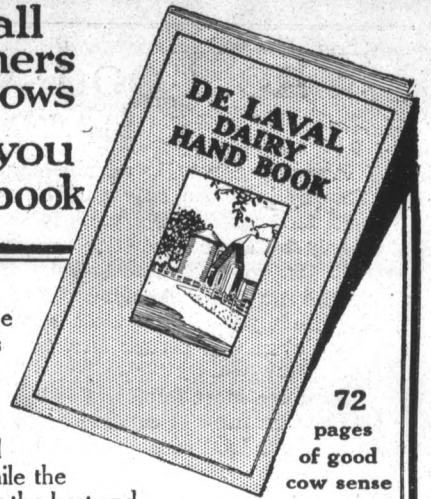
It pays well to go to considerable trouble and expense in preparing for a permanent pasture. This field should be plowed at once and thoroughly fitted. It should have been plowed as soon as the oats were harvested. I am not sure but it will be best now to wait until spring to seed this field for permanent pasture. If we have a late fall and the work is done at once, it may work out all right to seed now (September) but there should be no farther delay as the grasses should have time to make a sufficient growth this fall to enable them to withstand the winter.

Prepare a good seed bed. Better than you would for wheat. Then seed to a variety of grasses. The following is a good mixture: Red-top, 4 lbs; orchard grass, 5 lbs; timothy, 4 lbs; alsike clover, 2 lbs.; red clover, 3 lbs; white clover, 1/2 lb.

It will pay to manure the land well. If you haven't the stable manure then use 300 to 500 pounds of fertilizer.

COLON C. LILLIE.

FREE to all owners of cows
If you keep cows you ought to write for this book



72 pages of good cow sense

THIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

"How a Dairyman Made Good"—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

"Year Around Feeding of Dairy Cows"—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

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The Food Value of Milk

By FLOYD W. ROBISON

It is pretty generally acknowledged that milk is the only perfect animal food which we have. In fact, it is said by some that it is the only perfect food of any description. But there are certain deficiencies even in milk, which prevent us from conceding that even this article is a perfect food.

Milk the Most Perfect Food.

The reason milk is considered to be such an ideal food is because it has in it all of the constituents which are used by nature in building up the human system. To establish this argument it would simply be necessary to recall to mind that for the first year of a child's life it receives practically nothing but milk; in fact, during the first six months of its existence it receives absolutely nothing but milk. Hence we must concede that milk is an exceedingly well balanced food and perfect in this respect, that it contains all of the constituents on which nature draws for building up the body. We know now that milk is not an ideal food exclusively for grown persons. It is adapted for early life but not for mature life exclusively; that is, it must be supplemented by other foods which contain some of the same constituents which milk contains, but in greater quantities than is found in milk. Nevertheless the fact remains that milk may constitute one of the chief articles of diet even for adults through the entire period of human existence.

Skim-milk Itself as Valuable and as Cheap as Beef Steak.

We have observed briefly the value of milk from the standpoint of its protein content. We have found it to be as economical at the price of eight cents per quart as practically any other animal food product, even when we consider nothing but its protein content. We are likewise familiar with the fact that the protein content of milk is given very small consideration indeed by the producer of milk products or by the consumer of milk products. Milk is very commonly valued on its butter-fat basis, and in many instances no consideration is given to the protein or cheese content of the milk. It is for this reason that we have dwelt rather heavily upon the protein value of milk. We might therefore, remove every trace of butter-fat which milk contains and leave us simply skim-milk; we might then go to work by chemical processes and remove every trace of sugar there is in the milk, leaving us a skim-milk free from those constituents which still exist in the whey when cheese is made. In other words, a solution of nothing but casein in water, and we would have a product even then as valuable, though we paid eight cents per quart for it, as is round steak at 24 cents per pound, sirloin steak at 28 cents per pound, oysters at 50 cents per quart, smoked ham at 30 cents per pound, fresh fish at 16 cents per pound, eggs at 30 cents per dozen, or mutton at 24 cents per pound.

But this is not all there is in milk. The protein value while an important value, fully as important as the lean meat values of other animal food products at the prevailing prices, still this protein value is by no means the full value of the milk. We find we have yet the butter-fat value for which creameries are paying upwards of 30 cents per pound and we still have the sugar value which, while not generally commercialized still is worth for food purposes from five to ten cents per pound.

One Dollar's Worth of Milk Equals Two Dollars Worth of Beef Steak.

If now we consider the value not only of the protein but of the butter-fat at its current price, and of the sugar at its marketable price, we have a startling condition showing what an enormous advantage there is to be

gained by an incorporation of greater quantities of milk in the menu. We find, for instance, in studying the amounts of real food values which can be purchased for \$1.00 that if we can establish as our standard by comparison sirloin steak at 28 cents per pound we will get slightly over twice the food value in milk at eight cents per quart, that we do in sirloin steak at the price mentioned. In the case of round steak the comparison is still more favorable to milk. In the case of mutton at 24 cents per pound we get exactly twice the food value in milk at eight cents per quart. In the case of fresh fish at 16 cents per pound we get six times the food value in milk at eight cents per quart. In the case of eggs, we get two and one-third times the value in milk at eight cents per quart that we do in eggs at 30 cents per dozen. In the case of oysters, solid pack, at 50 cents per quart, we get slightly over six times the value in milk at eight cents per quart. Smoked ham has only two-thirds the value of milk with smoked ham at 30 cents per pound.

In these comparisons we have not given any consideration to the vegetable products. A careful study of money values would undoubtedly permit the use of many vegetable foods, reducing the animal foods thereby, but there is a very decided taste developed among our people for animal food products, a taste which we think is well established and well founded scientifically.

Apply Stock Feeding Principles in the Human Diet.

And there is an entire lack of correlation of values as to which animal food product can be considered most economical, taking into consideration at the same time the balancing of the menu which is the thing our people must study and learn, in the interests of health. We have given consideration for years to the study of the balanced ration for stock. It is not necessary nowadays to spend much time arguing the advantages of the balanced ration with a dairyman. He knows at once how many times the measure of his success depends upon the establishing in his dairy herd of a rigid balanced ration.

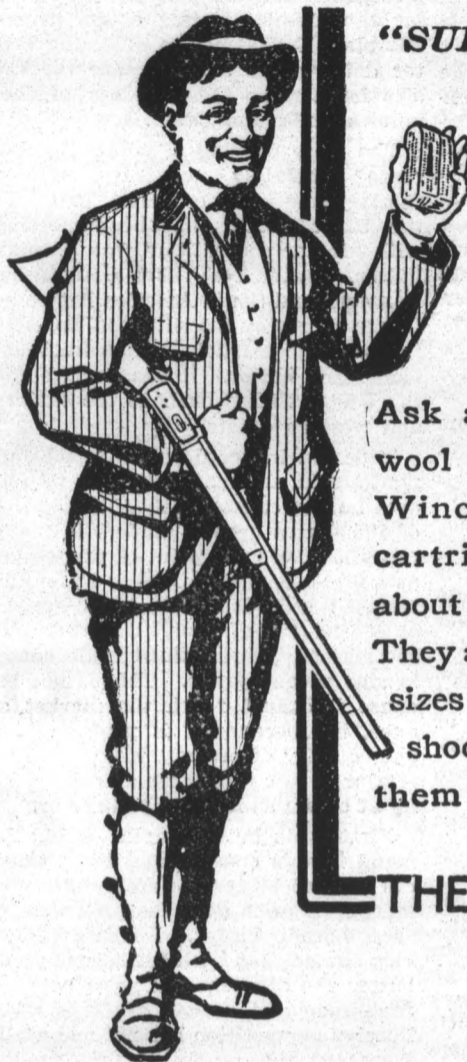
The Consumer's Best Interests Lie in a Well Paid Dairy Business.

Milk production has never been so studied as it is being studied today. A very few years ago when we advocated among dairymen the idea that they must eventually secure at least five cents per quart for their milk at their door, many of the dairymen themselves felt that we were talking in theoretical terms which they would never be able to realize. Five cents per quart for milk at that time meant to the dairyman a good, liberal profit. He had not begun to consider the factors which other business men figured for years in establishing their legitimate profit. But with the demand for a better product by the consumer, a demand which we think is the consumer's right, farmers have been forced to inquire into the cost of the production of their products and they consequently have begun to realize that if they are going to continue in the business of milk production at a

profit they must get larger returns for their finished product. At the same time we feel that it is our duty to remind the consumer that the dairyman has a legitimate reason for increasing the price of milk and when the consumer has to pay 16 cents or over per quart for milk, based on the present current prices of other animal food products which we have mentioned in these articles, then she will be able to see from a comparison of values that milk is becoming expensive. But in view of the prevailing prices of these other animal food products she may well afford to incorporate in the menu increasing quantities of milk as long as its cost to her does not exceed 16 cents per quart.

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Magazine Section

LITERATURE
POETRY
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MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
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

I STOOD beside a man when he was handed a check for more than one hundred dollars by the manager of a fair association as a premium for the best display of farm produce. Later I heard him remark, confidentially, of course, that it was easy money and that most of the exhibit had been borrowed from various farmers who knew how to produce winning stuff. The argument has been advanced that the exhibits would fall flat if it were not for these men, because the farmers of the community cannot produce the quality and will not exhibit. If such be the case it is the duty of every official and every booster for the county fair,

Planning a Fall Festival

By W. C. SMITH.

and he should make it his business, to see that the farmers do exhibit. The quality of the product is of secondary importance for it will be improved as the local men gain in experience through exhibition and seeing what his neighbor is doing along similar lines. The very fact that the county fair does not always live up to its opportunity has given rise of late years to local fairs where the farmer can exhibit without fear of the "string" men

and where his chief reward lies in the pride of achievement. These local fairs are valuable lessons in the art of production and exhibiting. In communities where they have been held for any considerable length of time, men have graduated from them into the ring of state shows. Not only has this been the case but the standard for the whole community has been raised and a keener interest manifested in the production of quality. Furthermore,

they provide a place of mutual interest where farmers and stockmen of a community can get together on a common ground and where the spirit of co-operation can be fostered and maintained. If you have never held such a festival or fair in your community now is an excellent time to start.

One of the best assets that any movement can have is a few real good boosters. Given these a success will come for they keep eternally at it. The group of men who are interested in the movement will meet a few rebuffs and encounter some prejudice, but if of the right stuff they will win out and eventually receive the thanks of a com-

WORLD EVENTS IN PICTURES



The Kaiser and Gen. Von Hindenburg, Geniuses of Teutonic Armies.



Wreck of Zeppelin Brought Down on English Soil Near London.



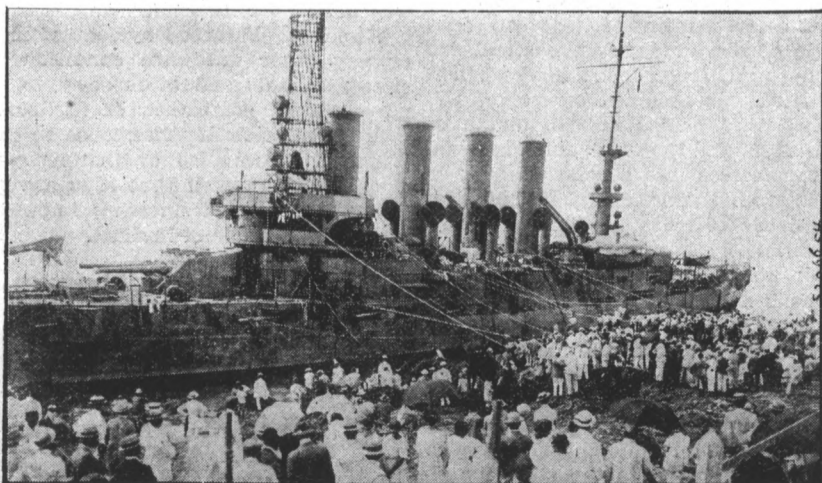
Brave, Strong, Hopeful France in 1916.



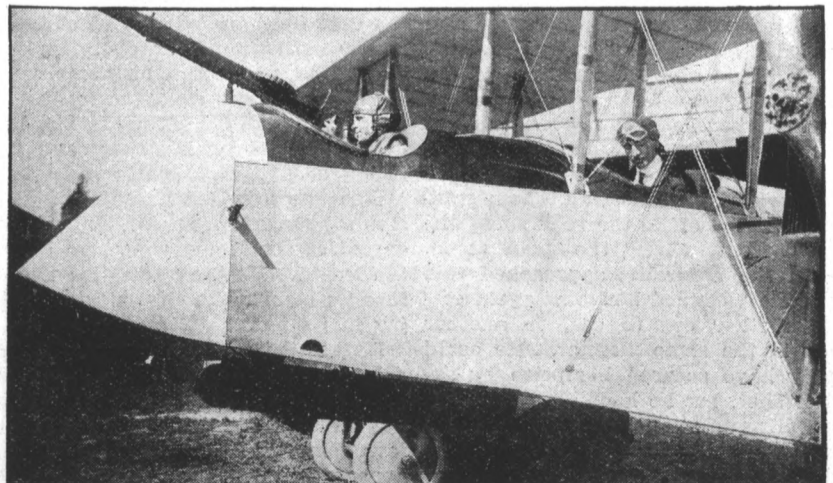
Head of Striking Carmen's Parade Coming Down Park Avenue, N. Y.



Picturesque Float in Farm Products Parade at New York State Fair.



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New Type of Battleplane which Carries Machine Gun and Torpedo Bombs.

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munity. The first year will be a little difficult, for the average farmer shys from the new, but the succeeding years will be easier. If you can possibly do so, have your first festival or fair or products show or whatever you choose to call it, staged in your local village or town. There will be objections to this for the argument will be advanced that the merchants will boost for advertising purposes, and they will. Let them boost, that is the thing you desire above all others. Moreover, they will co-operate with you and I know that in my own community the fall festival was made possible only by the boosting of our local tradespeople. It is probably true that they were repaid for they drew the patronage from those who had formerly come but seldom to their town. They paid for the programs and premium lists with their advertising and offered individual prizes that were worth striving for and so will your merchants when the proposition is properly explained and a closer relation between country and town will result.

There must be no entrance fees and no charges. Go to your best breeders—men who are interested in good stock and good grain—you will find these men the most willing to assist. The stallion men will offer seasons and special inducements as prizes. The cattle men will do likewise and the others will assist in providing the purses. It is not uncommon for horse owners to offer special prizes for the get of their individual stallions and this aids in bringing out larger classes. The main thing is to get large exhibits the first year—the other years will largely care for themselves. Appoint committees for every line in which premiums will be offered and have them make a point to see that every department is properly represented. Thus in our own local fair we find the most enthusiastic

poultry keeper in the community and place him at the head of the committee on poultry; the fruit grower gets the same position for the fruit exhibits; the man who has preached most on the important subject of pure seed corn gets the corn department, and so on down the line. We do not exhibit cattle and hogs and confine our show to horses because of poor facilities in handling the other lines, but one of our horse shows—a show for two-year-old colts—was one of the best ever seen outside of the state show.

Hire a band. You cannot celebrate without a brass band. Fill a half day, at least, chuck full of games and sports for the rising generation and above all do not forget the women. We have a culinary department, a butter show, and a cream-testing contest. We have found the milling companies ready and willing to offer flour as premiums for the best loaves of home-made bread—they do this through the local dealer at no expense to the association—and we have a room full of good, old-fashioned home-baked bread on fair day. Make your corn show entertaining and at the same time illuminating. Hire a man to deliver a talk on corn. Your state experiment station will probably furnish you one at a slight expense and whenever possible fill in all of the gaps with talks by men who can reach the people and who know whereof they speak. Get the best utility poultryman that you can find to talk farm poultry and competent men for the other displays but above all do not try to satisfy everyone with a premium. Place the awards where they belong and strive to make plain why they have been so placed. Then keep up the talk for quality and the men who lose this year will receive a stimulus that will bring them back again—with exhibits that will merit awards and benefit the community.

the snake's mouth proved not to have been injured in the least.

A lady of my acquaintance has what she thinks is the most intelligent canary bird in the world. She is very fond of it, and since a little occurrence recently she is as proud of it as she is fond. Its cage hangs in a room heated by a large coal stove. One afternoon she wanted to go out for a short visit, and as the fire was low she filled the stove and opened the draft. She was gone longer than she expected, and when she returned the stove was red hot, and the air in the room was like that of a furnace. Her first thought was of the canary. She looked up at the cage. The bird was nowhere in sight, and she stepped on a chair, expecting to find the little fellow lying dead on the floor of the cage. Instead, to her delight there he sat in his bath tub, immersed in the water, with nothing out but his head, and he was even ducking his head under the water at intervals.

A bird which exhibits almost human intelligence in some of its ways is the chaparral cock of Texas and other southwestern states, where it is known by various local names. It is a fierce looking bird about the size of a grown turkey hen, with long, powerful legs, a strong bill two or three inches long, and it is an exceedingly swift runner. It eats centipedes, tarantulas, scorpions, lizards and small snakes.

This fowl hunts and destroys rattlesnakes in a peculiar way. Waiting until the reptile has thrown itself into a coil, the bird drags branches of dry cactus and completely surrounds the snake with them. Then the rattler is aroused by pushing a piece of cactus against its skin, and it immediately tries to escape. Being unable to pass the thorny hedge, it turns at last in its blind rage to strike its fangs into itself, and dies of its own poison. Then the chaparral cock dances around with every show of exultation, and goes off after another victim.

People who have read about the rough manners of cowboys will be interested to know that they are habitual singers of hymns. The strange feature is that they sing the cattle to sleep. A herd of steers are as skittish as a flock of sheep, particularly at night. Anything or nothing will start a stampede, and when the cattle get to running they are almost as difficult to check as a prairie fire. So a part of a cowboy's duty is to ride around and around the bunch of restless cattle, singing a hymn as melodiously as he can.

He thus gradually turns the foremost part of the drifting herd back upon itself and combines it with the rear part—"milling," it is called—keeping the cattle going round and round, getting them in a more and more compact mass. Gradually the animals are brought to a halt, become quiet and drop down one by one, until at length they are all asleep, and the tired singer can rest his throat. The singing has a soothing effect on the excited cattle, just as it has on a sleepy child at eventide, or on wild animals in a circus or animal show.

Another example of the trained instinct of cattle is noticed upon the great cattle ranches of the west. The cattle of former days were all of the unimproved, long-horned kind. When the herd was attacked by wolves the calves were placed in the middle of the bunch, and the older animals formed themselves into a solid phalanx or circle around them, all facing outward. The cattle of today are improved cattle, a largely hornless, or with short, weak horns, and if, as occasionally happens still, the herd is attacked by wolves, the calves are guarded as before, in the center of the herd, but the older cattle face in instead of out. Their hoofs, not their horns, are now their most powerful weapons.

A farmer of my neighborhood, who has been a settler in the state for almost half a century, relates an interesting tale of a cat endowed with al-

most human intelligence. Many years ago this man's father owned a farm in this section, where at the time there were more woods than fields and more deer than domestic animals. His family had a fine white cat which was a great pet, and very intelligent; but her kittens were regularly drowned on their appearance, as no people lived near to whom they could be given. One summer the old cat disappeared, and after a month's absence she was given up as lost forever. But this farmer who told me the incident was both delighted and surprised when she came to him in the woods where he was cutting brush, rubbing against his legs and purring loudly. He stroked her gently, and presently she darted away into a hollow tree and reappeared with a half-grown kitten in her mouth, and this action she repeated until she had laid five at his feet. Then she looked up into his face as if to say, "I kept these out of your way until all danger was past." The next day she piloted the whole family to the barn, where as a reward for her intelligence they were allowed to live.

A naturalist who has studied the interesting characteristics of animals tells a story from his own observation, which seems to show that some creatures have a very exact sense of time—even more exact than that indicated by the migration of birds or the hibernation of certain animals. He once enjoyed the acquaintance of a mouse which, at exactly a quarter before four o'clock every afternoon was in the habit of coming out along the wainscoting and making his way to a pot of paste on the table, the crust of which he nibbled. No suburbanite having his train in mind could be more regular in arriving at his breakfast table every morning than this tame mouse was in coming out for his daily nibble of paste.

How did the mouse know when it was a quarter to four? Hardly on account of a sense of hunger, because it is not possible that it would have become hungry at exactly the same minute every afternoon. It surely did not allow itself by eating exactly the same amount of paste every afternoon, and therefore, it would not be likely to get hungry at exactly the same minute. It certainly had some way of measuring time.

It is well known by nature students that certain birds arrive from the south on their northward migration at practically the same day in the month every year, regardless of the condition of the weather, and also that those animals which hibernate during cold weather begin their long winter sleep at a certain unvarying time every autumn, no matter how pleasant the state of the weather may be. This would seem to indicate that animals take careful note of time, and are not moved by the mere state of the weather, which varies considerably in temperature every spring and autumn, and therefore they approximate human intelligence, just as a man goes to the breakfast table at the same hour every morning, whether he be very hungry or only slightly hungry, and to his office to work every morning at a certain hour, whether the weather be hot or cold.

When not disturbed by fear of man or any other untoward condition or cause, animals and birds seem to be moved by a semblance of the same free intelligence. If you choose to call it inherited impulse or instinct you are forced to admit that it is a very finely trained and unerring impulse; a very high order of instinct.

WHAT THE LEARNED THINK.

How easy it is to follow one of the two lives—the animal or the intellectual! how difficult to conciliate the two—Hammerton.

The way to be satisfied with the present state of things is to enjoy that state of things.—Bagehot.

Dislike at first sight is more common than love as discord is more common than harmony.—Hardy.

Queer Specimens of Animal Intelligence

By ISAAC MOTES

THE judgment, instinct or intelligence—call it what you will—of God's wild creatures is sometimes startling. So much intelligence do they manifest that you feel justified in calling it judgment and thinking ability rather than instinct. They act as if moved by human wisdom.

As an example of a high order of intelligence in birds, a naturalist reports that he was walking along the sands of the sea shore one summer afternoon, when he saw some flocks of the common tern fishing in the sea. As he wished to get a specimen of this bird he stopped and watched their movements. Presently one came flying towards the shore. He raised his gun and fired, and the bird fell into the water with a broken wing.

The report of the gun and the screams of the tern brought all the flock around it. They flew round and round their wounded companion as the tide carried it in toward the shore. Just as the naturalist was preparing to wade out into the shallow water and take the bird in his hands two of the terns took hold of it, one at each wing, lifted it up from the water and carried it back seaward toward a rock which jutted above the surface of the ocean.

When they had gone seven or eight yards they gently dropped their burden, and two others took their place at its wings. In this way it was gradually carried off to the rock some distance from where the man stood. When the naturalist approached this rock the wounded bird was again carried further out to sea, to another rock in the same manner. He could easily have secured his prize by another shot, but he hadn't the heart to level his gun at such brave, intelligent birds.

Another queer case is recorded where a mockingbird showed almost human intelligence, as well as a sort

of humorous delight in the astonishment he occasioned by his brilliant powers as a songster. This mockingbird had only recently been captured, and was placed near another cage in which were two canaries, both excellent singers. The mockingbird at first seemed to be struck dumb by his voluble neighbors, but it turned out that he was only biding his time. For several days he remained silent, taking notes, until he had mastered their song, when one day, without a preliminary rehearsal he burst out into a canary song in a loud, ringing tone that struck his yellow-throated neighbors mute with astonishment. After this it was a favorite amusement of his to drown the voices of the canaries with his own loud notes whenever they attempted to sing, and he showed a very evident enjoyment of his performance.

A remarkable exhibition of intelligence as well as gratitude and friendliness on the part of three bluejays was told me recently by a farmer friend of mine. The birds came to him under such peculiar circumstances that they are objects of curiosity in our entire neighborhood. He was fishing in a creek near his home, when his attention was attracted by the peculiar actions of a bluejay. The bird flew back and forth, crying and fluttering around him, and was in such evident distress that he followed it, as it flew before him, to a thick bush and darted at something concealed among the leaves. He parted the leaves and found a blacksnake with a young bluejay in its mouth.

He killed the snake with his fishing pole, took the bird from its mouth and then found a nest near by with two other birds in it. He brought the three jays home, the old one following with apparently no uneasiness, and raised these young birds as pets without any trouble whatever. The one found in

Sanitary Home Equipment

By O. E. ROBEY

I AM frequently asked the question, "What is the difference between the chemical closet and the septic tank as a means of sewage disposal, and what are the advantages of each?"

The chemical closet is a substitute for the privy. It does not take care of the water that is discharged from the bath-tub, sink or lavatory. The chemical closet can be installed in a room in the dwelling and can be kept in a sanitary condition without much difficulty. So installed it gives one the advantage of the indoor closet with a minimum of apparatus.

The chemical closet comes in two or more forms. A small size consists merely of a can or a pail holding about 30 quarts fitted with a seat and cover, and a ventilating pipe. This outfit can be installed in the home by merely placing it in an unused room or closet and extending the ventilation pipe up through the roof. Another form consists of a tank of two or three barrels capacity which is usually placed in the basement and connected to the room above by a large pipe upon which is fitted a porcelain closet bowl similar to that used on railway cars. This bowl is also provided with a ventilating pipe extending above the roof.

The operation of these chemical closets consists of the sterilization and the deodorization of the excreta by means of a chemical or disinfectant. The tank is partly filled with water, then sufficient chemical is added to make a solution suitable for sterilization purposes. It is evident that the successful operation of the closet depends upon the proper chemical and the faithful attention paid in keeping it re-supplied. The length of time upon which a closet can be operated with one "charge" of chemical depends upon two factors: The capacity of the tank, and amount of chemical used. A certain amount of chemical is only capable of sterilizing a definite amount of excreta. The larger tanks will usually last a family of five or six persons for about five months with one "charge" of chemical, while the smaller ones will not last more than two or three weeks, at the end of these periods it will be necessary to empty the contents, partially filled with water and add a new "charge" of chemical.

The septic tank also displaces the privy. It does more. It takes care of all classes of sewage; wastes from the closets, sinks, lavatory, bath-tub, laundry tubs, etc.

When a septic tank is installed the regular water flush closet can be used, together with the kitchen and bathroom fixtures commonly found in the cities and villages where there are sewers. Of course, some sort of a water system is necessary for the proper operation of the septic tank.

The septic tank is usually placed under the ground near the house and is generally built of concrete. However, one or two manufactured tanks made of steel and cast iron are being sold quite extensively. A vitrified clay tank is also upon the market. The septic tank is connected to the fixtures in the house by means of a sewer usually made of four-inch clay sewer pipe.

The operation of the septic tank does not depend upon the action of the chemical as some seem to think, but upon one of nature's very active forces—bacteria. The tank is made watertight and is so constructed that it becomes practically air tight. The sewage which comes in the tank after remaining under these air-tight conditions for a short time undergoes a chemical change due to the action of the anaerobic or non-air breathing class of bacteria. This bacterial action converts the solids partially into gases and partially into a soluble form which passes out of the tank with the liquid. This liquid is practically clear and odorless, but is not entirely clear

or entirely odorless and is not absolutely pure and fit for human consumption, as some would lead us to believe. It must be properly handled after leaving the tank. The method commonly followed is to filter it through the surface soil where it undergoes oxidation due to the soil bacteria.

Summarizing, then, the advantages and disadvantages of these two outfits might be stated as follows:

The chemical closet is very easily installed and does not require running water. On the other hand, the septic tank requires in addition a more or less complicated plumbing and water system.

The chemical closet will not freeze while a water closet and the necessary piping must be carefully protected.

The chemical closet only provides one convenience while the installation of a septic tank makes it possible to add the other bath-room, kitchen and laundry conveniences at any time.

The large-sized chemical closet will usually cost considerably more than the septic tank, including the sewer, but not including the plumbing and water system.

A properly designed septic tank will usually require no attention, except, possibly, a little cleaning once every five or six years. The chemical closet will need to be emptied at least once every five months and much oftener if of a small size. Also the chemical necessary for "charging" the closet will cost the average family five dollars per year. The bacteria in the septic tank cost nothing.

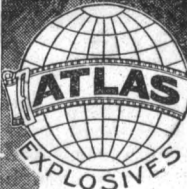
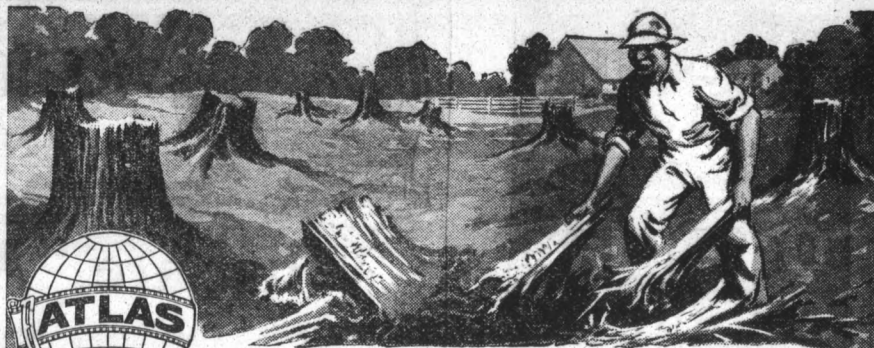
A well constructed septic tank should last a lifetime while it can hardly be expected that the chemical closets, as constructed at the present time, will be very long-lived.

Each of these two outfits have their particular place. A study of their advantages and disadvantages should enable one to select the outfit best suited to their needs. It should be remembered, however, that running water is becoming an absolute necessity in the farm home.

PARTNERS.

BY MILDRED M. NORTH.

"No, son, I'm not complaining; it makes my old heart glad That tho you love your mother you've not forgot your dad. You wrote us both a letter and now you come yourself, A-bringing us the posies that set there on the shelf. You've got a dear good mother; I love her more today Than when she said she'd love me and walk with me life's way. And that day when she'd promised that she would be my wife, And I had vowed to love her and cherish her through life, She took a wee pink rosebud and pinned it on my breast, And since that day I've reckoned pink rosebuds far the best. We promised we'd be partners, and so it seems to me They make this Day for Mother just half it ought to be. Together we've endeavored to teach you ways of right, Together we have watched you thru many an anxious night. We've found our burdens lighter because their weight we shared, And what each liked was better because the other cared. You've been a good lad, Thomas, and Ruth's a bonny girl, She's been her father's comfort since days of doll and curl. God's Good Book says such "honor" He ever will repay, That was His proclamation, He founded Parent's Day. But there are other fathers in this broad land of ours, Aren't they deserving praises and loving words and flowers? They talk of mother's burdens and what her love will do; Remember father loves you and he has burdens, too. And some day when you're thinking of the old home, then my lad Just wear a small pink rosebud in memory of your dad."



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Woman and Her Needs

At Home, and Elsewhere

What are "Advantages?"

JOHN'S father died, leaving the family in what the world calls "straightened circumstances." And there was only a small income, enough so that with careful management, mother's doing a little extra work and everyone's pulling together, the family could live, if not comfortably, at least as well as the average. But there wasn't enough money left so that everyone could settle down to a life of ease on what father died to accumulate. Besides John, aged eight, there was Billy aged ten, and Betty just turned five.

The friends and relations, as is usual at such times, all knew just what ought to be done, and most of them were not a bit shy about telling all they knew. It was the consensus of opinion, on mother's side, that the deceased husband and father was a brute for not having left enough insurance and real estate to keep the family in comfort until the children were educated and at work. On father's side they thought it would not hurt mother any to take a roomer or two to help out, but it would be a crime if she let those children go to work before they were through college.

Mother, being a discreet woman, kept her thoughts to herself and sat down to figure out resources, and ways and means of meeting her obligations. Her part was rather easy. She could rent two rooms, with breakfast, and there were several women in her club who had often asked her to do fine needle work for them. She never could be idle, and afternoons when she had a few minutes off she could make a good many dollars at hand work.

Billy was easy to settle, too. He got a paper route that brought him in \$5.50 a month. This more than clothed him and bought his school supplies. There was a nice little balance each month for the bank, and Billy fast acquired ways of thrift and the airs of a bank president. Betty helped, too, or at least thought she did, which is just as important, setting the table, clearing away, and straightening the living-room. Much of her work had to be done over, on the side, but meantime she was learning.

But John—there was the problem. Shrink from it as she would, mother always had to admit that John was lazy. The awful truth hurt, but it was there. John was winsome and bright, made friends easily, slid through his year's work at school without much effort, and was just as polite and sweet as a child could be. But when it came to work, there was the rub. John would not work if he could help it. He dawdled through one task, making it last as long as possible so he couldn't do another, and if he had a penny and mother wasn't around he hired Betty to do everything she was big enough to do. Mother was planning on John's taking Billy's route in another year, while Billy went into something with more pay, but John had no such ambitions. Indeed, he quite openly said he hoped Bill couldn't get anything better so he could keep his route.

Then along came the story book happening. A man, attracted by John's bright face and sweet smile, wanted to adopt him. He was not a millionaire, but his house was twice the size of John's and he drove a seven-passenger car and had a big income and could send John to college and "give him every advantage," whatever that means. At any rate that is the argument he

used to mother and what all the relations on both sides urged when they tried to make mother see she ought to let John go. John used it too, (I blush to say he wanted to leave home), though he didn't understand just what it meant. But living with the other family meant to him getting out of peddling papers or sweeping walks or doing any of the other things he hated. But mother positively refused.

"The advantages may be there but I can't see them," she said quite decidedly. "If you think it is an advantage for a boy to be brought up with nothing to do but have a good time, I don't," she said. "It would be the ruin of John and I can't permit it. He is just as lazy as he can be, yes he is," she affirmed as the two grandmother's started a protest, "and he has got to learn to work whether he likes it or not. Put him in a home where he would be pampered and petted as these folks would do and he would grow up an undesirable citizen. He has got to stay with us and do his share. Why should he have everything done for him while Billy and Betty and I must work? If we were destitute I might—no, I wouldn't even then. Each tub must stand on its own bottom," and John stays home."

So John stayed home and came as near sulking as his disposition would allow. He was too lazy even for that much exertion. And the family and friends divided into rival camps arguing over whether mother was right or wrong. Most of them thought she was wrong, so potent is the lure of money and idleness. But a few agreed with her that work is good even for growing children. And in telling the story ten years later John agreed with the minority.

DEBORAH.

COLD STORAGE OF FRUITS AND VEGETABLES.

BY JOHN MARSH.

A plentiful variety of fruits and vegetables adds greatly to the healthfulness and economy of country fare in the winter season, and the farmer is well repaid for the time and care necessary to preserve them. The truck crops most commonly preserved for winter use in the natural state are beets, turnips, rutabagas, potatoes, cabbage, celery, onions, salsify, carrots and parsnips. When properly stored and cared for, these crops may be kept throughout the winter in good condition for use.

On most farms a basement cellar is the only available storage room for winter, and the ordinary farm cellar answers the purpose perfectly if it affords proper control of temperature and moisture. A cellar in which a furnace is located is usually too dry for the storage of anything except pumpkins, squashes and onions, which keep most perfectly in dry air. However, if a room can be partitioned off from the furnace room, this objection can be overcome to a certain extent.

Most fruits and vegetables should be kept at a temperature only a few degrees above the freezing point, as a high temperature favors decay, and the evaporation of moisture. If the storage room adjoins a furnace room the temperature can be kept above the freezing point by controlling the ventilation into the furnace room, and in like manner the temperature can be lowered by admitting outside air at a temperature below the freezing point. The control of moisture is not such

an easy problem, but in the majority of underground cellars which are not directly connected with any room heated artificially, the humidity of the air is approximately correct. A cellar with an earth floor usually contains more moisture than one which is floored with cement or brick. If the air in a cellar becomes too dry, the condition may be relieved by emptying several buckets of water on the floor at intervals of a week or ten days.

The vegetables which require dry air are pumpkins, squashes, onions and sweet potatoes. These, except onions, will also stand a higher temperature than other vegetables. They should be very carefully handled previous to storing, as a slight bruise is almost certain to cause decay. Pumpkins and squashes will not keep long unless they are mature. Onions should be topped and carefully cured or dried, preferably in the open air, before they are placed in storage.

Irish potatoes require a damp cellar for long keeping. If the air becomes too dry they will wilt badly before the next year's crop is ready for use. Too high a temperature induces early sprouting. Exposure to light should be prevented as much as possible, not alone with potatoes, but also with all other root crops.

Cabbage for early winter use can be stored in a damp cellar. If the air is too dry, they should be covered with moist loam or sand to prevent wilting. However, cabbage can be most perfectly preserved in pits outdoors. The heads should be pulled up with the roots attached, and stood upside down in a well drained spot, and covered deeply enough with soil to prevent freezing.

Beets, turnips, rutabagas and carrots should be kept at a low temperature in a moist cellar; it will be necessary to cover them with moist loam or sand to prevent wilting if they are to be kept till spring. Like cabbage, they can be stored in frost-proof pits outdoors. A layer of hay or straw should be spread on the ground and the roots placed thereon in a conical pile, and covered with another layer of straw, and lastly a sufficient cover of soil to prevent them from freezing. Apples and potatoes are also successfully stored in this manner. The important points to observe being good drainage and security from freezing.

Celery should be taken up in late fall with the roots attached and stood in an upright position on the cellar floor, with the roots packed in moist loam. If the soil about the roots becomes dry the stalks will wilt; therefore it will be necessary to water it at intervals, care being taken to keep the stalks dry. Light should be excluded as much as possible to hasten blanching. There are several successful methods of keeping celery in trenches outdoors, by protecting the stalks with boards, and covering with soil. In all systems of storage the bunches should not be placed in close contact with each other, to prevent rotting of the tops.

Salsify or vegetable oyster and parsnips are not injured by freezing, and may be left where they grew throughout the winter. If some are wanted for use without the labor of digging in the frozen soil, a portion of the crop may be stored in early winter in moist loam on the cellar floor.

The storage of apples, which is the only kind of fruit usually kept until spring, is an easy problem. The nearer the freezing point they can be kept, the less will be the loss from rot, and in the case of long-keeping varieties, the air must be plentifully supplied

with moisture to prevent wilting of the fruit. In the case of both fruit and vegetables, specimens which are sound and perfect will be found most suitable for long keeping. Therefore it is well to select the most perfect specimens for keeping till spring. By exercising some care in selecting sound fruit and vegetables for storage, one can be reasonably sure of success, providing the conditions of temperature and moisture are at least approximately correct, and an abundance of fresh, palatable food in the natural state throughout the winter will certainly repay anyone for their time and labor.

THE NEW PATCHWORK.

BY MAE Y. MAHAFFY.

Those of us who have preserved the applique patch quilts of our grandmothers and great-grandmothers, are fortunate, indeed, now when applique forms such an important feature in the fancy work world. The old-time work was done in the tiniest back stitches, a veritable marvel to most of the workers of today, but for those of us who lack the ability to produce such invisible stitchery there is now the expedient of button-holing the patches into place, if desired, a self-colored floss being used.

Not alone quilts, but stand, dresser, chair and pillow covers, bags and curtains, all are elaborated in this old-fashioned method now, and when used with a plainly decorated wall, rag rugs and Colonia furniture provide a pleasing change from the usual lingerie fittings.

For the foundation of such work a plain white linen or a heavy unbleached muslin or sateen is usually seen. Chambray or linen in color is used for the applique. If one already possesses an old patchwork quilt the same design may be carried out in other draperies. If not a flower pattern will prove desirable, pink in three shades and green in two being used. The buds are of the deepest pink, while the remaining shades are united in the roses.

If buttonholing is used for the outlines French knots may fill the centers of the roses, but if the old-time method of overcasting is followed it will be better to applique a bit of pale green or yellow in the centers.

PRETTY PICKLES FROM GARDEN LEFT-OVERS.

BY LULU G. PARKER.

Once upon a time a good giant got the idea that sunbeams might be extracted from cucumbers. He labored for years, so the story goes, hoping to bottle the sunbeams in hermetically sealed vials, so that he could let them out to warm the winter world. Whether he succeeded or not in his attempt the story does not tell, but perhaps it was this giant who gave the hint to the first housekeeper who extracted the goodness out of the cucumber and turned it into preserves and pickles for winter comfort.

Besides the cucumber, ripe and green, the average garden has, when the first frost comes a surplus of small onions, green tomatoes, under-ripe melons, and other good things which the economical house-wife may well utilize when preparing her winter store of "sunshine."

This is the way one housewife uses her left-overs:

Ripe Cucumber Catsup.—Remove peel and seeds from firm, ripe yellow cucumbers. Chop them fine or run through a grater. Add a little salt and put into a muslin bag to drain over night. In the morning put into a porcelain kettle, cover with cold vinegar to which has been added sugar, pepper, and mixed spice. Boil until thick and seal in air-tight bottles while hot.

Green Tomato Soy.—To two gallons of chopped green tomatoes add a dozen large onions, four pints of vinegar, two pints of sugar, two tablespoonfuls

each of salt, pepper, and ground mustard, one tablespoonful each of all-spice and cloves. Mix in the kettle and let stand over night. Then boil over a slow fire for four hours or until the tomato will cut with a spoon, and the juice is thick and syrupy. This may be canned hot when it will be excellent to serve with baked beans or cold meat. Or it may be strained through a coarse sieve, returned to the fire and boiled down to a thick paste. Then allow it to cool, and seal in jelly glasses. This is an old-fashioned recipe.

Sliced Cucumber Pickles.—This is a slightly way to use the culls and misshapen cucumbers which are found on the vines at the end of the season. Wash, wipe, and slice the cucumbers into a stone jar. To each hundred cucumbers of medium size add a sliced onion and sprinkle with one cup of salt. Let stand over night. In the morning drain off the liquid, rinse, and put back into the jar. Mix one-fourth pound of white mustard seed, two tablespoonfuls of mixed spice, one tablespoonful of pepper, the same of celery seed if desired, one cupful of olive oil, and enough cider vinegar to cover. Pour over the cucumber and press down with a plate. In two or three days they will be ready to use.

Sweet Pickles.—Small quantities of crab-apples, plums, peaches, etc., may be pared and pickled in the following syrup. To every quart of fruit allow one cup of sugar and one pint of good vinegar, with half an ounce of stick cinnamon, one tablespoonful of whole cloves, and one tablespoonful of whole allspice. Boil the syrup until thick, then add the fruit and boil until tender enough to be pierced with a straw. Put in cans or jars and cover until the following day. Pour off the syrup and reheat for two mornings, when seal or tie up.

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Markets.

GRAINS AND SEEDS.

September 26, 1916.

Wheat.—While a few dealers are endeavoring to make much of the fact that the present visible supply of wheat is 56,672,000 bushels as compared with 11,350,000 bushels a year ago, it should be borne in mind that the crop of this country is about 400,000,000 bushels short of last year's crop, and according to the statistics issued by the International Institute of Agriculture, the wheat production in those countries where estimates can be secured is over 30 per cent less than the production in 1915. Foreigners appear to be aware of the general shortage and are buying on every break of the market. As a result, the prices show a general advance over those ruling a week ago. Millers are also aggressive in the purchase of raw materials and their taking of cash wheat has added greatly to the activity in the cash department of the American markets. Farmers are also inclined to hold their surplus, while the transportation facilities are so crowded that shippers of grain have considerable trouble in securing cars. One year ago No. 2 red wheat was quoted at \$1.09 per bushel. Last week's Detroit quotations were:

Table with columns for No. 2 Red, No. 1 White, and Dec. for Wednesday, Thursday, Friday, Saturday, Monday, and Tuesday.

Chicago.—Sept. wheat \$1.53 1/4; Dec. \$1.54 1/4; May \$1.54 3/4.

Corn.—A fairly active market in this cereal was maintained during the past week, and prices now rule a fraction higher. While frosts have done considerable damage to the fodder, the grain in most sections has escaped serious damage. Eastern shippers are taking the grain in fairly large quantities, while exporters bought considerable corn on the seaboard on Monday. The visible supply for the United States increased 741,000 bushels for the week. A year ago No. 3 corn was quoted at 73c per bushel. Last week's Detroit prices were:

Table with columns for No. 3 Mixed, No. 3 Yellow, and Dec. for Wednesday, Thursday, Friday, Saturday, Monday, and Tuesday.

Chicago.—Sept. corn 87 1/2c; Dec. 72 1/2c; May 76 1/4c.

Oats.—There is a fairly broad demand for oats, including export calls. On Monday 640,000 bushels were sold on our seaboard for European use. The local price advanced a fraction on Monday. Standard oats a year ago were quoted at 39 1/2c. Detroit's prices for last week were:

Table with columns for Standard, No. 3 White, and Dec. for Wednesday, Thursday, Friday, Saturday, Monday, and Tuesday.

Chicago.—Sept. oats 46c; Dec. 48 3/4c per bu; May 51 3/4c.

Rye.—This market is slow with the price 1c higher at \$1.23 for cash No. 2.

Beans.—The buyers are now offering 25c more for October beans on the Detroit market than they were a week ago. Although the crop in many districts of the state is of good quality, reports show that the expected short yield is being fully realized and if there is much inclement weather it is certain that farmers will lose a considerable portion of their unusually short crop because of the unripened condition of the vines. Detroit quotations for immediate and prompt shipment is \$4.90 and October \$4.75. At Chicago the market is firm with Michigan pea beans, hand-picked, quoted at \$6@6 25 per bushel, and red kidneys at \$5.75.

Peas.—The transactions are small and unreported so that it is impossible to give quotations for this legume.

Seeds.—Prime red clover \$9.60; alsike \$9.75; alfalfa \$10@11; timothy \$2.30.

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 \$7.80; straight \$7.60; spring patent \$8.40, rye flour \$7 per bbl.

Feed.—In 100-lb. sacks, jobbing lots

are: Bran \$26.50; standard middlings \$28; fine middlings \$35; cracked corn \$39; coarse corn meal \$30; corn and oat chop \$34 per ton.

Hay.—(New) No. 1 timothy \$14@15; standard timothy \$13.50@14; light mixed \$17@18; No. 2 timothy \$12@13; No. 1 mixed \$10@11; No. 1 clover \$8@10 per ton.

Straw.—Rye straw \$6.50@7; wheat and oat straw \$6.50@7 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Trade at Detroit is fairly active and firm with prices 1/2c higher than last week. Creamery extra 32 1/2c; do. firsts 31c; dairy 25c; packing stock 24 1/2c per lb.

Elgin.—Values are 1/2c higher. High prices are curtailing trade. Market is firm at 33c per lb.

Chicago.—Market is firm and higher. A good demand exists but mostly for under grades. Creamery extras quoted at 31c; extra firsts 32@32 1/2c; firsts 30 1/2@31 1/2c.

Eggs.—The trade is brisk at Detroit and prices for firsts have advanced 1/2c. Firsts 30 1/2c; current receipts 28 1/2c per dozen.

Chicago.—Market steady and higher for firsts and easy for storage. Firsts 29 1/2@30c; ordinary firsts 28@29c; at mark, cases included, 22@29c; firsts, storage paid 27 3/4@28c.

New York.—Fresh gathered extra fine 38c; extra firsts 35@37c; firsts 32@34c.

Poultry.—Fat hens are in demand and higher. The market is firm. Live broilers 19@20c; fat hens 20@21c; average do. 17@19c; ducks 17c; geese 13@14c; turkeys 24@25c per lb.

Chicago.—Liberal receipts brought lower prices for fowls. Turkeys 15@25c; fowls 16@16 1/2c for general run; extra heavy 18c; light weight 15c; roosters 13c; springers 18c; ducks 13@15c; geese 14@17c.

FRUITS AND VEGETABLES.

Apples.—Market is quiet and firm. Prices are slightly lower. Barreled stock \$2.50@3.50 for fancy; No. 2, 50c @ \$1 per bushel. At Chicago a steady feeling prevails for fancy stock which sells for \$2.25@4.50 per bbl; No. 2 stock \$1.50@2 per bbl.

Peaches.—Peaches are in demand and higher. Fancy \$2; AA, \$1.75; A, \$1.50; B, 85c@ \$1. At Chicago good stock has an excellent sale. Good Michigan Elbertas are bringing 75c@ \$1.50; other kinds 50@75c per bushel.

Pears.—Bartletts are steady at \$1.50 @1.75 per bushel; other kinds \$1@1.25. At Chicago No. 1 Bartletts bring \$3@5 per bbl. Seckle at \$4.50@5; other kinds \$2@3; No. 2 all kinds \$1.50 @2.25.

Grapes.—Delewares and Niagaras sell for 12@12 1/2c per pony basket, and Concord at 21@22c. At Chicago the demand is good. Concord in 8-lb. baskets (6@6 1/2 lbs. net) bring 17@18c; Delewares 18c; Niagaras 12 1/2@15c.

WOOL AND HIDES.

Wool.—No changes have come to this trade. Prices continue to rule high and holders are in control of the business.

Hides.—No. 1 cured 19c; No. 1 green 16c; No. 1 cured bulls 14c; do. green 12c; No. 1 cured veal kip 23c; do. green 18c; No. 1 cured calf 29c; do. green 27c; No. 1 horse hides \$5.50; No. 2 do. \$4; sheep skins as to amount of wool 50c@ \$1.25 each.

GRAND RAPIDS.

Warm weather is bringing in the peach crop with a rush and this week will see the bulk of the crop marketed, with prices around \$1@1.25. Apples are worth 75c@ \$1 for Wolf River and Wealthy. Potatoes at most of the outside shipping points are bringing 90c@ \$1, but Grand Rapids consumers are paying 45c a peck for tubers of just fair quality. Local bean men are offering farmers \$4 and they say the market is surely going lower. The egg market has advanced to 30c.

DETROIT EASTERN MARKET.

A very large volume of business was transacted on the eastern market Tuesday morning. Peaches were abundant and sold at \$1@2.25 per bushel; apples \$1@2; tomatoes are firm at \$1.50@2; a few potatoes were offered at \$1.75@1.85 per bushel; grapes 60@75c per 20-lb. basket; eggs 40c per dozen; no loose hay nor butter in sight.

LIVE STOCK MARKETS.

Buffalo.

September 25, 1916. (Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 217 cars; hogs 85 d. d.; sheep 45 d. d.; calves 1000 head.

With 217 cars of cattle today, the trade was very slow and all classes of cattle sold 25c per cwt. lower, except the bulls and culling cows and they sold about steady. There were some of the best shipping cattle looked 40c a hundred lower. They had a heavy run in Jersey City and there were very few orders here from the east. We look for a liberal run of cattle next Monday and a steady trade.

We had a liberal supply of hogs today, footing up a total of about 85 double decks, and while a few of the choice old hogs looked about steady with Saturday, the general run, which was rather poor in quality and underweight stuff, looked fully 10c lower than the close of Saturday. One load of four decks of fancy sold at \$11.50 and a few loads at \$11.30@11.40, with the bulk of the best from \$11.15@11.25. Choice lights, weighing around 140, at \$10.50, and the bulk of the pigs at \$9.75; roughs \$9.75@10; stags \$7.50@8. About everything sold, and while it looks like the good weight hogs will sell quite well the balance of the week, would be a little careful in the in-between kinds; too many of this kind coming for the demand.

With a liberal run of lambs today our market opened slow and 10c lower than the close of last week, and we will have to have moderate receipts to hold prices steady the balance of the week.

We quote: Best lambs \$10.80@10.90; cull to common \$9@10; yearlings \$7@9.25; bucks \$5.50@6.50; ewes \$7.25@7.50; cull sheep \$3.50@5.50; wethers \$8@8.25; top veals \$12.75@13; heavy \$8@9; common and light \$10@12; grassers \$5.50@6.

Chicago.

September 25, 1916.

Cattle. Hogs. Sheep. Receipts today..22,000 32,000 33,000 Same day 1915..15,797 21,662 14,220 Last week.....70,641 114,199 122,618 Same wk 1915..40,704 74,544 89,324

Following last week's enormous cattle receipts, today's run looked decidedly too generous, and it was very late when buyers got down to business. Choice beefs were scarce, and prices were called steady for these, although the best sale, which was at \$10.90, looked low when placed in comparison with last week's sales. The run included about 3,500 cattle from northern ranges, and these promised to sell at about steady prices. The aggregate cattle receipts at all western markets were of enormous proportions, with 38,000 head arriving in Kansas City. Hogs opened steady, with a top reported at \$11.30, but later the market was 5c lower or more. Hogs received last week averaged only 222 lbs. The day's receipts of sheep and lambs were reported at around 34,000 towards the middle of the morning, and Omaha received 42,000 head. Some prime native lambs sold early at \$10.65, an advance of 15c, but little was done at a rather late hour, and it was assumed that the market would average considerably lower. Shipments from Chicago last week amount to 17,658 cattle, 6,800 hogs and 29,924 sheep.

Cattle prices were on the downgrade most of the time last week because of the greatly increased receipts here, as well as at the other western markets, the only kind that showed firmness being the small offerings of strictly prime heavy beefs and yearlings that had had plenty of corn. The daily receipts were made up mostly of grassers and warmed-up or too short-fed cattle, and grass-fed lots caught the worst part of the declines. The great bulk of the steers crossed the scales at a range of \$7.75@10.65, with the choicest steers carrying plenty of weight taken at \$10.50@11.20, the only sale above these prices consisting of 22 head of fancy cattle averaging 1649 lbs. at \$11.30. A good class of steers sold for \$9.50@10.45, with good to prime yearlings going at \$9.50@11. Medium grade steers went at \$8.50 and upward, while the plain short-fed lots brought \$7.50@8.45, with some inferior little grass steers selling down to \$5.75@6.75 and upward. Butchering cows sold at a range of \$5.30@8.25, while butchering heifers brought \$4.75@9, a few prime yearling heifers selling up to \$10 or even higher. Cutters sold at \$4.50@5.25, canners at \$3.50@4.45 and bulls at \$4.75@8. There was a brisk demand for calves of desirable quality, and high prices were paid, light vealers selling at \$11@13 per 100 lbs., while heavy calves brought \$5@10 mostly. Western range cattle were much more plentiful and sold freely on the basis of \$6.75@9.80 for steers, but not many sales took place near top figures. There was a fairly large traffic at times in stockers and feeders, prices ruling at \$5@7.80 for inferior to choice offerings, with a sale of a drove of choice 1050-lb. feeders to a Pennsylvania buyer at \$7.65. At the close the great bulk of the beef cattle sold 26@50c lower than a week ear-

lier. Cattle receipts were the largest since the last month of 1914.

Hogs were marketed more freely last week than a week earlier, and after early advances that landed prime butcher weights at \$11.60, the highest price on record, declines took place. Eastern shipping orders for hogs proved disappointing, and their meager purchases enabled the local packing fraternity to force some sharp declines in prices, in which the choicest consignments had their full share. The packers received some large supplies of hogs consigned to them direct from outside points, while shipments of hogs from here were only 1,500 head on one day. Buyers were extremely discriminative in making their selections, and the undesirable offerings had to sell at a greater discount than heretofore. At times the day's decline amounted to as much as 25c, with grassy hogs selling very badly. At the week's close hogs sold at \$9.85@10.35 for mixed packing lots, \$10.85@11.30 for selected butchers, \$11@11.20 for selected light shipping, \$10.75@11.15 for heavy shipping and \$7@9.95 for pigs, with pigs averaging 130 to 135 lbs. the highest.

Sheep and lambs were marketed last week in greatly increased numbers, and this resulted in material reductions in prices, in which the best range lambs shared fully. Receipts embraced liberal supplies consigned from other western markets to the packers direct, and these were used to effect sharp declines in values. Range feeding lambs of superior quality continued to sell high, and there was a sale of 283 head of prime Washington feeders averaging 62 lbs. at \$10.75, being 15c higher than the previous top price. An Illinois man bought them, his intention being to finish them on a short feed. At the end of the week fat lambs sold 35@50c lower and ewes 25c lower than a week ago, while wethers and yearlings were steady. Lambs closed at \$7.75@10.60, feeding lambs at \$9.50@10.50, yearlings at \$7.50@9, wethers at \$7@8.50, ewes at \$3.50@7.50, breeding ewes at \$7@10 and bucks at \$5@6.

LIVE STOCK NEWS.

While the sheep and lamb trade in the Chicago stock yards shows frequent fluctuations in prices, with lower values at times for the rank and file of the offerings, with feeding lambs from the ranges of the north selling lower under increased receipts at times, the best feeders have scored still another high record by selling up to \$10.75 per 100 lbs. Shipments from the range country are now at their highest in volume, with the Missouri river markets getting a liberal share, and even the best killers have sold at lower prices.

The Chicago live stock markets have been greatly excited as the time of the threatened railroad strike drew near, and highly sensational advances in prices took place for pretty much everything, cattle, hogs, lambs and sheep included. At times receipts were of normal proportions, but the packers and shippers were loading up for an emergency, as they feared a stoppage of supplies.

Materially increased supplies of cattle have been reaching the Chicago and Missouri river markets of late, grassers comprising the great bulk of such offerings, with the Chicago stock yards getting much increased numbers of grass cattle from the northern ranges, while the "river" markets got no end of grassers from the southwestern pastures. While the production of prime corn-fed beef cattle has been neglected, causing prices to rule very high for these, grassers have had to go at much reduced figures, and the spread in cattle prices is extremely wide. It is true that even the choicest beefs have suffered some declines, but they are much slower to weaken than the other descriptions, and they still sell much above prices paid in recent years. A good indication of the growth of cattle production is furnished by the fact that during the first eight months of this year the seven principal western markets of the United States, Chicago, Kansas City, Omaha, St. Louis, St. Joseph, Sioux City and St. Paul received in the aggregate 5,086,000 cattle, showing an increase of 696,200 head over the corresponding period last year. This looks like quite a gain, yet the growth of our population and the expansion in our beef export trade have taken such good care of the increased supplies that there is really no surplus. The northern range cattle marketed in Chicago show improvement in average grading and sell much better than their native competitors. The largest call daily is for fat little butcher cows and heifers for the local trade, there being an urgent inquiry for beef that can be retailed at moderate cost, and the steer trade opens usually at a much later hour of the day.

THIS IS THE LAST EDITION.

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.

September 29, 1916.

Cattle.

Receipts 2949. Another heavy supply in all departments came to hand this week and everything was late in arriving, making Wednesday at the local stock yards one of the most discouraging days seen here in a long time. The weather was warm and close and as a consequence a large number of dead hogs was found in the cars; this has been the case for some time and most of the trouble is on account of its taking so long to get the stock to the yards after arriving at the various terminals. Surely better service could be made with a slight effort on the part of the railroads, and it is hoped something may be done to better conditions.

The cattle trade this week was very dull and fully 25@50c lower than last week on everything but prime steers, canners and bulls, which held steady. The quality was of the common as a rule, many thin light grades that should not come to market being in the receipts. There was a few country buyers who had pasture buying stockers to send home and they had no trouble getting what they wanted. Cheap milch cows held steady but the common grades were extremely dull. The close was dull at the decline. Best heavy steers \$7.75@8; best handy weight butcher steers \$7.25@7.50; mixed steers and heifers \$6.50@7; handy light butchers \$6@6.25; light butchers \$5@5.25; best cows \$6@6.25; butcher cows \$5.25@5.50; common cows \$4.50@4.75; canners \$3.50@4.25; best heavy bulls \$6@6.50; bologna bulls \$5.25@5.50; stock bulls \$5@5.25; feeders \$6@7; stockers \$5.50@6; milkers and springers \$4@80.

Bishop, B. & H. sold Parker, W. & Co. 6 cows av 1066 at \$5.50, 1 do wgh 920 at \$4.16 do av 1060 at \$5.75, 16 do av 920 at \$4.75, 16 steers av 860 at \$6.50, 9 do av 1110 at \$7.75; to Resnick 1 bull wgh 1750 at \$7, 1 do wgh 1000 at \$6; to Sullivan P. Co. 11 butchers av 873 at \$6.25, 9 cows av 1090 at \$5.60; to Fineman 34 butchers av 760 at \$5.50; to Rattkowsky 5 do av 534 at \$5.50; to Mich. B. Co. 22 steers av 1062 at \$7.50, 27 do av 902 at \$6.25, 4 do av 820 at \$6.40, 17 do av 815 at \$6; 2 bulls av 865 at \$5.50, 9 cows av 908 at \$5.10; to Parker, W. & Co. 10 do av 934 at \$4.50, 2 do av 1115 at \$5.50, 8 do av 893 at \$5, 2 bulls av 1255 at \$6, 40 steers av 1048 at \$7.35; to Kull 13 do av 970 at \$7; to Resnick 18 butchers av 716 at \$5.60; to Parker, W. & Co. 4 do av 660 at \$5, 3 cows av 757 at \$4.25, 2 do av 815 at \$4.25, 3 do av 883 at \$4.25, 2 steers av 825 at \$5.50, 1 bull wgh 1080 at \$6, 11 cows av 920 at \$4.25, 7 do av 883 at \$4.25, 8 butchers av 957 at \$5.75, 3 do av 557 at \$4.75, 5 cows av 922 at \$5.25, 6 do av 701 at \$5.50, 3 steers av 613 at \$7.50.

Veal Calves.

Receipts 813. The quality of veal calves offering was common as a rule but prices held strong from opening to close, the best selling at \$12.50@13, and common and heavy grades \$6@8.75; the close was dull with best at \$12.50@12.75.

Haley & M. sold Nagle P. Co. 2 av 190 at \$13.50; to Parker, W. & Co. 5 av 150 at \$13; to Goose 3 av 350 at \$7; to Parker, W. & Co. 4 av 140 at \$13; to Nagle P. Co. 14 av 160 at \$13; to Mich. B. Co. 5 av 125 at \$13, 8 av 145 at \$13.

Sheep and Lambs.

Receipts 6262. In the sheep and lamb department the market on sheep held steady but lambs were fully 25@35c lower than at the opening Monday and the quality was decidedly common; quite a lot of common half-fat bucky lambs among them that were hard to sell. The close was dull with tops selling around \$9.75@9.90, with a very few early at \$10. Best lambs \$9.75@10; fair lambs \$9@9.50; light to common lambs \$8@8.50; fair to good sheep \$6.25@6.75; culls and common \$3.50@4.50.

Sandel, S., B. & G. sold Nagle P. Co. 48 lambs av 65 at \$10, 20 sheep av 85 at \$6, 15 do av 105 at \$5.50, 60 lambs av 75 at \$10; to Thompson 54 do av 75 at \$10.15; to Sullivan P. Co. 67 do av 78 at \$9.85, 81 do av 75 at \$10.25, 6 sheep av 95 at \$6.25; to Thompson 18 lambs av 70 at \$10.10; to Nagle P. Co. 129 do av 75 at \$10.

Hogs.

Receipts 9500. In the hog division the market was very dull and 10c lower than on Wednesday and fully 50c lower than they were a week ago. Pigs \$8.50@9; yorkers and mixed grades \$9.50@10; bulk of few extra fancy 5@10c higher.



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Name..... Town..... R.F.D. or P.O. Box..... State.....



Hog raisers know

the value of good tankage for quick growth, big frame and long profits. But do you know any other concern that makes a money-back guarantee on tankage? See page 1539, our General Catalog.

Sears, Roebuck and Co., Chicago.

Farmers: We are now paying from three to nine cts. above the highest Official Detroit Market Quotation for eggs, shipped to us by express. Write us for information. It will pay you. AMERICAN BUTTER & CHEESE CO., Detroit, Mich.

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons Co., 623-625 Wabash Bld., Pittsburgh Pa.

FRUIT HIGHEST MARKET PRICE Quick Returns. Write for Stencil. Ship Direct to E. L. RICHMOND CO., Detroit.

EGGS, ETC.—Small consignments from producers in your territory bring very attractive prices. Returns day of arrival. Refer to Dun or Bradstreet. Zenith Butter & Egg Co., 170 Duane Street, New York, N. Y.

HOGS

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 Fin-oka Cherry King 67145. 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.

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.

Dobson's Durocs Combined, size, quality, breeding. Herd boars, spring boars, spring sows for sale. Orlo L. Dobson, Quincy, Michigan.

Duroc Jersey Gilts of the large heavy boned type bred to a Son of Orion Cherry King the greatest boar of his breed. Bred for early Sept. farrow. F. J. DRODT, R. 1, Monroe, Michigan

Duroc Jersey Spring and Summer Boars and Gilts, Ohio Chief breeding \$10 to \$25. NEWTON BARNHART, St. Johns, Mich.

Duroc Jersey Boars of the large, smooth big boned type. E. D. Heydenberk, Wayland, Michigan.

CHESTER WHITES Sows bred for Sept. farrow, spring pigs in pairs, not akin. F. W. ALEXANDER, Vassar, Mich.

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. Sneyers, Mt. Pleasant, Mich. R. 4.

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.



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 those fine early developers—ready for market at six months old. Write for my plan—More Money from Hogs. G. S. BENJAMIN, R. E. D. 10 Portland, Michigan



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. October boars weighing 200 lbs. at \$25 each for April shipment. C. J. THOMPSON, Rockford, Michigan.

O. I. C. Swine. If you are in the market for a Spring boar, of April farrow write to H. W. Mann, Danville, 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 Doux model 29015, 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. Spring pigs either sex, large bone and good growth. Prices right. A. J. BARKER, R. R. 1, Belmont, Michigan

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's Pairs and Trios no akin. 2 Reg. Holstein bulls 6 and 8 months old. Cloverleaf Stock Farm, Monroe, Mich., R. No. 1.

O. I. C. Choice Gilts bred for fall Farrow and Spring Pigs. Prize 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.

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

FOR SALE: 35 head of thoroughbred O. I. C. hogs F will be sold at my annual hog sale Oct. 16. Write for catalog. E. B. Milet, Ploverville, Michigan.

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.

(Additional Stock Ads on page 305).

Farm Commerce.

Protecting Milk and Cream Tests

DO you know whether the buyer is grading your wheat, testing your sugar beets, picking your beans, sampling and testing your milk and cream correctly?

Is there any reason why this important matter should be left entirely in the hands of the buyer when both parties have equal interest in the work of sampling, grading and testing?

At different times this journal has pointed out the imperative need of safe-guarding this cardinal act in the marketing of farm products. A few years ago its publishers inaugurated a service whereby subscribers could have samples of cream and milk tested in order to have the tests reported by the purchasers of these goods verified. That service threw much light on the practices of milk and cream buyers. Because of the questionable methods employed by some we are pleased to note that prudent legislation is being enacted in some of our commonwealths to compel the return of correct reports.

Along this line the state of New Jersey has taken a forward step in the matter of securing for the sellers of milk and cream honest tests of the percentage of butter-fat. Early this year the legislature of that state enacted a law regulating the weighing, testing and purchasing of milk and cream on the basis of the percentage of butter-fat.

This law requires that all glassware used in connection with the butter-fat tests must be previously inspected and approved by the director of the state experiment station. The law also provides that every buyer of milk or cream shall have in his employe a licensed tester by whom or under whose supervision all testing of milk and cream purchased on the basis of the percentage of butter-fat contained therein shall be done.

The director of the experiment station issues licenses to these testers. A written application in which the tester states the kind of test he intends to use must be made to the experiment station director, following which an examination designed to prove the competency of the party is held. Should the examination prove the party to be capable, he will be issued a license. This license may be revoked by the director at any time upon proof of the incompetency of the party holding it or his failure to comply with any of the provisions of the act.

The law further provides that the butter-fat reading as taken from the graduation on the neck of the test bottle must be accurately made and taken at a temperature between 130 and 150 degrees F. The law specifically states that no person purchasing milk or cream and paying for the same on the basis of the percentage of butter-fat contained therein and no employe of any such person shall fraudulently under-read, over-read or otherwise fraudulently manipulate the test, or shall falsify the record thereof, or shall read the test at any temperature except within the range of those mentioned above.

Authority is granted to the director of the experiment station or his deputies to enter and inspect the premises of any person purchasing milk or cream and paying for the same on the basis of the percentage of butter-fat contained therein. The director or deputy also has authority to examine the books and records of any person purchasing milk or cream and paying for same on the butter-fat basis.

The law imposes upon the purchaser the duty of taking composite sam-

ples, the same to be made up of an aliquot part of the milk or cream purchased from any one person. These samples are to be properly kept by means of a suitable preservative for at least ten days after the milk or cream from which the sample was collected, has been paid for. The experiment station director or his deputy shall have power to enter upon the premises of any creamery concern for the purpose of testing these composite samples of milk or cream.

In case of violation of the provision of this act, the measure provides a penalty of \$100 for the first offense and \$200 for the second and each subsequent offense. Actions are brought by and in the name of the director of the experiment station.

THE KALAMAZOO CITY MARKET.

Without any investment in site or in market shed, Kalamazoo is receiving the benefits of a public market. A block on a side street not far from the center of the city has been set aside as



Farmers About Kalamazoo Appreciate the Opportunity to Sell Produce Direct to Consumers and Peddlers. City Authorities have Named a Street Near the Business Section as a Public Market.

the market and each morning from May 1 to November 30 it is the scene of lively trading in farm produce. The producers occupy one side of the street and the hucksters the other, the buyers who come in autos leave their cars around the corner while they make their purchases. The main business is between the producers and the hucksters, although a few grocerymen come to the market to procure their supplies of fresh vegetables and fruits. The producers come in from the surrounding territory and sometimes from a distance. For instance, the other morning there was an auto with peaches and pears from the Van Buren fruit belt. The number of producers on the market each morning varies from ten to thirty and the number of huckster buyers is about the same.

The market is under the supervision of the sealer of weights and measures who has the title of market master and who has police powers. He is responsible to the city council. Appeals from the decisions of the market master must be made to the council. Violators of the market rules, on conviction, can be fined \$100 or sent to jail for sixty days, or both fined and jailed.

The ordinance governing the market is in many respects above the average for such official documents. It was prepared and passed after the plan of

the city market had received the scrutiny of the federal office of markets. Ingham Co. R. H. ELSWORTH.

COLD STORAGE HOLDINGS LESS THAN LAST YEAR.

Butter.

The Office of Markets of the U. S. Department of Agriculture announces that reports from 166 cold storage concerns show that these firms had in storage on September 1, 102,843,822 pounds of creamery buttre, an increase of 10.6 per cent since the reports made on August 1 of this year.

Of these firms 143 made reports of their holdings a year ago. From these it appears that the present stock aggregates a total of 100,989,976 pounds, as compared with 101,661,678 pounds held by the same firms a year ago, indicating a decrease of two-thirds of one per cent.

Cheese.

The same authority reports on 152 cold storage concerns holding American cheese. These firms had on hand September 1, 30,437,771 pounds of this product. Of these concerns 119 reported their holdings a year ago. The stock held on September 1 of this year by the 119 firms totaled 27,745,176 pounds, as compared with 28,574,634 pounds for September 1, 1915, indicating a decrease of 829,458 pounds, or 2.9 per cent. Both whole milk and skim-milk cheese are reckoned in the

hooves the officers of every Michigan shipping association to try and raise packing standards. It is no advertisement to Michigan, nor is it any benefit to our producers, to have fruit packed as were the eight baskets in question, to go to the trade or the consumers. While it may not be possible in all cases to prevent the kind of packing described above, it certainly is the duty of every association officer to do all in his power to discourage it. The success of the fruit industry depends very largely upon getting it onto a more satisfactory basis.

JAS. N. McBRIDE,
Michigan Director of Markets.

SUGGESTIONS ON HANDLING DRESSED POULTRY.

Never handle chickens roughly, either before or after killing. Rough handling causes bruises, broken bones, scarred skins, and soft places in the flesh. Undue haste on the part of the killers and pickers results in lowered keeping quality and poor appearance of the product.

Don't kill a chicken when the crop is full of feed. Give the chicken only water for 24 hours before it is killed. Food in the crop or in the intestines of a dressed chicken causes loss of flavor and hastens decay, which more than offsets any gain from extra weight.

Hang the chicken by both feet while picking. Hanging by one leg spoils the shape of the bird. Picking on the lap gets the skin dirty and hastens decay.

Dry pick if possible. Scalding is particularly undesirable where birds are to be held for some time, because it hastens decay.

Pack in boxes or small kegs whenever possible. A large barrel makes an undesirable package, because where poultry is packed in large masses the weight of the upper layers crushes the birds at the bottom. Line all packages with parchment paper and cover the top of the poultry before the lid is put on. Wrap every head in suitable paper so that blood from one bird will not mar the appearance of another.

Crop and Market Notes.

Michigan.

Livingston Co., Sept. 20.—The yield of wheat and oats was below normal. Wheat 12 to 15 bushels, and oats about 30 bushels per acre. Corn, potatoes and beans will be light crops here. Apples and pears promise well, while cloverseed seems to be well filled. But little wheat ground has been plowed. Pastures are dried up and farmers are feeding their stock. Killing frosts on the 17th and 18th.

Muskegon Co., Sept. 14.—The wheat crop is light but quality is very good. Oats yielded poorly, and the grain is light. Corn is doing well. Potatoes are not developing tubers. The bean crop will be small. Plenty of rain is needed for fall seeding. Poor prospects for late apples, and peaches are scarce. Wheat \$1.45; milk 15c per gallon; pork 12c; eggs 30c; chickens 15c per lb.

Cheboygan Co., Sept. 14.—Wheat yielded 12 to 18 bushels per acre. Corn is a very good crop here, but potatoes and beans are short. More than the usual amount of wheat and rye are being sown. Late apples are good, pears a fair crop. Wheat \$1.50; butter-fat 29c; eggs 30c; butter 25c.

Ingham Co., Sept. 14.—Corn, potatoes, beans and sugar beets will be less than normal crops. Wheat yielded around 20 bushels; oats 35 to 40 bushels. The ground is too dry for plowing. Fruit prospects are poor. Wheat \$1.37@1.42; milk \$1.70@1.80 per cwt; butter-fat 32c; chickens 14@15c; potatoes \$1.50; beans \$4@5; hay \$8@10.

Emmet Co., Sept. 15.—The yield of early potatoes was very light. Prospect for late crop is fair. The apple crop will be small. Beans will yield below an average crop. Wheat \$1.30; hand-picked beans \$5@5.25; eggs 32c; butter 32c; pork 11@12c; new hay \$9@10.

Berrien Co., Sept. 15.—The average yield of wheat is 15 bushels; oats 25 bushels. Corn is maturing well. Early potatoes are very scarce and the late

(Continued on page 303).

TO OFFICERS OF FRUIT EXCHANGES.

A representative of the Michigan Director of Markets, the other day, saw eight bushel baskets of plums faced in a most flagrant manner. The baskets were filled about nine tenths full with a fair quality of plums and then topped with larger and handsomer plums of another variety. This took place on the packing platform of a fruit exchange. The plums were loaded into a refrigerator car for shipment to Indianapolis. As the packing was done by the buyer and the fruit was for an inter-state shipment it is likely that the transaction is beyond the reach of any Michigan statute. However, it be-

Farmers' Clubs

Associational Motto:

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

Memory Day

(September 30).

BY MRS. J. SCOTT M'CONNELL.
We stand again, in the tender light
Of the fair Summer's after glow,
Just where the season, in it's flight,
Halts 'twixt the violets and the snow.

Just e're it lays aside its bright
Fair verdure for the winter's sleep
And robes itself in garments white,
We come, a loving tryst to keep.

To deck, again, with fragrant flowers,
The low homes where our loved ones rest
In memory of life's sweetest hours,
To lay love's garland on each breast.

Should there be those who slumber here
From kindred, home and friends away,
With none to drop the flower or tear,
Let such be ours this "Memory Day."

Wrapped in the silence of the years
No care disturbs their peaceful rest
And kindly Nature drops her tears
Impartially above each breast.

Impartially the sunbeams fall
On love-kept grave and sunken mound
Love's tender care is over all
And every spot is sacred ground.

Safe pillowed on Earth's faithful breast
Sleeping away the silent hours,
In sweet oblivion they rest,
Give each the tribute of our flowers.

When from this City of Our Dead,
Made fair, by loving hands, today,
Whose streets give back no echoing tread
As silently we turn away.

This thought shall comfort all our ways
That, while for us, life's storms may beat
It holds for them no froubled days
But perfect rest and slumber sweet.

HOW SHALL WE OBSERVE "MEMORY DAY."

BY J. T. DANIELS.

September 30 having been designated "Memory Day" by Act of the Legislature of Michigan, and devoted to caring for the cemeteries within the state, and beautifying the graves therein with flowers and loving care, it is becoming that this day be observed by all friends of OUR DEAD.

It is suggested that the people meet at their cemeteries at two o'clock p. m. and the exercises be opened with brief remarks by the pastor, or other selected speaker, and followed by the reading of a selected "Memory Day" Poem, after which the "Memory Day" Hymn be sung and the exercises concluded with the placing of flowers on the graves of relatives and friends, not omitting the graves of those whose kindred are dead or far removed.

"Memory Day," thus observed, will awaken a helpful sentiment in the community, and prove a blessing to those who observe the day.

As a people, we are becoming too fully devoted to that which is but material in its nature and effects, and we need the purifying and hallowing influences which will come to us through the observance of "Memory Day."

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.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste. Marie; N. P. Hull, Dimondale; Burr Lincoln, Harbor Beach.

STATE EXECUTIVE COMMITTEE RESOLUTION.

At a fully attended meeting of the executive committee of the Michigan Grange at Lansing on September 6, a strong resolution was adopted condemning the so-called home rule constitutional amendment which is being advocated by the liquor dealers of the state. The resolution was directed particularly against the president of the home rule league, A. D. Edwards, and was as follows:

Whereas, the president of an organization favoring the adoption of the so-called "Home Rule" amendment, intended to destroy the present county local option system by providing a smaller unit, has advertised himself as a "member of the State Grange" with the evident intention of carrying the inference that he represents the sentiment of Michigan State Grange.

And, Whereas, the State Grange in all its annual sessions in recent years has by unanimous vote enthusiastically endorsed the county local option system and opposed the reduction of the unit to the township, village and city.

Therefore Resolved, by the executive committee of the State Grange acting for and with full authority of that body between its annual sessions, that the action of the said person is entirely out of harmony with the sentiment and intent of the State Grange and that until state-wide prohibition of the liquor traffic becomes an actual fact, we are unalterably opposed to any decrease in the unit of territory for local option below the county and call upon every member in our Order and every lover of sobriety, good government and clean manhood to work earnestly and persistently from now until the polls close on the evening of November 7 against this misleading and pernicious measure and we urge every voter to vote "No" on this so-called "Home Rule" amendment which is but another attempt to destroy what we have already gained in the fight against the saloon.

(Signed) State Executive Com.

AMONG THE LIVE GRANGES.

Young Men Have Charge of Program.—One of the most productive meetings which has ever been held by Charlotte Grange was the first September meeting, at which the young men took charge and staged a program that set a pace for the older folks that will keep them humping to maintain. Byron Hoffner was in the chair and conducted the meeting like a veteran, while every other office was filled by one of the boys with credit to himself. The program consisted of a piano solo by Paul Grier and a series of papers and talks on co-operation and stock improvement by several of the boys, which showed a much more intimate knowledge of these subjects than would be found in many of their elders. Those taking part were: Tom Cole, Byron Hoffner, Rollo Whitney, Carl Rochester, Dean, and Gibbs. Mrs. Flatter, who was in Charlotte for a lecture in the Congregational church in the cause of the temperance movement, arrived late in the evening and gave a splendid talk on the coming election and the things involved therein. Mr. and Mrs. F. C. Curtiss and Mr. and Mrs. Wilbur Martin were elected delegates to the county convention, which will be held in connection with the Pomona meeting in Charlotte on October 3. This convention will elect delegates to the state convention to be held in Lansing in December.

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They mean that every Galloway Spreader is built stronger and better than before. The beater bolts are 1-16 in. larger with lock nuts. Beater bar bolts increased in size and strength. Beater teeth longer and stronger than ever which means they now tear the toughest manure finer than ever and spread it easier. Heavier bolts hold the beater bars in the beater head. Rear shaft increased in strength—higher carbon steel used. Additional bolts strengthen (beyond actual necessity) the beater bracket. Larger drive sprockets, which mean lighter draft than ever. The fifth wheel castings are larger and increased in strength—spreader box steeper in turning. Rear conveyor shaft now made of No. 40 carbon steel. All steel tongue. All metal parts thoroughly coated with asphaltum weather-proof paint. Spreader box better finished and painted. Galloway WIDE SPREADING V-BARS on every machine WORTH \$15 on any spreader. COSTS YOU NOTHING EXTRA. INVINCIBLE, IRRESISTIBLE, PATENTED ROLLER FEED—AN EXCLUSIVE GALLOWAY FEATURE, makes it superior to all other feeds on all other machines—the SECRET OF OUR LIGHT DRAFT. The mechanical principle is the same as any spreader. EXCLUSIVE AGAIN! On this spreader in our own factories and sell it direct from factory to farm. Do not confuse the Galloway spreader with lower priced machines made to sell for a price, which are all cheap, worthless imitations. Over 60,000 Galloway Spreaders in use. These and other features make the Galloway Spreader more invincible than ever in actual field work. No big, cumbersome, four-horse team or three-horse team needed to handle a Galloway. Two average horses can spread with the Galloway anywhere. Complete particulars and details of this 1917 model spreader now ready.

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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.

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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.

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KALAMAZOO, MICH.

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

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

PIG Type P. C.—100 pigs of Mar. and Apr. farrow. Bred by Big Type King Teemeyer A. Wonder Jr. and Mow's Big Bone. We pay exp. charges and record free. W. Brewbaker & Sons, Elsie, 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 & Glits all sold. Have 3 extra good spring boars. Sired by Big Defender. 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.

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

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PROFITABLE "MULEFOOT" RESIST-
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HOG FOUNDATION STOCK FROM BEST BLOOD OF BREED
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KALAMAZOO MICHIGAN

HAMPSHIRE SWINE Spring Pigs registered. John W. Snyder, R. 4, St. Johns, Mich.

HAMPSHIRE

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

SHEEP.

SKROPSHIRE

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. S. L. WING, Prop'r. Kinderhook, Mich.

The Ingleside Farm will not make a show of Shropshires at the fairs this fall but has a good supply of registered rams and breeding ewes for sale. If you are in need of any Shropshires, let us know. H. E. POWELL, IONIA, MICH.

For Registered Shropshire Rams, Yearling or Lambs write or call on Armstrong Bros., R. No. 3, Fowlerville, Mich.

Shropshires, Ram Lambs and Yearling Rams, also a few good Ewes to offer. M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

SHROPSHIRE

A few choice Rams. Dan Booher, R. 4, Ewart, Mich.

Shropshire yearlings and ram lambs. One two year old stock ram. All of best wool—mutton type. G. P. A. ANDREWS, Dansville, Michigan.

For Sale: Thirty choice registered young Shropshire ewes. Fifteen extra good ewe lambs, also yearling and lamb rams. Elmer E. Bowers, R. R. No. 2, Manchester, Michigan.

Oxford Down Sheep. Good yearling field Rams and ewes of all ages for sale. M. F. GANSSLEY, Lebron, Michigan.

Oxford Sheep: 20 Rams, 20 Ewes. EARL C. McCARTY, Bad Axe, Michigan.

Reg. Rambouillet Rams For Sale—Cheap. From the flock of the late J. Q. A. Cook. D. D. MORRICE, MORRICE, MICH.

The Great Ohio flock of Merinos and Delaines, good size, oily fleeces, heavy shearers, priced to sell. Write wants. S. H. SANDERS, Ashtabula, Ohio.

FOR SALE Registered American Delaine Sheep both sex. F. H. CONLEY, Maple Rapids, Michigan.

FOR SALE Pure bred Hampshire Ram Lambs. Wm. C. SMITH, Rochester, Mich.

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Compare Ferris Leghorns with ordinary hens and you will understand why so many thousands of poultry keepers have Ferris White Leghorns exclusively.

Keep a record of the eggs they lay this fall and winter compared with your present flock. Next spring you will know that 16 years' careful breeding has produced hens that will average close to 200 eggs a year with ordinary care.

Pens of this 200 egg quality will cost as follows: 1 cockerel, 2 hens or pullets - \$9.00; 1 cockerel, 4 hens or pullets - 13.50; 1 cockerel, 8 hens or pullets - 22.50; 1 cockerel, 12 hens or pullets - 30.00; 2 cockerels, 25 hens or pullets - 60.00; 3 cockerels, 50 hens or pullets - 112.00; 6 cockerels, 100 hens or pullets - 210.00.

These pens are properly mated. The cockerels are early hatched, the hens are laying and the pullets are ready to lay.

All stock is shipped on approval. You can return within three days any birds not satisfactory and money will be refunded.

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Barred Rock Eggs, Cock birds, hens. Four pullets laid 950 eggs in one year. W. C. COFFMAN, BENTON HARBOR, MICH.

Barred Rocks Parks 200 egg strain. Cockerels for sale. Circular Free. Fred Astling, Constantine, Mich.

BREEDING COCKERELS White, Brown, Buff, Black Leghorns. R. I. Reds, Barred Rocks. PULLETS - White, Buff, Black. Prices reasonable. Sunnybrook Poultry Farms, Hillsdale, Michigan.

GET YOUR ORDER IN EARLY FOR Cockerels from Cousins Northern King Strain Barred Rocks. Write David W. Cousins, North Port, Mich.

Buff Leghorns Exclusively. Now is the time to buy pure bred stock at a big reduction in price. Dr. William A. Smith, Petersburg, Michigan

JOHN'S Big Beautiful Barred Rocks are all hatched, developed quick, good layers, each \$3; pair \$5; sold on approval. Circulars, photos. John Northon, Clare, Mich.

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Fowlers' Buff Rocks Prices reduced one on. Utility eggs \$7.50 for 15, \$1.50 for 30, \$2 for 50, \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

Pine Crest, S. C. White Orpingtons. Bargain, 4 yearling hens and cock, \$8, \$12 and \$15, just one half what they will cost next spring. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

300 R. I. RED HENS Rose and Single Comb. Write for Price List. Sell your mongrels and buy pure bred R. I. Reds. INTERLAKES FARM, BOX 39, LAWRENCE, MICH.

Rose and Single comb Reds, young and old, for sale. Correspondence as to your Red needs invited. JENNIE BUELL, Ann Arbor, R. 8, Michigan.

ROSE COMBS. Brown Leghorn Cockerels large in size, bred from prize winners and two best strains in America. One dollar each. Mae Himebaugh, Hillsdale, Mich.

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

S. S. Hamburg Eggs reduced prices, balance of season. Free delivery. R. C. white Leghorn hens \$1.00, Belgian Hare Bucks \$5.00 with Pedigree. RIVERVIEW FARM, Vassar, Mich.

SILVER GOLDEN AND WHITE WYANDOTTES. Eggs from all matings, 150 per 15, \$2.50 per 30 until July 1st. C. W. Browning, R. 2, Portland, Mich.

S. C. Buff Orpington Cockerels for breeding purposes. Prices reasonable. If interested write at once to Mrs. Calvin Fuller, Bancroft, Michigan.

White Wyandotte Cock & Cockerels. Eggs \$1, \$2, \$3, per 15, \$4 per 50, \$7 per 100. DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.

WHITE WYANDOTTES. Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock. A. FRANKLIN SMITH, Ann Arbor, Michigan.

White China Geese & M. Pekin Ducks CLAUDIA BETTS, Hillsdale, Mich.

DOGS

FOX, COON, SKUNK, HOUNDS BROKE TO RUN AND FIELD, and guaranteed Fox, coon & rabbit hound pups, from the best of stock - \$5.00 each. Stamp for photos. H. C. LYTLE, Fredericksburg, Ohio.

PURE BRED SCOTCH COLLIE PUPS, Belgian Hares and R. and S. C. R. I. Reds for sale. Good quality, prices reasonable. O. E. Hawley, Ludington, Mich.

Fox Hounds of all ages, Skunk and Rabbit dogs, 500 Ferrets, send 2c stamp. W. E. LECKY, Holmesville, Ohio.

FERRETS

3000 FERRETS FOR SALE Price list free. C. J. DIMICK, Rochester, Ohio.

2000 Ferrets They hustle rats and rabbits. Price list and booklet mailed free. N. E. KNAPP, Rochester, Ohio.

Poultry Problems

A. H., Antrim county, asks the following questions: (1) What feed do you recommend for young pullets?

Use commercial poultry feed or a mixture consisting of one part oats, two parts wheat and three parts cracked corn. Also one part each of buckwheat or kaffir corn if convenient.

(During the winter months double the quantity of alfalfa meal should be given to add bulk).

There should be a beef scrap hopper handy so they can have as much or as little of it as they want. The grain ration does little beside sustaining life. To make growth, and later to make eggs the ash and meat scrap are indispensable if the flock is expected to produce winter eggs in good numbers.

(2) How often should they be fed?

While on open range the growing chicks should have grain where they can get their fill at any time. When this is done they eat as often as they are hungry. As long as they have free run they will not get too much. When confined during the winter they may be fed from feeders which make them work for what they get, or the grain may be thrown to them in litter, all they will eat at night and about half that quantity in the morning.

(3) What would be your suggestion for a chicken house?

The more money put into the building the greater the interest on the investment and the harder the hens will have to work to show a real profit. Make the house as cheap as possible and have it comfortable for the hens and convenient for yourself.

(4) Would you advise double walls with sawdust between? It is very cold here for a time during the winter.

The advantage of double walls, if any, would be so slight as to not be worth the extra expense. Cold does

not hurt poultry if the atmosphere of the house is pure. Be sure of sufficient ventilation and no drafts. Hens endure long cold spells better than abrupt changes in temperature.

(5) Would you use a board floor or the natural ground?

Neither. Concrete is more sanitary, will last longer, costs about one-sixth as much as the cheapest board floor and is as easily laid. A thick coat of concrete is not needed for a poultry house floor. One inch is sufficient if the ground has been carefully leveled and packed.

C. N. WHITTAKER.

THE MALE BIRDS.

Much depends on the male birds and they may be purchased now for less money than late in the season after they have been placed in winter quarters. We like to get our roosters early in the fall so as to condition them before the breeding season is on.

With one hundred Leghorn hens we keep six males; and seven males we find are about the right number for one hundred hens of the larger breeds. Some claim to have good success with a less number of males and say there is no use in keeping so many roosters fighting and eating food.

In selecting males no matter what variety, they should be well matured, have prominent well developed comb and wattles. Bright red color in comb and wattles, and clear eyes denote a high degree of health and vigor.

A good breeder is better the second year than the first and his chicks are stronger. And often these old birds may be bought cheaper than cockerels.

Some say, don't buy so many roosters, get one extra good one and pen him with 12 or 15 of your best hens. The trouble with this plan is, the average farmer has too many other irons in the fire to give penned birds the attention they should have to insure good hatches.

Don't get the notion that it won't do any harm to keep roosters of your own raising. Inbreeding decreases the size, impairs vitality, and produces deformities in the farm poultry flock.

Indiana. FRANCES WOOD.

BREEDERS' DIRECTORY.

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CATTLE.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. TROJAN - ERICAS and BLACKBIRDS only. Also breeders of Percheron, Hackney and Saddle Horses.

ABERDEEN ANGUS

We have a choice lot of Bull Calves, that are 6 to 12 months old and another crop coming. I will be pleased to have you visit our farm, where we have a stock show every day; we will also have a show herd at the Michigan State Fair. U. L. CLARK, Hunters Creek, Mich. SIDNEY SMITH, Manager.

AYRSHIRES - One of the foremost dairy breeds. The best most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

VILLAGE FARMS, Incorporated Grass Lake, Michigan, GUERNSEY CATTLE BERKSHIRE HOGS

Reg. Guernsey Bulls, serviceable age, great grand reasons of Gov. Chene, also grade Guernsey and Jersey heifers 6 wks old \$20 each. Avondale Stock Farm, Wayne, Mich.

Guernsey Bulls of service age and calves from choice. Adv. reg. breeding. T. V. HICKS, Route 1, Battle Creek, Mich.

Guernsey (May Rose) Bull for sale, born Sept. 5, 1913. Splendid animal in every respect, Dam 520 lbs. fat class F. J. K. Blatchford, Auditorium Tower, Chicago, Ill.

MIL0 D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM GUERNSEYS

Average yearly production 422.3 lbs. of fat, three fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made.

CAMPBELL & ANGEVINE, Coldwater, Michigan.

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

GUERNSEYS: 10 choice yearling and two year old Guernsey Heifers - bred. \$250 to \$350 each. J. M. Williams, North Adams, Michigan.

Do You Want A Bull? Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/2 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull.

EDWIN S. LEWIS, Marshall, Mich.

HOLSTEIN BULLS FOR SALE

3 of them 1 year old in Nov. By 31 lb. sire. Dams above 21 lbs. as heifers. Price \$100. Younger bulls by son of Johanna McKinley Segis \$50. up.

30 lb. bull for sale, 2 years old, by a son of King of the Pontiacs. Dam sold for \$1000 in Detroit sale. Ferd. J. Lange, Sebewaing, Mich.

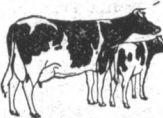
I Have Holstein Bulls, Bull Calves and Cows that I offer for sale. I can show breeding records, in dividuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

"TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality, of serviceable age, at moderate prices.

Guernsey Females of Quality: Bred heifers and cows in Sept. A. B. breeding. E. A. Wigent, Watervliet, Mich.

FOR SALE Two Holstein Bull Calves 6 months old from 20 lb. dams. FREEMAN J. FISBECK, Howell, Michigan.



Purebred Registered HOLSTEIN CATTLE

Holsteins in Canada have far surpassed all other dairy breeds in numbers, milk and butter records, and in popular esteem. The membership of the Canadian Holstein Association has more than doubled in the past four years, and Holsteins have led all breeds in the total amount of milk and butter produced in a year and also in net profit.

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BULLS ALL SOLD

Holstein-Friesian Cattle A. R. O. herd, tuberculin tested annually. PEACELAND STOCK FARM, Three Rivers, Mich. Chas. Peters, Herdsman, C. L. Brody, Owner, Port Huron

Veterinary.

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

Recurrent Ophthalmia—Moon Blindness.—I have a mare about eight years old, going blind in one eye; our local Vet. calls it a case of moon blindness. The pupil of the eye seems to be covering with a blue scum and I would like to know if by treatment I can prevent the other eye becoming diseased? E. T. B., Grand Rapids, Mich.—Recurrent ophthalmia usually terminates in producing loss of vision of one or both eyes. Darken her stable window with a green shade, keep your barn clean and free from foul gas, keep her bowels open, avoid overheating her and when her eyes get sore—give her ½ dr. of potassium iodide and 2 drs. of Fowler's solution at a dose in soft feed twice a day. Dissolve a teaspoonful of boric acid and a teaspoonful of salt in a pint of water and apply to eyes twice a day.

Incipient Heaves—Enlarged Glands. I have a seven-year-old mare that shows symptoms of heaves. When eating food she makes a noise and breathes much like a man with the asthma. The glands of throat are enlarged. I also have a two-year-old colt whose wind is not affected, but the glands of his throat are swollen. R. A. R., Marion City, Mich.—Feed your mare no clover or musty, badly cured fodder of any kind. Grain and grass is the best summer food and grain and roots the best winter food. Give ½ dr. fluid extract lobelia, 3 drs. of Fowler's solution and ½ dr. fluid extract nuxvomica at a dose in damp feed three times a day. Your stable should be kept clean and well supplied with fresh air; besides, an animal of this kind should be exercised daily. Apply one part iodine and 12 parts of fresh lard to glands of mare and colt three times a week.

Foot Lameness.—I have a five-year-old pacing mare that is lame in fore feet, caused perhaps from founder. I. G. H., North Street, Mich.—Clip hair off coronets and apply one part red iodide mercury, one part powdered cantharides and eight parts lard every two weeks. Stand her in moist clay a few hours a day. An animal of this kind, in this condition travels best with rolling motion shoes in front.

Eczema.—Have a five-year-old mare troubled with eczema. C. E. K., Belleville, Mich.—Clip her and apply one part coal tar disinfectant and 30 parts water and occasionally apply one part oxide of zinc and five parts vaseline. Give her 2 drs. of Fowler's solution at a dose in feed or water three times a day for not less than 30 days.

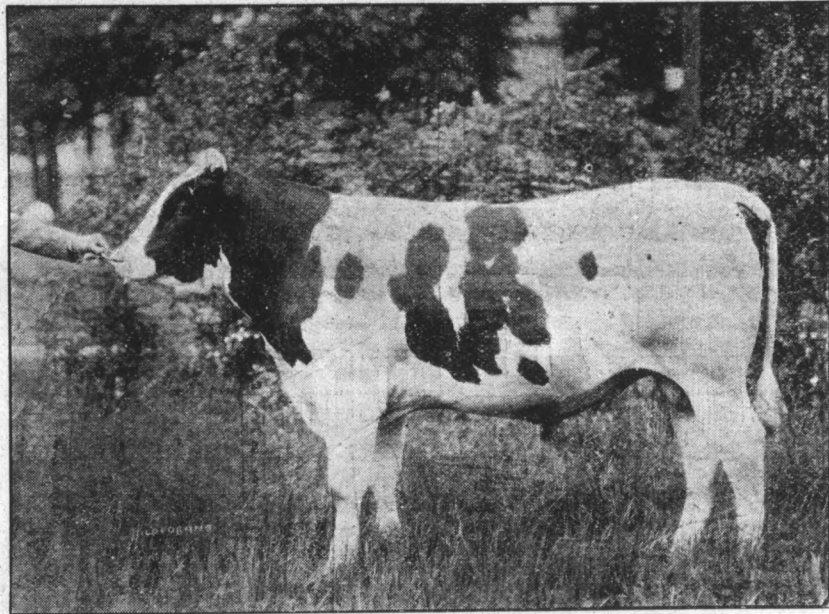
Thickened Glands—Cow Gives Bloody Milk.—The throat of my mare appears to swell more or less every night I turn her out to grass, but she does not appear to be sick; I believe she is in foal. R. A. U., Croswell, Mich.—Mix together equal parts powdered sulphate iron, salt, ginger, gentian and bicarbonate of soda—give her a tablespoonful at a dose in feed twice a day.

Sprained Fetlock.—I recently received a sample copy of the Michigan Farmer and notice you answer veterinary questions through your columns. I have a mare that has been hitched with a long chain while she grazed, and she became entangled in it and either sprained or bruised ankle joint and I would like to know what to do for her. Our local Vet. examined her hurriedly, thought she had lymphangitis. H. L. H., Mayville, Mich.—Give your mare 1 dr. potassium iodide at a dose in feed or water twice a day, and apply the following lotion three times a day: Dissolve ¼ lb. acetate of lead, 3 ozs. of sulphate of zinc, 2 ozs. of powdered alum in a gallon of water. She should have walking exercise two or three times a day.

Itchy Neck.—I bought a three-year-old colt that had been worked some, but he appears to suffer from an itchy condition of the shoulders and neck. I gave him some sulphur and also gave medicine which our local Vet. prescribed, but it failed to do him any good. H. E., Bronson, Mich.—Give 2 drs. of Donovan's solution at a dose in feed or water three times a day for 30 days. Also apply one part bichloride of mercury and 500 parts water to the itchy parts three times a day.

Rheumatism.—I am a new subscriber to the Michigan Farmer and would like to have you tell me what will help a brood sow which seems to be rheumatic in hind quarters. She is not pregnant. S. J., Bronson, Mich.—Give your sow 15 grs. of sodium salicylate at a dose three times a day. Instead of feeding her so much corn, feed some oats, oil meal, tankage and roots or grass.

Son of King of the Pontiacs and Hildale Segis one of the Best Daughters of King Segis



King of the Pontiac Segis, Born May 16, 1915 at the Head of Our Herd

A Few Specials for October and November, at Prices to Fit Most Any Pocket-book

1. Maplecrest DeKol Ogden No. 94162—Born April 13, 1912, sired by Friend Hengerveld DeKol Butterboy 29303; Dam Maplecrest Pontiac Ogden DeKol, Daughter of Pontiac Aggie Korndyke.
2. Nye Pontiac Burke—Born Nov. 28, 1911, Sire Pontiac Burke; Dam Queen Oakland Lady (a 29 lb. cow).
3. Four Bull Calves—well bred and well marked.
4. Three Hampshire Gilts (bred).
5. Five Rambouillet Rams from the well known Thomas Wyckoff flock.
6. About seventy-five S. C. White Leghorn Cockerels.

Positively Guaranteed as Represented.

FLANDERS FARMS, Orchard Lake, Michigan.

A Quality Sale of Registered Holstein Cattle

AT THE
**West Michigan State Fair Grounds
In Grand Rapids, Michigan, on
Monday, October 16th., 1916**
The Annual October Consignment Sale of the
West Michigan Holstein Breeders.

70 Head of High Class Registered Cattle from the Breeders' own herds, chosen to please the Purchaser who desires to buy healthy cattle of good breeding and quality. Everything over six months old carefully Tuberculin tested by competent graduate Veterinarians of acknowledged reliability. A glance at the Pedigrees of the 30 lb. reference Sires in our Sale Catalog will convince the Buyer that West Michigan Breeders have as well bred Sires as any Section in the United States. The list is too long to mention individually. Choice females will be offered which are sired by or bred to these High Class Bulls. A few choice young bulls will be in the Sale. If interested write for a Sale Catalog.

W. R. HARPER, Sale Manager. Middleville, Michigan.

Duroc Jersey Herd Boars

Special Offering of High Class Fall Boar 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.

CHOICE HOLSTEIN BULLS—all from A. R. O. dams Entire herd on Semi of, test for yearly work. Jr. 2-yr. old just finished year's record of over 15,000 lbs. milk, over 1000 lbs. butter record in mature class. Cherry Creek Stock Farm, M. E. Parmelle, Prop., Hilliards, Mich.

Reg. Holstein Bull Calf. 2 nearest dams average 90 lb milk per day Pontiac Korndyke and Hengerveld DeKol breeding. Prices right. John A. Rinke, Warren, Mich

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$20.00 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis

MICHIGAN HOLSTEINS

4 to 12 Mo. World record sire. High testing dams—from \$99 up to \$299. Let us send you one on trial. You should not buy until you get our book.

**Long Beach Farm,
AUGUSTA, (Kalamazoo Co.) MICH.**

ONLY \$25 DELIVERED: Handsome Holstein bull calf, 7-8 white, 15-16 pure bred. Sire, 25 lb butter bull. Dam extra good cow, 7-8 pure. **ROUGEMONT FARMS, Detroit.**

Registered Holsteins. Young bull ready for service. 30 lb. breeding. Satisfaction guaranteed. W. B. Jones and J. F. Lutz, Cohoctah, Mich.

EXTRA GOOD Holstein Bulls For Sale

I have some from A. R. O. dams with records of from 16 to 22 lbs. with the best milk producing blood in them that can be had. These are from 4 to 7 months old and I will make a cheap price to move them. Also have a few females for sale. Let me know what you want.

**Bigelow's Holstein Farms,
BREEDSVILLE, MICHIGAN**

DEG. HOLSTEINS: Herd headed by Albina Bonte Butter Boy No. 93124. Dam's record at 6 yrs. butter 28.58 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 302 lbs. milk 1882 lbs. W. B. READER, Howell, Mich

FOR SALE—My herd of 12 selected Grade Holstein Cows, Young, soon to freshen. Reasonable price. J. E. GAMBLE, Hart, Michigan.

6 Year registered Holstein cow and her 2 months old heifer calf eligible to registry, both well marked. Price \$175. S. A. FOSTER, OKEMOS, MICH.

FORTY head grade Holstein cattle ranging from six months to five years. C. F. ROGERS, 34 Goldsmith Ave., Phone Cedar 1351, Detroit, Mich.

\$400 buys 3 registered H. F. heifers 2 yrs. old bred to a bull with 8 sisters from 30 to 35 lbs. of butter in seven days. \$50 to \$75 buys choice of 8 H. F. bulls ready for service. A. R. O. backing. Address **NETHERWAY BROS., CARLAND, MICH.**

The Howell Consignment Sales Co. of Livingston County

Will hold its 3rd Annual Sale of 100 head of Registered Holsteins at the Sale Pavilion Howell, Mich., on Oct. 24th. Catalog Oct. 10th.

JAY B. TOOLEY, Secy.

Bull Calves

From A. R. O. Dams, Sired by "Maplecrest Korndyke Hengerveld," whose Dam, "Maplecrest Pontiac Flora Hartog," is one of the four 1200 pound daughters of "Pontiac Aggie Korndyke."
Write us about these Calves, and our,

Berkshires
And we will quote prices that will move them.
Swigartdale Farm, Petersburg, Mich.

Registered Holstein yearling heifer. Dam, a 25.80 lb. jr. four-year-old granddaughter of Pontiac Butter Boy. Sire, a grandson of Hengerveld DeKol out of 25.37 lb. dam. Nice individual, best of breeding. \$150 delivered, safe arrival guaranteed. Write for pedigree. Hobart W. Fay, Mason, Michigan.

HEREFORDS 12 Bull Calves
10 Heifer Calves
ALLEN BROS., PAW PAW, MICH.

Registered Jersey Cattle For Sale

La Carbetts Laddie No. 136845 dropped June 11, 1914, a fine show bull and surestocker. Sire (a double grand son of Golden Fern's Lad and grand son of Eminent 2nd P sire of over 70 tested daughters) has R. of M. backing on both sides. Dam a St. Lambert cow in R. of M. with 505 lb. butter. First check for \$100 takes him. 1 bull calf dropped Oct. 6, 1915, dam a 40 lb. 6 yr. cow. Siro Fair's Golden Eminent 11081 whose dam has records as follows: 650 lb. butter as 7 yr. old 793 lb. 14 oz. as 8 yr. old. 1 R. of M. cow and some untested heifers. Price 4 right. J. R. Worthington, R. 7, Lansing, Mich.

Lillie Farmstead Jersey Cattle. Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon O. Lillie, Coopersville, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Assoc. records, also on semi-official test. C. B. Wehner, R. 6, Allegan, Mich

THE WILDWOOD JERSEY FARM

offers for sale choice young Bulls by Majesty's Wonder and R. of M. cows, or cows on R. of M. tests. Will also offer a few cows for sale this fall. Write for pedigree and full particulars. Satisfaction guaranteed. **ALVIN BALDEN, CAPAC, MICH.**

Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested cows, heifers, bulls, and bull calves backed by several generations of R. of M. breeding. **IRVIN FOX, Allegan, Michigan;**

Jerseys For Sale Bull calves ready for service and cows and heifers soon to freshen. Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.

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.**

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. & I. R'y. Address G. R. Schroder Mgr. **BIDWELL STOCK FARM** Box B. 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.

Shorthorn 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. Cent. Mich. Shorthorn Breeders' Assn. McBride, Mich

Milking Shorthorns, roan 3 year old, Bates bred herd old bull \$250. Young bulls and heifers for sale. **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 15 mos. old. John Schmidt, Reed City, R. No. 5., Michigan.

FOR SALE: Springwell Pietertje Wayne, bull calf. 1 of high breeding for \$35 with papers. Write for description. W. C. Hendee & Son, Pinckney, Mich

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, R. 2, Bloomington, Mich.

The Very Finest Berkshire Pigs Cheap C. S. BARTLETT, Propr. Pontiac, Michigan

Berkshires. Of various ages, either sex, open or bred, prolific strains, Registered, at moderate price. Elmhurst Stock Farm, Almont, Michigan.

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 Bearly in September. Boars ready for service. Also open gilts. Chase Stock Farm, R. 1, Marlette, Mich.

ROYALTON Bred Berkshires. Extraordinary offer. R. Bred sows, boars ready for service and pigs both sexes, selling out, all registered stock with papers. D. F. VALENTINE, Supt., Temperance, Mich.

REGISTERED BERKSHIRES of both sex sold by the approval. B. B. REAVEY, AKRON, MICHIGAN.

DUROC JERSEYS

A choice lot of spring pigs, both sex, pairs and trios, not akin. Prices reasonable. Send for pedigree. **THE JENNING'S FARMS, R. F. D. 1, Bailey, Mich.**

J. W. KEENEY, Erie, Mich. Males, good ones for Dec. Swine. D. M. & T. local from Monroe or Toledo. Keeney Stock.

DUROC Jersey Special. Pigs 8 wks. old \$12 each. Trio for \$35, no Reg. and Del. any more in state for next 10 days. J. Robert Hicks, St. Johns, Michigan.

Breeders' Directory—Continued on page 303

Finance and Investments

BY J. R. MILLIGAN.

Side Lights on the Investments of the Late J. P. Morgan.

IT is safe to assume that the late J. P. Morgan, during the last decade of his life, devoted some considerable thought to the questions of how to proportion his investment securities, or "put his house in order," before his death. Possibly the large part of his securities had been arranged, with this in view for many years. It is very interesting and instructive to look over some of the figures, at least.

He may have, of course, distributed many securities among his children long before his death, as well as incorporated some of his realty holdings. However, these are the available figures:

His realty holdings totaled only \$2,000,000 of his \$78,000,000 estate—less than four per cent.

Outside of his purely banking investments—Trust Company holdings, etc., his stocks and bonds amounted to one-quarter of the estate (about \$19,000,000), of which a large proportion was stocks and only 10 per cent, or about \$2,000,000, were active bonds, (\$1,000,000 New York Central 4s). Though this is a very small proportion of a \$78,000,000 estate, it provides a sufficient block of securities to pledge hastily for a special call for cash in Wall street.

Among the total of \$4,500,000 bonds, were many inactive industrial propositions, that should be classified with stocks in a certain sense. Undoubtedly, they were in most cases underwriting participations, for which no public market or demand had ever been created.

From the above, the writer assumes that either J. P. Morgan thought that period (1912) was no time to be "long of bonds" in great quantities (in the general meaning of Wall street), or he did not favor them at all for a millionaire, except as a nest egg of the "quick collateral" type.

His largest investment of railroad stocks is not hard to guess—New Haven, nearly a million—Southern R. R. comes second, with only \$200,000, and New York Central third, with only \$135,000. His Argentine R. R. investment of half a million hardly concerns our comparisons. Without them, his railroad stocks of \$1,500,000 contrast amazingly with industrial stocks of \$4,500,000, and public utilities of \$1,750,000 (of the latter \$700,000 was in Niagara Falls Power alone). His apparent belief in power companies must have been strong, to compare so nearly equal to railroad stock investment. He may have desired to liquidate his New Haven stock, but for many reasons (other than related to investments) preferred not to force the market. He may have believed the industrial propositions had more potential future than the rails; or possibly he disliked the political dilemma of the railroads such as they are facing again at this time.

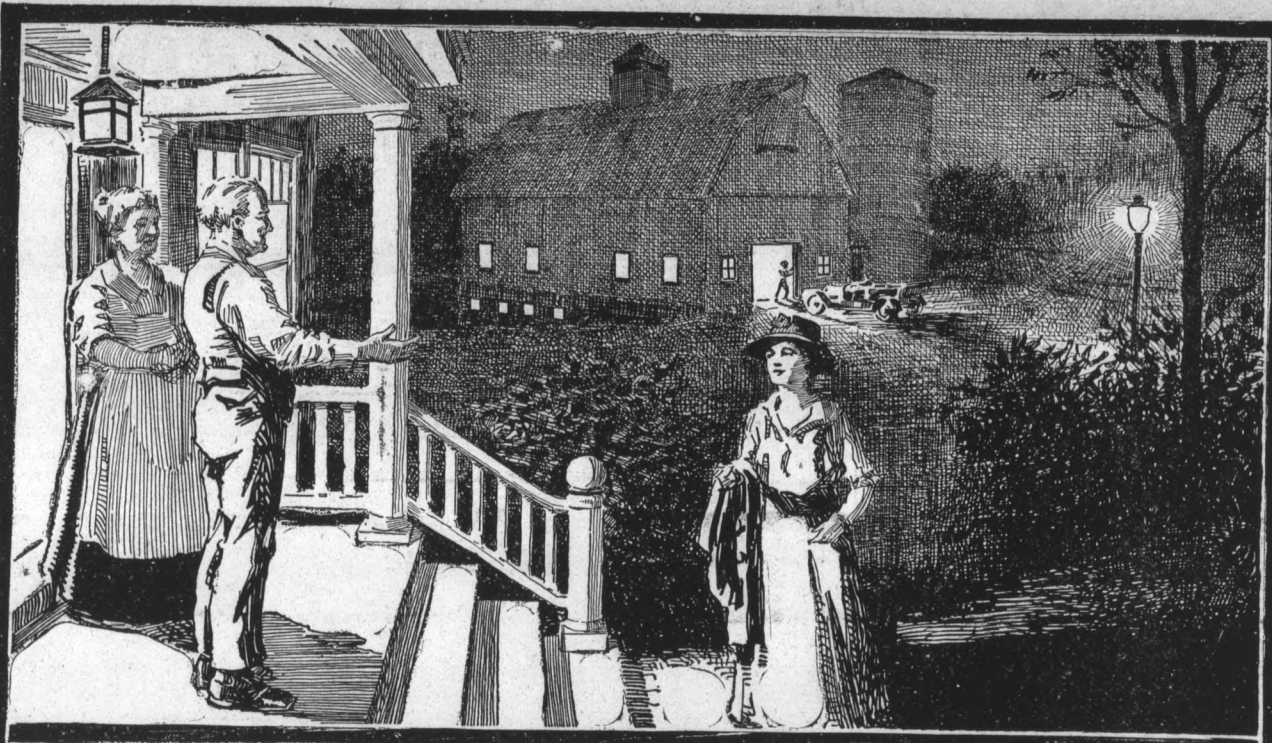
Incidentally, the valuation figures used, were of some years ago, when J. P. Morgan died, and New Haven is now worth probably only half what it was then.

It is more than likely that during his active life, many of his investments changed frequently, even in normal times. Bankers have a right to buy and sell whenever it is to their supposed advantage. That helps to make a market in both good and bad times.

Comparing this estate with another noted capitalist's, Harriman, the chief difference is that Morgan, essentially a banker, died with the largest division (45 per cent) of his estate in bank stocks and banking business, whereas Harriman, a railroad man, had a third, the largest division in railroad stocks. It is, of course, natural that the greatest confidence should be placed in the special field of enterprise each man was identified with.

The following arbitrary classification is of interest: About

\$30,000,000 (38 per cent) banking business, firm J. P. Morgan & Co., etc. \$6,200,000 (8 per cent) bank stocks, trust companies, etc.; 3,000,000 (4 per cent) real estate; \$2,300,000 (3 per cent) active railroad bonds—"quick collateral;" \$2,300,000 (3 per cent) active railroad stocks—"quick collateral;" \$2,300,000 (3 per cent) public utilities stocks and bonds; \$7,800,000 (10 per cent) general industrials (and miscellaneous) stocks and bonds (difficult to classify industrial bonds from industrial stocks); (31 per cent) other property (not related to our comparison). Total, 100 per cent.



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You modern business farmer—with your up-to-date machinery, labor saving equipment and improved methods of farming—what about your home?

Have the improvements in your home kept up with the improvements you have purchased to save *your* labor on the outside?

Or, in your efforts to succeed have you been too busy to think of and provide the modern comforts and conveniences for your wife and children?

Chief among the modern improvements for the farm home is good light.

Times have changed. The dirty, dangerous oil lamps and lanterns have long ago gone out of fashion—where progressive farmers are concerned.

Pilot-Carbide-Outdoor Lighting and Cooking Plants

have totally changed the old-fashioned methods of house and barn lighting and cooking in the country home.

Hundreds of thousands of farmers—men like yourself—in all parts of the country—have already equipped their homes with this permanent improvement.

Some are friends and neighbors of yours. Their families are now enjoying this comfort, safety and convenience—without which your home will never be complete.

They have chosen the PILOT not only because it gives them all the bright, safe, clean light they can use—but cooking fuel as well.

Because they can light their houses and barns without matches. Because the PILOT entirely eliminates all the dirty, disagree-

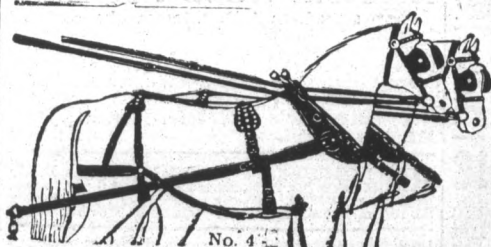
able daily labor of caring for lamps. Because they have an abundance of brilliant light always on tap whenever they need it.

Because the PILOT takes up no room in the house, but stands out of doors—on top of the ground—anywhere. It is simple, automatic, dependable. Needs but a few minutes' attention once a month or so.

Write for our illustrated catalogs and descriptive booklets giving all the facts. Find out *today* about the PILOT.

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