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The Detroit Market Milk Finding

At the joint request of the officers of the Michigan Milk Producers' Association and representatives of the distributors of milk in the Detroit area, the commission recently appointed by Governor Sleeper to investigate the dairy industry of the state, together with one business man appointed by the Detroit Board of Commerce, one woman, selected by the Detroit Federation of Women's Clubs, and one person delegated by the Detroit Federation of Labor, were asked to render judgment as to prices which should be paid for milk by distributors and consumers in the Detroit area. This commission, the personnel of which is given below, have reported as follows:

Because of the importance of milk as a human food, particularly in its relation to the proper nutrition of children, this commission has approached the task to which it has been called with particular consideration to the problem of maintaining a stable supply of wholesome market milk in the great center of population represented by the Detroit area. The rapid growth of modern cities, of which the Detroit area is typical, has made this a vital and serious problem. The continued advance in the price of milk, in common with other necessities, has caused consumers whose interests are entitled to our first consideration, no small con-

cern. Yet so far as this advance may be necessary and unavoidable, we believe it to be a secondary consideration to an ample and stable milk supply, because of the absolute and universal need of this food in every family.

Instead of a normal increase of one in ten during the past two years, Michigan has suffered a decrease in dairy cows of nearly fifteen per cent, because of labor and economic conditions which have made dairying relatively unprofitable at prevailing prices for dairy products. This tendency has been further aggravated by war conditions and an unfavorable season, until the market milk supply is seriously threatened.

To insure a stable and dependable milk supply cognizance must be taken of the commercial conditions surrounding its production and distribution. These conditions, in common with those surrounding every other industry, are abnormal at the present time. The cost of feeds, which represents approximately fifty per cent of the cost of producing milk, has increased in a similar manner as has the cost of human foods. The farmer, to an even greater extent than the manufacturer, has experienced grave difficulty in securing adequate and dependable labor. The country wage has kept pace with the city wage, where men could be obtained at all, and the cost of farm and

dairy equipment has increased to a corresponding degree.

The important and often unappreciated service performed by the distributors of the city milk supply has by these same conditions been rendered more difficult and expensive.

In the performance of its task this commission has sought the most dependable data relating to the cost of producing and distributing market milk and has held public hearings in the city of Detroit to receive the testimony of interested producers, distributors and consumers. This testimony included, on the part of the producers, a report of investigations in the cost of milk production in a typical market milk area contributing to the Detroit supply, submitted by the field investigator and milk accountant of the Michigan Experiment Station. This report showed that on twenty-five farms in a typical area the average cost of milk production in October was \$3.36 per ewt., or seven cents a quart. Notwithstanding this cost the dairymen continued to deliver their milk for shipment to Detroit at \$2.60 per cwt. or 5.1 cents per quart, on a previously made contract. For the month of November the cost of production was \$3.18 per cwt., or 6.6 cents per quart and the milk was sold on the same contract at \$2.60 per cwt. That

the December cost will not be below that for November was clearly indicated by this report. On the part of the distributors detailed cost sheets prepared by certified public accountants were submitted and the commission was offered access to the books of distributors in the city. The data thus obtained covered separately and in detail the cost of every operation in the production, transportation, handling and distributing of the city's milk supply. Quoting from a representative cost sheet of a large distributor for the month of October, prepared by a local trust company these distribution costs, grouped under three general heads were as follows:

	Per qt. cts.
Hauling and station expense, transportation and miscellaneous0119
Receiving, pasteurization, bottling, bottles and caps, power and refrigeration and shrinkage0151
Selling and delivery, cold room and administrative expense....	.0354
Total0624

In submitting verified costs, both producers and distributors expressed a willingness to follow the plan laid down by, and cooperate with the expressed wishes of, the United States Food Administration in having the re-

(Continued on page 552).



The Commission which Investigated the Market Milk Problem in the Detroit Area and Rendered the Accompanying Report.

Mrs. Robert M. Grindley, Club Woman; J. Walter Drake, Chairman; Ex-Gov. Fred M. Warner; Frank X. Martel, Labor Representative; Fred L. Woodworth, State Dairy and Food Commissioner; I. Roy Waterbury, Member State Board of Agriculture and Editor of Michigan Farmer; Jas. N. McBride, State Director of Markets; A. C. Anderson, Professor of Dairy Husbandry, Michigan Agricultural College.

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DETROIT, DECEMBER 8, 1917



CURRENT COMMENT.

The Market Milk Problem. The problem of insuring a stable and dependable supply of market milk and providing for its distribution to consumers at a reasonable price is one which is engaging the attention of every large city in the country at the present time, as well as that of the United States Food Administration. The exceedingly high cost of milk production on the farms of the state and country under present war conditions, with the added handicap of an unfavorable crop season in many sections, together with the serious and increasingly difficult labor situation has not only discouraged the growth of the dairy industry, but has caused a large shrinkage in our dairy cow population.

During the past year while production costs have been constantly mounting, the market milk supply in most sections was protected by annual contracts with producers made on a basis of conditions which existed at this time last year. In the meantime, the great need of condensed milk and other similar products not only by the armies engaged in the war, but as well by the civilian population of belligerent countries forced the price of milk for condensing purposes up to a point which just about covered the cost of production. Thus the big cities of the country have faced the alternative of an advance in milk prices, or a diversion of their supply to other uses. Of course, under these conditions, prices have been generally advanced for market milk in the large centers of population, since an adequate supply of this food is indispensable.

Unfortunately, in some cities the consumers are not properly informed regarding the food value of milk. Too generally milk has been looked upon as a beverage rather than as a food. Notwithstanding the indisputable fact that at the advanced price at which milk is of necessity being sold in large cities, it is still one of the very cheapest available foods for adults and is, of course, indispensable for growing children. No other food stuffs can be purchased in any city which compare with milk in economy, save alone cereal grains or their products, and milk is a natural

complement of the products of cereal grains to make a wholesome and well balanced ration for human consumption.

Reports from the children's bureau of the United States Department of Labor show that in New York and New England cities there is a marked tendency on the part of families in which there are children to reduce the amount of milk consumed since the recent advance in price. Of 2,200 families investigated in New York, 120 families had stopped taking milk entirely, although in twenty-five of these families there are babies under one year old. All of the 2,200 families investigated had young children and nearly half of these families were taking from one-quarter to one-half less milk than before the price advanced. Yet even before this reduction in consumption, these families were using but little more than half the amount of milk which experts on children's diet say they should have had for the proper nourishment of their children. This report is cited to bring home to Michigan milk producers the imperative need for a publicity campaign on the food value of milk which will make the people of our large centers of population such intelligent and discriminating buyers of food stuffs that even at the advanced price at which it must of necessity be sold, milk will be given the place which it merits in the human dietary.

In the findings of the Detroit milk commission which are published elsewhere in this issue, a recommendation was made that one-half cent per hundred pounds on all milk sold in the Detroit area be deducted by contract from the patron's check and paid into the treasury of the Michigan Milk Producers' Association for such publicity work. This recommendation is in line with the action taken by the delegate meeting of milk producers in the Detroit area recently held in the city of Detroit. This small sum should be cheerfully contributed by every dairyman who contributes to the Detroit market milk supply, since it is missionary work of first importance, although the producers will undoubtedly profit by an educational campaign of this kind.

Another recommendation made by the Detroit Milk Commission which should go far toward counteracting a decrease in the consumption of milk because of the necessary advance in price is that providing for the establishment of milk stations, at which milk shall be sold by distributors at three cents less per quart than where delivered at the patron's home. This experiment, if it can be successfully carried out under existing conditions, will help solve the problem for the city workers on whom present living costs fall most heavily.

Altogether the method of solving the market milk problem adopted by the producers and distributors in the Detroit area promises a more satisfactory solution than could any plan in which such cooperation is not a factor, since by continuing its supervision under the joint authority granted, the commission will be able to do more exact justice to the producers, distributors and consumers than would be possible by any other plan of settlement. As indicated by the report, producers and distributors have been given a price for their product and service which represents the cost of production with very little profit added, in order that the selling price of milk to consumers might be kept at a reasonable figure as compared with the cost of other food products.

Should conditions change at any time during the year, as is almost certain to be the case, the commission will have authority to make such readjustments as these changed conditions may warrant. This plan brings a new principle to apply in the conduct of big

business of vital interest to every person affected.

Our Boys and Girls. We do not speak far from the truth in stating that a full generation of American farmers and farmers' wives have been transplanted from the farms of the country into the great cities. Following a period of over-production of agricultural crops this exodus did not disturb the balance of our national life to a point of danger, but if at the present time such a transplanting of rural folks into our industrial centers took place, it would spell a great calamity to America. It is impossible to state just how much of the generation that has been lost to agriculture may have been kept on the farms if proper attention had been given to interesting the boys and girls of a quarter century ago in the things of the farm. No doubt agricultural courses in our public schools, agricultural reading matter suited to the boys and girls on the reading table of the farm homes and a general appreciation of the farm as a place where life can be lived and enjoyed in its fullest would have gone far in keeping many a young man or woman from choosing in favor of city life.

But America cannot spare another generation from her farms. The robbing of the country to supply the cities with brains and brawn must cease. Every medium that will aid in making farming and farm life attractive should be used by both rural and city leaders since the future of the cities is quite as dependent upon the proper management of farms and the character of rural social life as is the country itself. To the end that this outdoor life may be made attractive to our future farmers through leading them to take inventory of the multitude of opportunities open to the country boy and girl, the editorial staff of this journal has completed plans for a regular section to be devoted exclusively to the interest of our junior readers. We believe that every adult reader of these columns should, out of patriotism and as a matter of interest in the coming generation of farm folks, do his part toward interesting the boys and girls in this innovation in agricultural journalism. Further announcement will be made next week when the first number of the new section will also appear.

Help the Boys and the Boards.

The new plan announced by the War Department for the making of an inventory and classification of all registrants who have not already been selected for service is a large task to accomplish within the allotted sixty days. In announcing the plan, the President of the United States has appealed to all classes of citizens, and particularly to those of the legal profession to aid the registrants in every manner possible in answering the questionnaire prepared for them.

There is much that many citizens can do to aid both the boys and the boards by helping them in the proper answering of these questions and in furnishing the boards any information which may be important in any individual case. Governor Sleeper has addressed the citizens of Michigan on this subject as follows:

I, therefore, as Governor of Michigan, do hereby appeal to all citizens of Michigan to answer the call of the President of the United States, and to assist Local and District Boards by proffering such service and such material conveniences as they can offer, and by appearing before the boards to give such information as will be useful in classifying registrants. I especially urge school teachers and others of clerical ability to at once report to local boards to assist in the work of preparing questionnaires.

Men of the legal profession should offer themselves as associate members of the Legal Advisory Boards to be provided in each community for the purpose of advising registrants of their rights and obligations and of assisting them in the preparation of their an-

swers to the questions which all men subject to draft are required to submit. Doctors should identify themselves with the Medical Advisory Boards which are to be constituted in the various districts throughout the state for the purpose of making a systematic physical examination of the registrants.

It should be the pride of the citizens of Michigan that the execution of the Selective Service Act in Michigan be carried on with the least possible administrative expense. Every dollar saved at home is one more dollar for the firing line.

I trust that this appeal will meet with an enthusiastic response on the part of the citizens of Michigan, and that all will avail themselves of the privilege of participating in the accomplishment of this great patriotic undertaking.

May every member of the Michigan Farmer family do all in his power to aid both the boys and the boards as above requested.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Since the advance of General Byng's forces on the Cambria front a fortnight ago, the Germans have made several attempts to gain back the lost territory. The latest reports are to the effect that these attempts have been in vain. Germans in massed formations were ordered against the British trenches only to be mowed down by machine gun fire and bursting shells. The losses are said to be greater than in any other fighting since the war began. On Saturday night, however, the British abandoned Masnières, which formed a sharp salient that was difficult to hold. This move straightened the British front which has since been successful in stopping the German attacks. It is expected that further efforts will be made to penetrate this line. Artillery activity constitutes the greater portion of the fighting along the remainder of the western front.—The Italians appear to be maintaining their lines against the foe. Violent artillery duels are in progress from the Austrian border to the Adriatic sea. At all points on the Piava river where Austrian forces attempted to cross they have been thrown back with heavy losses. British and French reinforcements are constantly arriving in large numbers to assist the Italians.—The Turks are concentrating forces for the protection of Jerusalem from the British. A number of attacks against the lines of the invaders, have been made which are reported by the British to have been repulsed.—The Bolshevik peace movement in Russia is understood to have been accepted by both the German and Austrian governments and it appears that arrangements are now being made for a three-months' armistice during which time conditions of peace will be considered. It seems that southern Russia and Siberia are not likely to be parties to this peace convention. Reports have it that Siberia will appeal to the former Czar Nicholas to accept the rulership of these Asiatic domains, while southern Russian provinces seem to remain loyal to the entente allies.

Uprisings are in progress in China. The provinces along the Yang-tse-Kiang river constitute the center of the disturbance. A new federal cabinet is to be formed under the leadership of Wang Shi-Chen.

The Roumanian government has provided for a mission to the United States similar to those sent by the other entente allied countries.

Ambassador Francis, United States Ambassador to Russia, has advised that the United States make a protest against the movement for an armistice between Russia and Germany similar to the protests made by the heads of the entente embassies now in Petrograd.

National.

Appeals for relief by the American Red Cross during the past six months have been responded to liberally by the American people, which response enabled this organization to contribute \$40,373,657 for work in this country and abroad. The largest portion of the fund has been spent in France where \$20,601,240 was used.

National bank earnings during the past fiscal year were the greatest in the history of national banks, aggregating \$867,406,000, or a gain of 76,764,000 over the previous year. These banks report net earnings of 17.96 per cent on their capital stock.

On Sunday the Detroit United Railway advanced its rate of fare to five cents on all excepting the old three-cent lines, thereby abandoning the day-to-day contract with the city which has been in force since 1913.

(Continued on page 550).

The Problem of Increased Production

By EARL R. ROBINSON

Saginaw County Agricultural Agent

THE problem is to produce more with less men to do it. America has for years enjoyed the distinction of producing more per man than any other nation of the earth, but now is no time to rest on past glories. Now is the time for action. A million sturdy men of America are training for the fight. They are learning the war game; not the way it was fought in '61, neither as it was fought in '98. No, not even the way it was fought last summer, but the way it is fought now, today, in France. Antiquated methods have no place in the face of German shot and German shell. Antiquated farming methods have no place in the face of the world's present food needs. With the result of the war depending upon an unflinching food supply, it is no less important that we be as insistent and alert in agriculture as in fighting. Let us subject ourselves to a searching investigation to determine whether we are efficient or whether we are hindered by some old method which we cling to, simply because it is easier than to bestir ourselves to make a change.

Without any attempt to set things down in the order of their importance I wish to mention a few things that make for efficiency on the farm. First, have the work planned ahead; it is a very noticeable fact that the best farmers know months and often years ahead, what they are going to grow in every field on the farm. That is one of the particular reasons for a rotation of crops. It systematizes the work so that the farmer knows in advance, what help, seed, fertilizers, and machinery he will need. There never was a time when it was so important to know one's needs in advance as it is now. Transportation facilities are taxed to the utmost to move the increased volume of freight and one not only insures himself a supply by ordering early, but he also helps everybody else by enabling the railroads to haul full cars instead of partly loaded ones.

The Seed Supply.

Get seeds ready for use. Now is the time to get good seed corn and seed beans. Get seed corn now, because chances of getting it in the spring are pretty slim. Only a fraction of the corn in northern and central Michigan is fit for seed. Tens of thousands of acres did not have an ear of ripe corn. In all, however, there are a good many thousand bushels of corn that will make seed if handled properly. There is the point. Not nearly enough will be cured for seed, unless each individual farmer will take it upon himself to go out after his seed and save it now. The best of the corn is heavy with moisture. If it is placed in warm unventilated rooms it will mould. If it is exposed to freezing weather in the field, mow, stack, or crib the germ will be killed. Those who want a good stand of vigorous growing corn that will make a crop in Michigan are going into their own or neighbors' fields now, selecting sound ears and hanging them up by one method or another in a fairly warm, well ventilated place; summer kitchen, attic or furnace-room. Next spring before planting time they will test this corn for germination.

In regard to beans it may be said that one cannot make the most intelligent selection of seed except in the field. If one desires to start his bean crop out right next spring, he cannot do better than to save his seed from an early, comparatively disease-free field of beans. If he has not such a field he had better make arrangements for his seed from a neighbor that has.

"Preparedness Measures."

Another way for a man to get more bushels for his year's time from a given area, is to prepare his seed for planting. "Preparedness" is a good

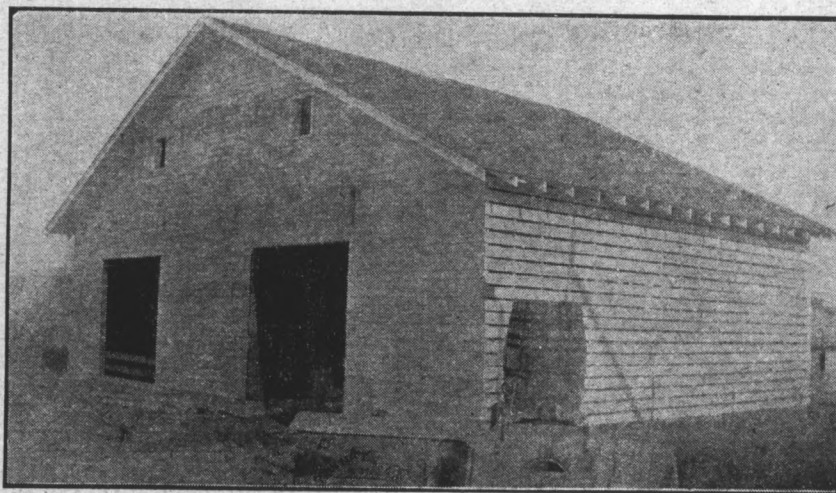
word for the farmer as well as for the nation. Too often grain goes into the ground just as it came from the threshing machine, weeds, dirt, shrunken kernels and all. The better farmers use a fanning mill for the cleaning of all their seed. And with the best of them this process of cleaning does not consist simply in blowing out the chaff and screening out some of the seeds. It is rather a very careful cleaning and recleaning process in which frequently a large share is discarded and a smaller part of the most select, clean, plump and heavy kernels are kept for seed. The discarded portion is as good for feed as it is before passing through the mill. The practice of treating seed grain for smut is becoming quite general and should be adopted by all growers of grain. It is a cheap, easy and effective method of insuring and increasing yield. And incidentally it will reduce the fire hazards. Two disastrous farm fires occurred in one county this season as the result of an explosion caused by threshing smutty grain. The losses sustained from these two fires would have purchased the formaldehyde to treat all the seed grains in that county for two years.

Another point of great importance is

to get crops in, on time. This requires that the soil be well drained. A careful investigation along this line carried out on a hundred farms in the Saginaw Valley indicates that crops are sown from five to ten days earlier on tile drained land than on land not tiled. This is a great advantage for oats and barley. Nor does this tell the whole story, for even though prepared earlier, tiled land is generally in much better condition to receive the seed than is untiled land at a later date. As a further assistance in getting crops in on time and in the best shape as much plowing as possible should be done in the fall. This is decidedly the best thing to do for oats, barley and spring wheat. The right kind of a seed bed for these crops is a moist, compact soil. This can most easily and certainly be obtained by fall plowing.

Much more remains to be said in connection with our responsibility as "soldiers of the commissary," but let us sum up the above and give it our honest consideration. As was forecast in the beginning it is a rambling series of suggestions on increasing farm efficiency for the season of 1918. The meat of the argument may be summed up in these words: The farmer's part in the great world war is tremendously important and to measure up to the emergency requires unceasing study, careful planning and vigorous execution.

Winter Building Operations



During the winter time while farm work is slack is an excellent time to plan and erect new farm buildings. By doing the work at this time of the year the farmer who is at all handy with tools, and most of us are, can readily construct his own buildings with very little help. Either for housing stock or for protecting grain and machinery, the plans should be carefully worked out so as to minimize expense in material and labor, while at the same time providing the most efficient and economical building for the purpose required.

The accompanying photograph illustrates one type of building that is efficient for several purposes. One side is entirely given over to ear corn. The center is divided into grain bins, while the farther side is intended to house machinery. The interior arrangement is such that the entire upper portion may also be used for storing lighter pieces of machinery and such parts as are easily taken apart for storage. The driveway offers protection for wagons.

On the farm where this building is being completed for use, the farmer is also installing a water system. He has taken advantage of the natural lay of the land and is laying the concrete foundation for his supply tank or reservoir upon a hill adjoining the barnyard. The work of laying pipes must be accomplished before freezing weather sets in, but all other work may be accomplished at leisure. There are many odd jobs to claim the farmer's attention during the winter months, but none are quite so important as the construction of new buildings, the re-

arrangement of old sheds and the addition of new improvements in the farm yard to facilitate next year's work.

Nebraska.

P. H. EATON.

SOY BEAN CULTURE.

I am looking for information as to soy beans and cowpeas. I want to find out all about the proper methods of soil preparation, planting, proper time to plant and cut, and everything about the crop.

Otsego Co.

C. F.

It is doubtful if any variety of the cowpea would prove a profitable crop for the northern end of the lower peninsula of Michigan. The cowpea is not a pea; it is a bean; and it is distinctly a hot weather plant. A season in the southern part of Michigan too cool for cowpeas to do well, is not uncommon.

The soy bean might be of value in Otsego county as a hay and pasture crop, especially for hogs, and properly handled would be a soil improving crop.

Ground that is to be planted to soys should be compact and moist, therefore it should be plowed about two or three weeks before the crop is put in, and properly worked. Artificial inoculation is needed on ground that has never grown soys. Good soy bean dirt applied by the glue method, using about a pint of dirt to a bushel of beans, is the best form of inoculation. Cultures can be obtained at the Agricultural College that will start development of nodules on the roots. The soy bean is not especially susceptible to frost, and probably can be planted with safe-

ty in Otsego county by June 1. The amount of seed we use to the acre is from thirty-five to forty pounds. We plant the soy beans in rows about thirty inches apart. They should be sown rather shallow, say an inch or an inch and a half in depth. When they are two or three inches high, cultivate carefully. Give them the second working in a week or ten days, leaving the ground as level as possible. This is all the cultivation they require.

The beans stand up well and a mower will harvest practically all of them with the mower knife set high enough to clear the dirt. Stony ground is not desirable for soys where they are to be used for hay, as the cultivator puts the stones up where the mower knives are liable to catch them.

Soy beans should be cut for hay when the bottom leaves are beginning to turn yellow. Rake as soon as the vines are somewhat wilted, and cock up in rather high narrow cocks. After they have stood about a week, double the size of the cocks by placing one on top of another. If the soy bean hay is properly put up, the cocks will shed water and the hay will keep in the field in spite of the most adverse weather, without material damage. Two fields of soy bean hay that have come under the writer's observation this year stood in the fields from the middle of September to the middle of November, and eighty per cent of the hay in those cocks showed the fresh green color when the hay was drawn in. The hay should stand in the cock at least two weeks before hauling.

The hay, even if browned by the weather, is of high quality, rich in protein, and is a splendid feed when properly balanced; good for milch cows, and especially good for hogs. The seed is rich in oil, and hay that is fairly well filled with seed possesses the characteristics of linseed meal.

Soys are an excellent hog pasture crop. The best time to turn in is when the first blossoms begin to show. The hogs will eat the beans, pods and the finer stems.

Soys should be raised on the same field at least two years in succession. Three years is better. If the cover crops of rye are used between the crops of soys, late and early rye pasture can be secured. A field that is used as pasture, and devoted to soys with rye as a cover crop for three years, will be in condition to raise good crops.

The first crop, even when inoculated develops nodules rather sparingly. The roots of the second and third crops, however, will carry them in great numbers. And other things being equal, the second and third crops on the same field, in succession, will be much better than the first crop. Crops of rye, wheat or oats, harvested for grain, following soys raised in the manner indicated, will show distinctly the invigorating effect of the soy beans on the land.

If one intends to use soy beans as a farm crop it is a good plan to plant a little patch five or six feet square in the corner of a field, year after year. It is not wise to plant them near the house as the chickens will eat them. If this little patch of ground grows soy beans two years in succession, then the dirt from it is the best inoculation medium that can be obtained.

It is not necessary for soys to ripen fully in order to be valuable as pasture or hay crops. They will stand considerable frost. They grow much better on fairly heavy soil than on light sand. Dry weather does not affect them as badly as it does white beans. And they are not subject to the common bean diseases. They may not prove a valuable crop as far north as Otsego county, but they are worth trying out, at least in an experimental way. Probably the Ito San would be a good variety to try out in northern Michigan.

JASON WOODMAN.

Kalamazoo County Agent.

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Hundreds of thousands of acres of rich land need only under draining to make them immensely productive. Why shouldn't you set free a part of this wealth, and incidentally enrich yourself also? The

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in swampy ground

cuts 100 rods to 150 rods of ditch a day—every foot clean, smooth, true to grade and ready for tile. You can operate winter and summer—in frost or hardpan—and as a rule do all the actual digging yourself.

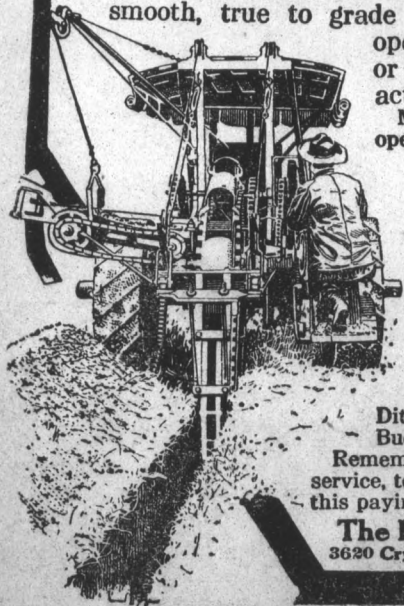
Mr. Wiles, of Plymouth, Mich., who has operated successfully for some years, writes:

"I bought the Ditcher three years ago, principally to tile my farm, and have tiled it completely. Have done enough outside work to more than pay back the price of the machine and all expenses, so my tiling cost me nothing. On one job I dug 80 rods in 4 hours, and on another 160 rods in 9 hours. Have not paid out \$10 for breakage."

Now, this is concrete evidence and should convince you. We have other letters—many of them—equally to the point and will be pleased to send you our book of facts—entitled "Dollars in Ditches"—which gives some wonderful Buckeye records.

Remember our Service Department is at your service, to help you establish yourself firmly in this paying business. Write us today.

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Eliminate the Wastes

JUDGED by Old World standards, we have been a wasteful people.

To some degree, this waste has been, in the past, unavoidable. When nature bestows lavishly and men are clearing a new land, natural resources are consigned to the flames or left to decay, simply to get rid of them. But this period in our history has gone forever. In its wake, however, it has left the spirit of improvidence and wanton wastefulness that has received till recently, no serious check. Plenty of land, plenty of forests, plenty of game and other natural things—all this has created in the American people, an attitude of reckless use of necessary products. In early times, if the fertility of the land failed, there was plenty just as good, further on. If the timber became scarce, there were boundless forests just ahead. If man slaughtered the pigeon and the buffalo and the deer, new tracts could be found where they abounded. Out of these conditions grew the lax and slovenly farming, the misuse and extravagance in the cutting of trees, and the wanton waste in the hunting of wild game.

For some years now, an attempt has been made to conserve our natural resources and to stop nation-wide waste. But it has required a world war to bring home to the people the real significance of the mad pace they have been running. Shortage in the food supply; shortage in the fuel supply; war-time prices for things once so cheap and plentiful—these are the factors that have set the people to thinking. In addition to this, a campaign initiated and supported by the government, looking to economy and thrift, has quickened the trend toward less wasteful methods along all lines. Can we not already see that one great good to come from the world war lies just here, in the creation of a spirit of reasonable economy among all classes?

Some Wholesome Examples.

In the writer's section, some important features concerning the subject under consideration, have become evident. One of these has grown from the back-yard garden movement. No movement set on foot for food conservation and preparedness, has been more successful than this universal planting of gardens. In the main, the gardeners have been successful, and nine out of every ten, will plant a garden again next spring. And here we come to the elimination of a waste common in America. I refer to the practice of burning the leaves that fall on the lawns and in the yards and along the road-sides. These leaves are nature's fertilizer, and are excellent for gardens, berry patches, and the like. They are also excellent as material for scratching rooms in hen houses, and in the winter, after being mixed with the droppings from the perches, make a garden fertilizer that is hard to beat. In the old world, the farmer and gardener conserve everything that will enrich the land; and more and more, they are doing the same thing in America. Not nearly so many leaves have been burned this year, simply because the gardeners have a better use for them. Do not burn your leaves by the roadside. It may be a little more work to convey them to the hen-house or the berry-patch, but it will pay.

In the writer's section, too, the fuel shortage has borne fruit in greater economy along the line of utilizing the wood that in former times, was left to decay. Old apple trees, fallen trunks, dead limbs, and the like, are being cut up and used for fuel. Enough limbs and fallen trees have gone to waste each year, in some of the wood-lots of this part of the state to furnish needed fuel during the winter for families on the verge of want. Moreover, this same wasting supply would have served, last winter, to tide over some very acute periods in the fuel situation. The war

and the general fuel situation have brought the question of conservation in our wood-lots, home to the owners. Generally speaking, but little will be wasted along this line, during the coming year.

Better Methods Eliminate Waste.

In still another way, the war is producing a spirit of economy. More careful husbandry, less waste in the grain fields, less waste in all farm products. In most cases, let us hope the spirit of patriotism is playing a share in the movement. But where patriotism will not do this, love of money does do it. All farm products are too high-priced to permit of the old-time wasteful methods.

But someone will say: Present conditions affect only a certain class. The improvident will be improvident still. The slovenly will be slovenly still. The ne'er-do-wells will pursue their usual ways. In a minor sense, perhaps yes. But in the larger view, no. Out of the terrible war; out of the bloodshed and wretchedness and unutterable woe, must come many beneficial features. This must be so, else civilization itself is but a sham and a mockery. And among the salutary things so far as the American farmer is concerned, and so far as the American people are concerned, will be the elimination of waste along many lines. Never again will the people return to the wasteful methods of the past. They are being taught a valuable lesson through a great world calamity. The virgin soil stretches no longer in boundless reaches, toward the beckoning west. The once unbounded forests have dwindled away, and the wasteful days are gone forever.

Hillsdale Co.

J. A. KAISER.

SPRING VS. WINTER RYE.

I would like to ask a few questions in regard to the sowing of spring rye. Is it as sure a crop as fall rye? At what time of the spring should it be planted? Can I seed with spring rye? Is it as adaptable to various kinds of soil as fall rye? Is there any special kind of rye which is best to plant in the spring?

Emmet Co.

W. N.


Spring rye has been grown to a limited extent in some sections of the state in years gone by. From the writer's observations, it did not prove as prolific a yielder as winter rye, and the practice has grown up among rye growers of sowing winter rye very late in the season in preference to sowing spring rye. Winter rye has been sown even in December and produced yields which compared favorably with yields of spring rye, and where so sown affords a better seed bed for the seeding of clover the following spring than where the ground is fitted and sown to spring rye. The experience and observation of other farmers on this point would be of interest.

LIME SHOULD BE ORDERED NOW.

Orders should be placed at this time by farmers who intend to use lime on their land in order to increase next season's crop. If orders are placed at the present time the manufacturers will be able, they say, to supply the agricultural needs. By being given orders now they will have six or eight months in which to prepare the necessary supply, whereas they will be swamped if the orders all come next spring.

Lime applied in the fall or winter is as effective as when applied in spring. Fall and winter application of lime is urged as good farm practice and also as an emergency war measure. By following this suggestion farmers will be improving their land so as to turn out maximum crops.

Have you secured your seed corn for next year? If not, do it now!



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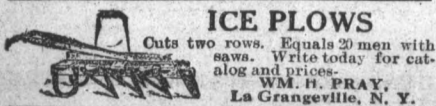
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Growing the Plum

By R. G. KIRBY

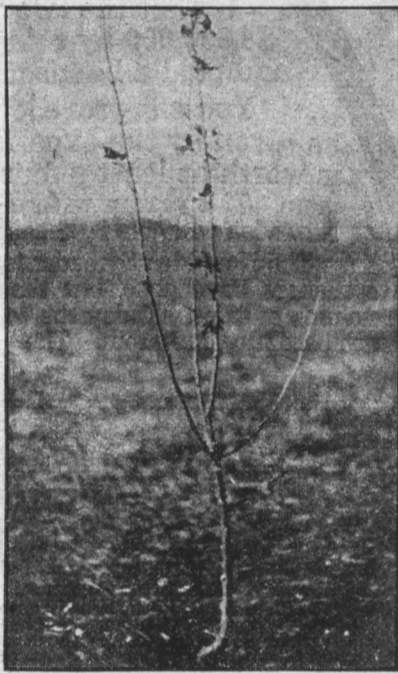
THE plum is a perishable product and must be harvested at the right time and marketed immediately after the harvest. For this reason it seems difficult to obtain first-class plums on the average local market. Even during the height of the fruit season the man in this state with an appetite for plums will usually buy plums which have been shipped across the country to supply the demands for his local market. There is a reason for the ready sale of the plums grown in the distant state. They are generally neatly packed with the skins free from mechanical injury and they appeal to the eye of the consumer. Plums raised in this state are too often handled like potatoes. After being dumped from the picking basket to the orchard wagon they are dumped into the market wagon and later dumped into the hands of the consumer who may can the sticky mass or dump it in the garbage can. Quality plums deserve careful handling. When they reach the market the profit in producing them will be determined and if they are attractive and free from blemishes they will assist in making friends for the plum business otherwise they simply give the home producer a reputation for a poor product and the buyer who likes plums will not buy fruit produced near home.

The Best Variety.

In selecting the varieties of plums for the home market it is hard to beat the list recommended several years ago by O. K. White, of the College Experiment Station, who spent many years in a section noted for profitable plum orchards. For home use he mentions Red June, Czar, Abundance, Jefferson, Brawshaw, Lombard, McLaughlin, French Damson, Fellenberg or Italian Prune, Monarch, Bayay's Green Gage (Reine Claude), Coe's Golden, and Stanton. Among the Japan plums for market he recommends the Red June, Burbank and October Purple. Among the European plums mentioned for the

market are the Bradshaw, Lombard, Black Diamond, Arch Duke, Pringle Damson, Shropshire, Grand Duke, Fellenberg, Monarch, Coe's Golden, Bayay and Copper. In selecting plums for a home orchard it pays to choose varieties which have the quality which makes them desirable both for home use and marketing as well as shade for a poultry yard I decided on the Lombard, Bradshaw, Monarch and Coe's Golden. I also planted a few of the Improved Native plums, selecting the De Soto as a very desirable variety for home use. This is also considered a good variety to use in plum orchards where there are other varieties requiring pollination.

Plums can be grown successfully on a wide range of soils, the Japanese



A Thrifty Start is Desired.

plums seem to do best on the lighter soils while the European varieties seem to prefer a heavy clay loam and do not succeed as well on the lighter soils. Generally speaking any type of well drained soil will grow plums and there should be more plum orchards producing quality plums for home use.

Plum trees should be planted from sixteen to twenty feet apart. In poultry yards where the trees are especially planted for shade, sixteen feet apart will be about right. Fall planting on some farms is desirable as it interferes less with the other work and if left until spring there may be little time for fruit tree planting except on farms where fruit growing is a specialty and the orchard owner considers an annual increase in orchard plantings as part of the regular work. There are arguments in favor of fall planting. The trees become established and are ready to start out promptly with the coming of spring. The ground is often in better shape for planting and nurserymen being less rushed at that time are better able to give prompt attention to orders.

Spraying Necessary for Success.

Plums require spraying the same as other fruit trees. They may become covered with scale but they do not seem as susceptible to the San Jose scale as the apple and peach. Spray with lime-sulphur to control scale on plums at the same time that the apples are sprayed. The dormant spray assists in destroying insect eggs and fungous spores at the same time that it destroys the scale. To prevent curculio, fruit rot and black knot apply Bordeaux mixture plus three pounds of arsenate of lead per barrel before the buds open. After the blossoms fall apply Bordeaux or dilute lime-sulphur and two pounds of arsenate of lead to each fifty gallons of the mixture. Two

weeks later the last mentioned mixture may be applied again and the same may be applied at intervals of two weeks until about one month before the harvest. The amount of spraying can often be determined by the condition of the fruit but there is more danger of neglecting to spray than there is in spraying too often. It costs money to spray, but where fine quality plums can be raised near a good local market they can be made to pay. There is no reason why the little oblong baskets which come in six-basket crates should not be as desirable when packed with fresh Michigan fruit as they are when filled with the bright clean specimens on which the consumer must pay the freight from California.

TROUBLE DEPARTMENT.

Shortage of Vegetable Seed.

I see in your paper there is a shortage in some garden seeds. As table beet seed has advanced in all the seed catalogs, I write to ask you if there is a very short crop of table beet seed in the country.

C. S. D.

The shortage of vegetable seed in general is due to the fact that that part of Europe which is the greatest producer of vegetable seeds for use in this country is in a state of war.

Most of our beet seeds came from Denmark, Germany, France and Russia. A small part of them is grown in Michigan and California.

It is the cutting off of this former supply which has caused the general increase in price of garden seeds.

Fertilizing Onions.

I have two and a half acres of loose muck from one to five feet deep, well drained, under plow three years and planted to onions and sugar beets this year, which I wish to sow to onions next spring. It needs fertilizing heavily. Would fresh horse and cow manure plowed under this fall, also a top-dressing of fine manure be advisable for onions?

A. B.

We do not think it advisable to fertilize muck soil heavy with fresh manure, especially if it is coarse. Muck soil is usually quite loose and contains a large amount of nitrogenous matter. In the use of manure you will furnish things which muck has the most of.

We would, therefore, suggest that you fertilize with commercial fertilizer, acid phosphate and muriate potash, if obtainable, or if the plants need stimulating in growth, nitrate of soda.

Frequently where plants do not make normal growth it is because of the acid condition of the soil. It would be advisable for you to test your soil, and if found acid, use some form of lime. If you wish to sow onions, we would advise your following this formula.

RENOVATE THE ORCHARD.

During recent years the University of Missouri College of Agriculture at Columbia in cooperation with a number of practical orchardists has been carrying on demonstration experiments in the value of spraying, pruning and the general renovating of neglected orchards in Missouri.

The best results of these demonstrations show that apple orchards well managed can be made to yield the largest profits of any Missouri farm crop. On the other hand neglected orchards in the same neighborhood hardly yielded interest on the valuation of the orchard.

During 1917 the results of proper spraying and pruning have shown larger profit than in any previous year. During the last year neglected orchards have set very little or no fruit. The little fruit which was set here and there was for the most part small, wormy and of low market quality. Orchards properly sprayed and pruned during the last two or three years have set anywhere from a fair up to a heavy crop of fruit. The quality of apples on well managed orchards this year has been the best produced in Missouri in recent years.

Instant Postum

fits the spirit of the times perfectly. It is

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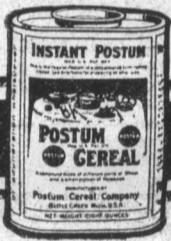
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"There's a Reason"



The Breeding Ewes

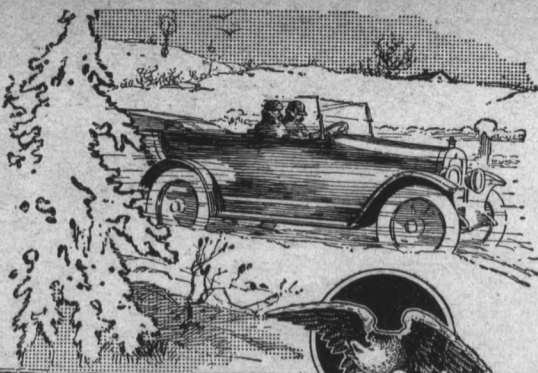
During the winter months clover and alfalfa are the standard roughages for pregnant ewes. The high prices of these hays in recent years has caused the use of other cheaper rough feeds to replace the part of the more expensive hays. Corn silage and corn stover are the most common rough feeds used to replace clover or alfalfa hay. At the University of Missouri Experiment Station feeding trials were conducted to compare the different roughages for breeding ewes. A carload of western Colorado ewes was purchased in the fall and kept on bluegrass pasture until December 9. The rams were left with ewes from the middle of September to the first of December. The ewes were divided into eight lots of seventeen ewes each.

A ration of one-third pound of grain and two pounds of clover hay with all the corn stover the ewes would eat was compared to a ration of an equal amount of grain and three pounds of clover hay per head per day. In this case the corn stover was substituted satisfactorily for one-third of clover hay. However, in the lots where grain was not fed the substituting of one-third the clover hay with corn stover was not successful. The lambs in the hay-stover lot were not as strong and did not make as good gains as those on clover hay alone. A ration of corn stover as the only rough feed, with one-half pound of grain per head per day was fairly satisfactory, but not as satisfactory as in lots where one-third pound of grain and two pounds of hay were fed. However, corn stover proved to be a superior roughness to timothy hay when fed with one-half pound of grain per head per day. The feeding of corn silage is sometimes attended with ill results. In many instances the trouble with silage has been attributed to mould, or to the acid in silage that has not been properly put up. Sheep seem to be more susceptible to the poisons of mouldy silage than cattle. In these trials the silage proved to be superior to the corn stover. Both feeds were fed in combination with grain and clover hay. In all cases the silage proved to be the better feed of the two. In trying to reduce the cost by replacing a part of the clover hay with silage, a ration of corn silage one and six-tenths pounds, and clover hay one nine-tenths pounds was fed. This ration gave as satisfactory results as clover alone. The average daily amount of hay consumed per ewe was three and one-quarter pounds. The ration containing grain one-third pound, and clover hay two pounds, and silage one and eight-tenths pounds proved as satisfactory as a ration of an equal amount of grain and three pounds of clover hay. Silage in these lots was substituted for practically one-half the clover hay. It required practically two pounds of silage to replace one pound of clover hay. However, rating the silage at \$5.00 per ton it is in most cases an economical feed to use in connection with clover hay. A ration of three-tenths pound of grain and three and one-half pounds of silage, which was all the ewes would eat, proved superior to one of four-tenths pounds of grain with all of the stover that the ewes would eat.

The important objection to the feeding of silage by the average farmer is because the small amount that ewes will eat makes it necessary to have quite a large flock in order to utilize enough of the silage per day to keep it from spoiling.

The grain fed in all cases was a mixture of six parts of shelled corn, three parts of wheat bran and one part linseed oil meal by weight.

The measure of efficiency of the various rations was weight, condition and thrift of the lambs at birth and thirty days after birth, and the condition and thrift of the ewes and their ability to suckle their lambs.



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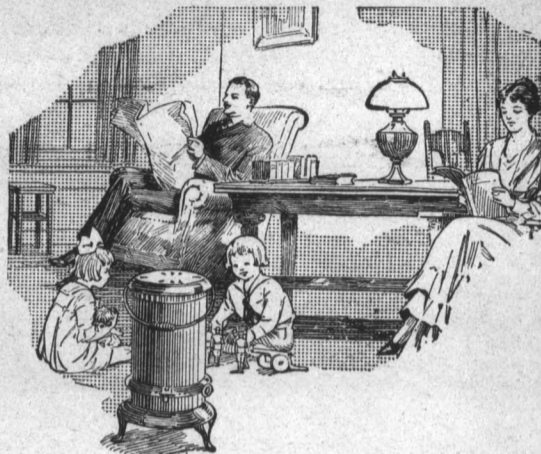
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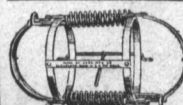
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FARM BUTCHERING SAVES PORK COSTS.

"Hog Killin" on the farm, in spite of much encouragement given it in recent years, is not yet a general practice. The custom of buying meat from local stores or hucksters is increasing among farmers in spite of the fact that meat, especially pork, can be grown and cured at home for much less than the cost of purchased meat. These statements are made by animal husbandry specialists of the United States Department of Agriculture in a new publication of the department, Farmers' Bulletin No. 913, "Killing Hogs and Curing Pork," which is intended to aid in popularizing farm butchering.

The cheapest meat a farmer can use is the product of his own farm, say the specialists. This is also true of the suburban or town farmer who fattens one or two hogs on kitchen and truck garden wastes. Many farmers, it is said, will have their own meat supply for the first time this year. The publication just issued takes the farm butcher step by step through the processes of slaughtering, cutting up the carcass, lard making, curing, sausage making, and smoking. It tells also how to make a small ice house which may be used not only for meat but for other perishable products.

This is the equipment needed for slaughtering: An eight-inch straight sticking knife, a cutting knife, a fourteen-inch steel, a hog hook, a bell-shaped stick scraper, a gambrel, and a meat saw. More than one of each of these tools may be necessary if many hogs are to be handled and slaughtered to best advantage. A barrel makes a very convenient receptacle in which to scald the animal. It should be placed at an angle of about forty-five degrees at the end of a table or platform of proper height. The table and barrel should be securely fastened to prevent accident to the workmen during the scalding. A small block and tackle will reduce the labor of handling the animal.

Only hogs which are known to be healthy should be butchered. There is always danger that disease may be transmitted to those who eat the meat, while the quality of the meat is always impaired by fever or other derangements. Hogs can be killed for meat any time after eight weeks, but the most profitable age at which to slaughter is eight to twelve months. An animal in medium condition gaining rapidly in weight yields the best quality of pork. Hogs intended for slaughter should remain unfed for at least twenty-four hours, or better thirty hours, and all the clean, fresh water they will drink should be provided. Temperature can not be controlled on the farm but it is possible to kill when the weather is favorable. In the fall it is best to kill in the evening, allowing the carcass to cool over night. In winter a day when the carcass can be cooled before it freezes should be selected.

FAIRFIELD SHORTHORNS AVERAGE \$287.

The forty Shorthorns offered by H. B. Peters at the Fairfield Stock Farm sold at auction November 19, averaged \$287. A large crowd was present and the stock was found in excellent condition.

Lady Belle 2d, a grand two-year-old heifer heavy with calf, topped the sale at \$600, her new owner being P. P. Pope, of Mt. Pleasant.

Chloris 9th, a good red cow, sold for \$525, going to A. E. Stevenson, of Port Huron. Chloris 11th, another choice cow, sold to Theo. Nicklas, of Metamora.

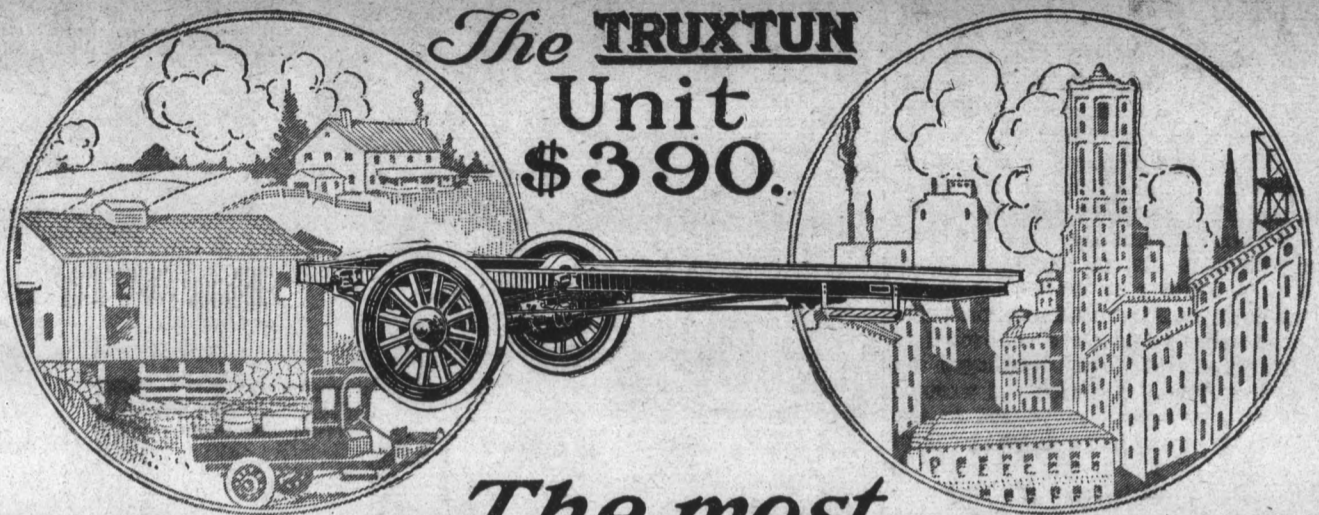
M. W. Wagner, of Fremont, Ohio, bought several choice calves and heifers.

Carey Jones gave a short talk on Mr. Peters' connection with the breed for the past seventeen years and the good he had done for the Shorthorn.

Wm. Aikman needs much comment on the good condition he presented the cattle in.

It was a successful sale and Mr. Peters is satisfied with the good results.

"Scotty Milne," Bixby & Miller, assisted Col. Jones in the ring.



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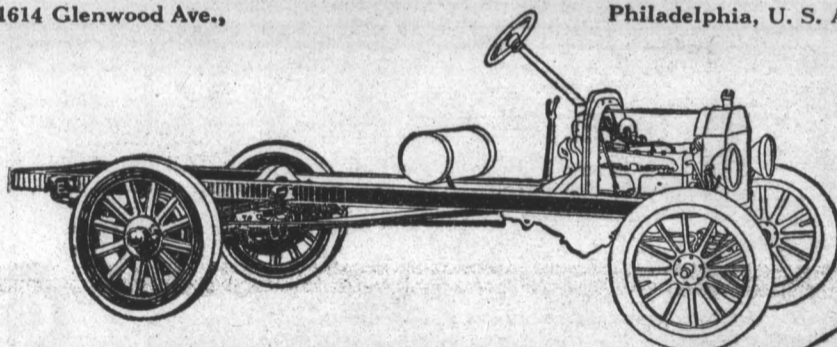
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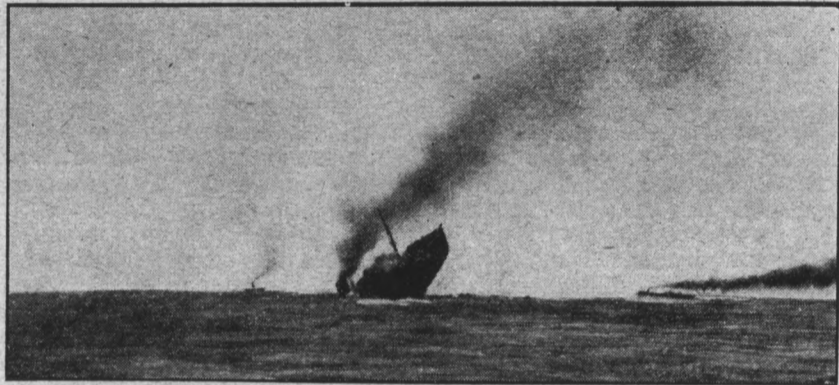
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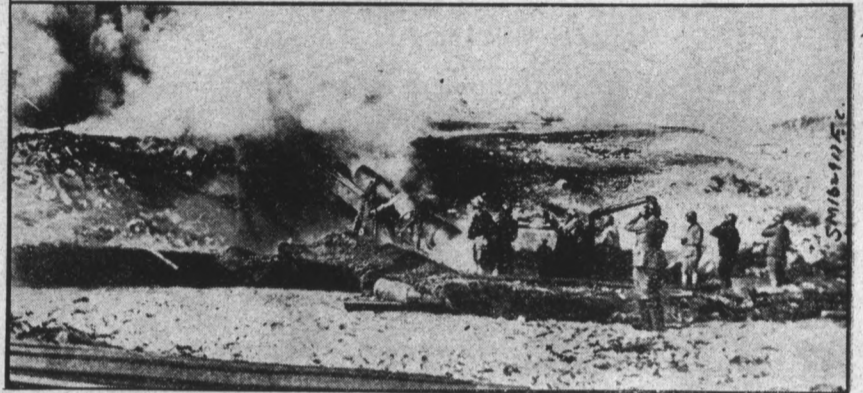
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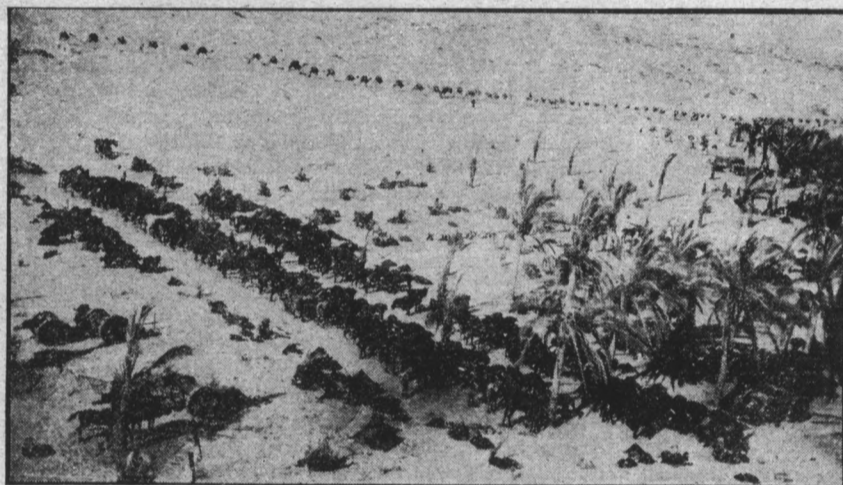
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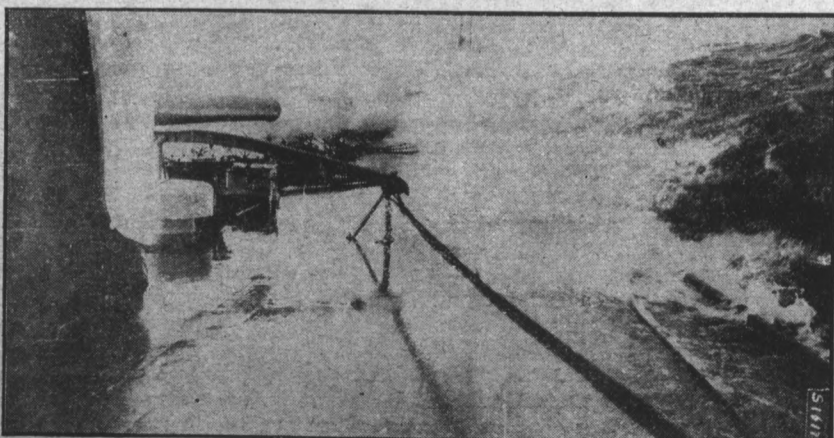
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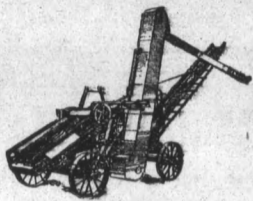


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With the Pioneers---By MARY L. DANN

NO one would ever suspect that the dignified, cultured and religious colonists, who settled the delightful village of Vermontville, in Eaton county, and who raised the ethical and educational standard so high that today it is considered a feather in one's cap to please a Vermontville audience, would ever caper off into the realms of fun, but that they actually did, a perusal of Mr. E. W. Barber's history of Vermontville will show.

They even laughed at their stern, uncompromising minister, Rev. Sylvester Cochrane, who ordered a barrel of the local cooper, in which to gather sap. He arose early and went to the house of the cooper, and finding the barrel outside but the cooper and his family still in bed, shouldered the barrel and went home. Mrs. Cochrane, who was getting breakfast, was surprised, indeed, and exclaimed, "Why, Sylvester, don't you know this is Sunday." He was appalled, for he well knew that if any of his flock saw him carrying the barrel they could never be made to believe that it contained the water of life or the milk of the Word. Rev. Cochrane confessed that day, in the pulpit, that he had made a mistake in counting the days.

They laughed, too, when W. S. Fairfield's best cow, preferring the watery to the milky way, tried to cross the Thornapple at high water. She found the bridge giving way and floundered upon a pair of large oak logs from the causeway, which were fastened together and were floating nearby. She refused to budge one inch further. They placed poles around her to keep her from falling off and took feed and bedding to her and milked her twice a day. Like Noah of old, that cow held steady until the water went down, and nobody can just tell what might have happened if she had seen fit to rock the boat.

Deer, wild turkeys, coons and porcupines abounded, and the cooning parties indulged in were not entertainments of the "pink tea" variety, but they were full of enjoyment for the red-blooded settlers, and the next day pulling porcupine quills from the mouths of the dogs, and logging and chopping was sufficiently active employment to keep them from going to sleep. Mr. Barber states that William F. Hawkins was the foremost chopper of the colonists; that he could cut an acre of average timber in a day and could fell a tree with wonderful accuracy. He would bore a hole with an augur in the trunk of a fallen tree, stick a wooden pin in the hole and fell another tree standing forty or fifty feet away and hit the pin almost every time. The maxim of that day was, "a workman is known by his chips."

One of the favorite sports was bear hunting. The bears had an excessive longing for the young pigs of the colony, and carried them off at every opportunity, so it was necessary that the sport be indulged in as often as evidences of bruin became apparent in the vicinity. Mr. Dudley Bullock and his young wife lived about four miles from the village of Vermontville and from the nearest neighbor. They became used to the tramp of wild animals around their cabin and the howls of wolves after they had retired at night, and paid little attention to these lugubrious serenades. One day Horace Howell, of Calhoun county, the father of Mrs. Bullock, came over to visit them, and that hunting in those days was not the tame sport it now is his experiences will witness.

Mr. Howell started on a hunt and when a short distance from the cabin, brought down a deer. He shouted to Mr. Bullock to come and help him

bring it in. Mr. Bullock started, and on the way saw three bears descending a leaning tree. He pounded on the tree and tried to stop them, all the while shouting to Mr. Howell to come with his rifle. One of the bears, realizing that there was trouble in store for himself and his companions, loosed his hold on the tree and dropped straight down onto Mr. Bullock. When the big, furry ball struck him, it flattened him to the ground, but, undismayed, he sprang to his feet and dealt the bear such a terrific blow with his club that it broke and he toppled over onto the bear and the performance began in dead earnest. There was growls, intermingled with shouts and flying leaves. Each tried to make a getaway, for neither cared to hob-nob with the other. The bear succeeded in escaping to the forest, but the two non-combatants, still on the leaning tree, paid their lives as a forfeit for watching the best fight they had ever seen instead of leaving while the leaving was good.

Upon another occasion, a number of Vermontville colonists were out hunting and surrounded a bear in a swamp. Everything seemed to be going the way of the bear, for it was raining and the powder in every gun was damp and the guns would not go off. However, no such thing as allowing Bruin to go without a hand-to-hand encounter occurred to these sturdy fellows. The bear was willing to make a "strategic retreat" but a few of the men rushed up to him and succeeded in keeping him sufficiently interested in what was going on in front that he did not perceive Mr. Davis approaching from the rear, until he felt the death-blow from the axe he carried in his hands.

But the bear hunt which left a lasting impression on the town occurred in 1839, when a bear came out of the woods and sauntered down the main street of the village. Mr. Henry J. Martin, then a tiny boy, was playing in the road in front of the Martin home as unconcerned as though bears had never been heard of. The bear made toward Henry and Henry made toward the bear, Henry thinking the bear a dog who would make a capital playfellow and Bruin thinking what a juicy morsel Henry would make at the bear barbecue that evening. Mrs. Cochrane, wife of the minister, screamed as women can scream when thoroughly frightened. The scream scared the bear, Henry and Henry's mother, who came to the rescue of her son. When the boy had been carried to a place of safety, calm settled down on the village but not for long. An evening or two later the bear returned and carried away a fine young pig belonging to R. W. Griswold. He crossed the road and plunged into the woods. An avenging party, of which Rev. Cochrane was the captain, surrounded the section and at a given signal, marched to a common center. The bear appeared and men and boys gave chase. A large mastiff bearing the expressive name of "Bone" was the first to come upon the bear and with more pluck than discretion tackled him. The dog was getting the worst of it, when John Wager thrust the butt of an old Revolutionary rifle into the bear's mouth and loosed his hold on the dog, and the stock of that old musket ever after bore the marks of that bear's teeth. The rifle balls hummed the death-song of his bearship. He was loaded on poles and carried in triumph about a mile to the public square in Vermontville, where he was dressed and divided into as many parts as there were families in the town, and as each piece of meat was held up, a blindfolded man called out the name of the happy family whose portion it should be. The colonists contend that bear steak is delicious, although a bit wild and woodsy in flavor.

But even this was not the end of that bear, for the skin was sold for seven dollars and the money used to buy the first Sunday School books Vermontville could boast.

Bumper the White Rabbit

By GEORGE ETHELBERT WALSH

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Bumper and Carlo

THE little white rabbit found a home already waiting for him in the prettiest corner of the garden, but before that the red-haired girl harnessed him to a ribbon, and let him eat grass and vegetables to his heart's content wherever he took a fancy to go. Edith lost her appetite apparently in watching her pet eat, for she would not even go in to breakfast even after the nurse had called her several times; but finally, when her mother came out, and took her by the hand, she obeyed. "Can't I take the rabbit in with me?" she asked.

"No, dear, put him in the pen over there. He'll be quite content alone."

So Bumper found himself alone in the garden, or rather in a pen shut off from the rest of the garden by a stout chicken wire. There was a box in back of the pen, filled with soft grass and straw, and a tin pan filled with fresh water. There was such a variety of things to eat that he kept nibbling first a carrot, then a cabbage then a blade of grass, then some corn, then a piece of bread, then some crackers, then a red beet, then a spear of grass again, and so on through all the long list of good things.

It was such a mixture that he was never sure just what he had in his mouth. It was just as if a boy or girl had crammed the mouth full of gum drops, chocolates, fudge, lollypops, taffy, peppermint, lemon and wintergreen drops, and a few pieces of fruit cake by way of change. How could he or she tell just what the teeth were munching on?

Bumper tasted them all, and thought that each one was sweeter and better than the other, but when he got around to the end of his circle he had to begin all over again to see if they didn't all taste better the second time. My, it was a feast that made his eyes open and his stomach swell like a toad's trying to swallow a gnat.

Edith came out so soon that Bumper knew right away she hadn't eaten much breakfast, and half of it was in her hands, and apparently the other half was on her face instead of being in her stomach where it should have been.

"Do you like bread and jam?" she asked, poking the bread she had been eating at Bumper.

Like a well-bred rabbit, Bumper stuck his nose up and sniffed at the dainty offered him, but when he got some of the jam on his nose he hopped away and sneezed. It was gooseberry jam, and Bumper hated gooseberries, although he had never tasted of them before.

"Oh, you funny bunny!" exclaimed the girl. "Why don't you like jam?"

Then she caught a reflection of her face smeared with jam in the pan of water, and she laughed happily. "I don't wonder you don't like it on your face, Bumper," she said. "It does look awful, doesn't it? My, I must have nearly a quart on my face."

Then she began cleaning her lips and chin, using Bumper's pan of water for a wash basin. Bumper didn't object to this, but he did hope she'd remember to change it, and give him clean water to drink. Even gooseberry-jam-water wasn't to his liking.

Early in the morning Edith was carried away by the nurse for her lessons and then her music teacher appeared, and Bumper could hear her fine, small voice singing in accompaniment to the piano. After that she came into the garden again to play with him.

But she was soon called away to

lunch, and then she had to go walking with her mother, and it was nearly sundown when she returned. Her first thought was of the rabbit, and she came running pell-mell across the garden to greet him.

"Have you missed me, Bumper?" she asked, squatting down on the grass in her new white dress. "I've been awfully lonely without you. I do hate music lessons and visiting. I wish I could stay here all the time with you, and maybe eat grass and green things, and grow fat and white like you. I wonder how it feels to be a rabbit. Yes, I believe next to being a little girl, I'd rather be a rabbit than anything else! Rabbits don't have to work or study or sing or do anything. Goodness! what an easy time you have of it."

Bumper thought so, too, and he began to swell up with pride. He was a very young rabbit, and he was easily flattered. He wanted to tell her that he would rather be a white rabbit than a girl with red hair, when the nurse called Edith to dinner, and she had to leave him.

It was a beautiful moonlight night, and Bumper wasn't a bit sleepy. What rabbit could be in such a wonderful garden with the moon shining down upon it. Bumper danced around in his small pen, and sat upon his hind legs as if praying to the moon; but in reality he was trying to see how high the wire fence was, and wondering if he could jump over it. He had tried all day to nibble through it, and dig under it, but the wire had only hurt his teeth without giving way a particle. If he was going to get out so he could run around the garden, he would have to do it by jumping clear over the wire fence.

He tried it once, and fell short by several inches. He got a hard jolt in doing it, and rubbed his head where it hit the earth. But the next time he nearly reached the top.

"I can do it with a few more trials," he said, happy at the thought of his freedom. "I'll surprise the little girl when she hunts for me in the morning."

He hopped back a few feet, and then took a flying leap, and landed plump on top of the fence. The wire caught him in the middle of the stomach, and there he hung for a moment undecided which way to fall. But he kicked with his hind feet, and that seemed to upset his balance, for he plunged headfirst down, and landed on the other side in a wild somersault.

"Well, that wasn't exactly graceful," he said, "but I'm here, and that's where I wanted to be. Now I'll explore the garden by moonlight."

First he ran to the vegetable garden and nibbled at whatever he could find; but he really was so full he couldn't eat much more. Then he frisked around on the lawn, playing with his tail, and trying to jump as high up in the air as high as he could. It was great fun, and Bumper panted with joy.

Then suddenly out of the dark shadows of the garden something large, fierce and frightfully noisy came bounding toward him. Bumper stood stock still until a deep baying sound told him that it was Carlo, the big dog, whose barking under the bedroom window had disturbed his sleep the night before.

With a bound Bumper leaped over a rose bush, and started for his pen in the corner, but Carlo took the bush in a powerful leap and made a grab for his neck with his jaws. Bumper squealed



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THE MICHIGAN FARMER,

Detroit, Mich.

ed with fright, and turned to the left to find shelter under some prickly gooseberry bushes. Carlo yelped with pain when the thorns of the bushes stuck in his nose, and from that moment Bumper began to like gooseberries.

But the chase was not over. Carlo drove him out of the bushes and chased him across the lawn into the garden. Bumper tried to hide behind a cabbage but Carlo saw his white head, and pounced upon him. He missed by an inch, and Bumper, now terribly frightened, and panting for breath, made a dive for a big, dark hole that suddenly opened directly in his pathway.

He ran in this as fast as he could. Carlo followed a short distance, and then got stuck. The black hole grew smaller at the other end, and Bumper felt that he was safe for the present.

"My, what a narrow escape!" he said, panting for breath. "Now, how am I ever going to get out again! Carlo will pounce on me if I stick my nose out. I guess the best thing I can do is to sleep in here, and in the morning go out when Edith calls me. She'll keep Carlo away."

And with this remark, he rolled up in a ball, and went to sleep.

(Next week you will learn of Bumper's terrible experiences with the sewer rat).

Battles of the Air

By EARLE W. GAGE

IF Daedalus, who for many centuries held the world's record for over-seas flight, were alive today he would be greatly interested in the improvement effected in wings since his days. Imagine his being at Saarbrücken some months ago when that city was bombarded by a fleet of sixty-two aeroplanes. What would have been his sensations when he watched the air craft dart hither and thither, casting their bolts of destruction, avoiding the counter strokes of the anti-aircraft guns, all a mile or more up from the earth?

With the continuous stories that come from the various fronts in Europe, depicting the wonderful aerial achievements, we have been taking the art of flight too much as a matter of course. Even when America entered the conflict, Uncle Sam did not possess a staff of fliers sufficient to create enthusiasm, for our department heads had not come to appreciate that the greatest battles are to be decided in the air, if not the great world war. The United States is now expending \$640,000,000 for an air fleet second to none.

The sensations we experienced at the opening of the war, when we heard of the aerial exploits, have been dulled by repetition. We must not forget that out of this world conflict is to come aerial transportation. Few people realize that when the Germans were shut off from Turkey two summers ago, their huge machines carried whole ammunition plants and supplies over the strip held by the allies, set them up in Turkey, and were soon keeping their promise to supply the Turks with war explosives. Not only this, but for several months German machines kept carrying raw material, some loads as high as eight and ten tons, from the interior of Germany, over the mountains and into Turkey. This of itself is a feat which has been unequalled anywhere in human history.

Perhaps aerial transportation would have come in time without the eventuality of a war, yet no one will gainsay the fact that it has come a whole generation sooner because of the unnatural acceleration.

There are nearly 10,000 men flying along the eastern and western fronts of the war zone at present. As soon as the American staff has completed their training this number will be increased. In actual service the number of casualties has been remarkably small—as a matter of fact, it is reckoned as the "safest" branch of service. If these men fly in the face of shot and shell suffer comparatively little, what a small matter the air journeys of the future in peaceful pursuits will be! These pilots are proving by their actions that the aeroplane is as safe as any other method of rapid transit. The fear of the air has completely disappeared. When the war is over these conquerors will turn their knowledge into constructive channels, into the development of aerial routes of transportation which will be limited neither by barriers common to land or sea. Al-

ready a German corporation, after the experience of the Turkey matter, has been founded, and will advertise "special excursions from Berlin to Pekin in four days, 'after the war is closed.'"

With the greater use of man's conquest of the air has come a series of improvements in the materials of flight. During the past year tremendous progress has been made in the adaptation of the aeroplane to the exigencies of the air and the requirements of speed, stability and endurance.

The motor which formerly rushed off, sputtered, slowed up and finally stopped, now beats with the precision and regularity of the finest timepiece.

Think of the record of the first eight months of the French aeroplane alone. They traveled a distance equal to forty times around the earth at the equator, a substantial testimony to the heart of the aeroplane—the motor. When we add to this the totals of the British, Russian, Austrian and German aeroplanes, the total distance traveled through aerial routes is almost beyond

ful load of more than two tons, exclusive of pilots and gunners.

The great war has heard the death knell of the monoplane, at least for military purposes, and it is reasonable to believe that the development of the next few years will be governed by the experience gained in the conflict. This elimination of the monoplane has resulted from three causes, first, the monoplane's limited carrying capacity; second, its limited range of vision, and third, its low range of speed. Of the three causes, the first was perhaps the least important, for the monoplane was used exclusively for "gun spotting" and tactical reconnaissance. The limited range of vision was a matter of much concern. For detecting concealed batteries and giving their correct range a fair visual range is a prime necessity. In a monoplane this is difficult to attain on account of the pilot's position back of the wings which puts the observer's position squarely amidst the wings and precludes a proper inspection of the ground below. Small range between the flying and landing speed on a monoplane makes it practically worthless for military purposes on account of the rough ground which constitutes most of the so-called bases near the fronts. Low speed is essential for alighting on such ground.

The deficiencies which the monoplane developed were found to be entirely offset by the qualities possessed by the small tractor biplane—called the Tabloid—which Sopwith in England was the first to evolve, and which is now being largely constructed in this country. The Tabloid is just as light and speedy as the monoplane, but its range of vision and its speed range are such as to meet all military requirements. The Germans overcame some of the monoplane difficulties in a different way. The planes of the machines are "raked" or swept back from the rectilinear so as to form an arrow head—a system that incidentally se-

the aeroplane is about to enter still another advanced phase of its evolution. It is as a means of attack that heavier-than-air navigation stirs the imagination. It is obvious from the experiments now being carried on that aircraft are to be an important, if not decisive, factor in the war hereafter. All the warring nations are building heavier and faster machines.

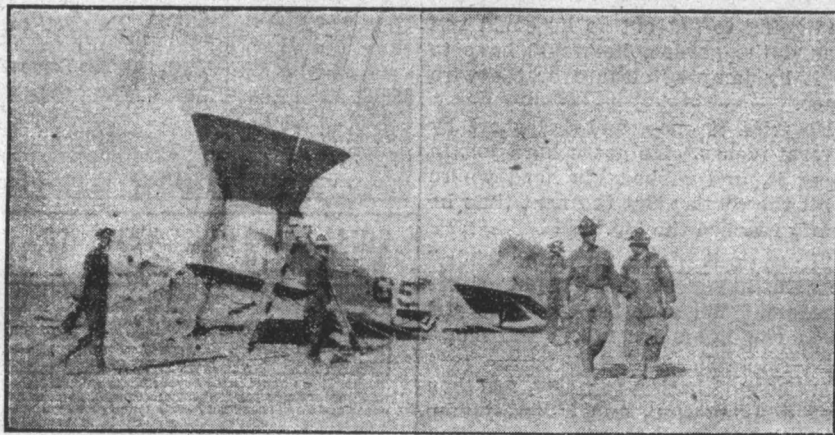
The war was but a few months old when the preconceived opinions about the possibilities of the aeroplane were upset. It was rapidly becoming evident that all the warring nations were lacking a type of aeroplane that would both scout and clear the skies of enemy scouts. When this deficiency was realized the various aeronautical services hastened to remedy it by arming their larger aeroplanes with machine guns, while pilots of fast scouts were equipped with automatics and carbines. This improvised armament proved inadequate for the purpose, although a number of aerial duels ended with the defeat or retreat, or even the destruction, of one of the antagonists. But the destruction when it was brought about was usually created by the setting on fire of the gasoline tank, and not by actually hitting the vital organ of the aeroplane—the motor. This experience had its effect upon the inventive and scientific world back of the battles of the air.

The Germans have developed a monster "aviatik" which is equipped with two engines of 150-horsepower, mounted in separate fuselages, or frame-works, with a propeller in front of each. The armored cabin lies between the two fuselages and carries two rapid-fire guns directed fore and aft. The vital parts are protected by steel armor and it carries fuel for a flight of twenty hours. This gives it a range of over a thousand miles.

The "Canada," recently brought out by Curtiss, is a larger and swifter machine than the "aviatik," which it somewhat resembles in construction and equipment. Its wings have a span of 100 feet and it is believed that it will develop a speed of 100 miles per hour. This type of machine will carry over a ton of bombs aside from the rapid fire guns. It is not at all unlikely that the entrance of these new forces during the next few months will have a signal effect on events. Little has been done of an offensive nature by the aircraft thus far, non-combatants and unfortified cities being the chief sufferers. But with the newer instrument we can easily imagine vast damage being accomplished to forts, naval bases, entrenched positions, and cities.

As an accompaniment of the "Canada" type of monster machine, the British authorities have developed what is known in aeronautical circles as the "mosquito" plane. This is a miniature plane, seating one person, and which has a peculiarity of being capable of developing 150 miles per hour. It is contemplated that these tiny machines will constitute scouting escorts for the monster machines, thus keeping them advised of approaching enemy craft. One of the chief difficulties associated with this very small machine is finding pilots sufficiently efficient to operate them. As may well be imagined, it demands a real expert to handle a machine going through space at the rate of 150 miles per hour, and that with machines only having a wing spread of some twenty odd feet.

The events of the war have pretty conclusively demonstrated that the hopes of the Germans concerning the Zeppelin were entirely too optimistic. Perhaps they suffered from having misinterpreted the aerial experiences of the Moroccan and Balkan campaigns, and for not having fully appreciated the possibilities of the aeroplane as a fighting machine. The Zeppelin has patent drawbacks. Its field of operation is limited to an elevation of 5,000 feet, and at this moderate altitude is ever liable to attack by



On an American Aviation Field.

comprehension. And it is only a little more than a dozen years since the first flight was made by an American. Thus America has given the world two of the instruments which shall decide who shall win the war—the submarine and the aero.

Early in the war Russia furnished one of the most important aeronautical surprises. She brought out a type of machine which will probably be epochal in the history of aviation. Its inventor was a young lieutenant, George Sikorsky. He had been experimenting for a number of years with a large size biplane, and his experiments had been crowned with success only a few months before the outbreak of the war. The first machine that he built was literally an aerobus, for it was capable of carrying ten people. His later models will carry twenty to thirty men. This type of machine has figured considerably in raids over the German positions in Poland. It is now being duplicated in England, where, it is understood, the authorities contemplate manufacturing it in large quantities. Its introduction into the conflict in large numbers will have significant results, for it is capable of carrying a use-

cures for their machines considerable inherent stability. But the range of vision is not improved, and the German monoplane still has this limiting factor.

Cavalry reconnaissance is of the past. Today the aeroplane is the eyes of the army. They spy out and report every movement of the enemy before it is fairly under way, and by the time the attack reaches its objective it finds the position lined with waiting defenders. It is for this reason, chiefly, that we see lined from the North Sea to the Swiss border two huge forces breast to breast and the only means of gaining ground is by the deadly frontal attack, hitherto the anathema in all military textbooks. British and French official accounts bear witness to the efficacy of the German taube. A whirr overhead, a detected group of trenches, a rocket from the taube, and then a rain of Krupp shrapnel. Not that the Germans hold a monopoly of this type of warfare. It is now universal with the warring nations. To the intelligence department the aeroplane has proved invaluable. In the past it has been a scout—the most effective scout of all times—in the future it will be more so. Every indication would suggest that

the nimble aeroplane. The Zeppelin can hover almost stationary over a given spot for the purpose of reconnaissance, and make more exact determination of the disposition of an enemy's force than can the observer in the aeroplane. At the same time its bulk offers a magnificent and steady target for the average gunner. The destruction of several Zeppelins since the beginning of the war is ample proof of this.

If the war continues for a year or two in its present intensity and if the present rate of aeroplane construction in the warring nations doubles or triples—and it is not secret that a goodly number of machines are being turned out by manufacturers here and abroad—the sum total would be far from what is actually needed.

MICHIGAN FURS.

BY A. R. HARDING.

Every one of the eighty-three counties of the state produces more or less fur and some upwards of \$5,000 each year. The average catch throughout the state is something like \$10 per square mile, or from \$500,000 to \$600,000 for the entire state, although it may reach three-quarters of a million dollars, as this fall's prices are high—best skunk being worth around \$4.00, mink \$6.00, red fox \$20, coon \$4.00, otter \$15, beaver \$12, ermine \$1, wolf \$10, muskrat, winter, sixty-five cents, and fall, forty-five cents.

In the lower peninsula are skunk, muskrat, mink, coon, ermine, fox, otter, and a few wild cat and black bear from about forty-four degrees north. Value of the various animals caught is in about the order named. In the upper peninsula mink is the greatest money producer although a good many skunk muskrat and ermine are caught. There are but few coon in that part of the state.

A few silver and cross fox are caught each season in the most northern counties, which means anywhere from \$10 to \$200 or more per skin. A very few marten are caught in the hilly sections just south of Lake Superior. Beaver season has now been open for several seasons and trappers report them quite scarce. Several hundred otter are caught each season as well as scores of timber wolves.

There are also some wild cat; fisher and wolverine are next thing to extinct but black bear are still found in all parts of the upper peninsula. The weasel is rather plentiful here and in winter turns white—then known as ermine in the fur trade. Several thousand are caught each season.

Whether trout-fed mink develops a superior quality of fur or not I am unable to say. At any rate the mink caught in "the trout sections" of the state are the most valuable. Pick up most any raw fur price list quoting Michigan furs and note the prices correspond, with other states in the same latitude, other than the Lake Superior and Northern Michigan mink, although small, are the darkest, most silky, consequently quoted high.

Although of superior fur quality the northern Michigan mink is quite small, seldom much exceeding two pounds in weight, while those from the extreme southern portions may weigh three pounds. In parts of Illinois, Iowa and other northwestern state a four-pound mink is not uncommon but as the fur is coarser and lighter the skin is not worth as much as the "trout-fed" ones from northern Michigan.

Skunk, coon, fox, wolves, and other fur bearers of the state correspond in size with those from other states in the same latitude. The furs secured from the state average high in quality and dealers from all sections are always after the Michigan collections of raw furs.

They have rights who dare maintain them.—Lowell.



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Then we have recently got out another we call our Fashion book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.

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Woman and Her Needs At Home and Elsewhere

Have You Signed the Food Card?

DID you sign the food conservation card? And if you didn't, why didn't you? If you lived so far away from headquarters that no one could reach you, write to Washington to the Food Administration and ask for a card. Sign it and return it, so you can feel you are a part of the fighting machine. Don't stay out in the cold alone, and be sad because you can't do anything to help. You can help by signing a food card, if, note the if, if you abide by its rules and economize in your own kitchen.

The food card asks of you to eat less wheat, meat, sugar and fats, that is, butter, lard, and meat drippings and to burn less coal. To eat instead corn meal, which spoils too quickly for shipping to our allies, vegetables and fruits which, for the same reason, cannot be shipped, to eat more fish and fowl, eat honey and syrups in place of the sugar, and to substitute vegetable oils for the more easily obtained, and easily shipped animal fats.

Our allies and our own army abroad must be fed. To feed them we must ship quantities of wheat, beef, pork and mutton. We can help to increase the supplies available for shipment if we eat only a little less each day. We are not asked to starve, simply to go without that extra bit which we do not need, but which only makes us feel uncomfortable just after we eat, and which ultimately undermines our health by ceasing to "stuff," and at the same time help to keep our allies from starving.

Someone has figured it out that if in Michigan alone each person saved one lump of sugar a day, 165 tons per week would be saved. If each family observed one wheatless day it would mean a saving of 190 tons of flour, while one meatless day would set free more than 1,000,000 pounds of meat, or 509 tons, to be shipped to the nations who are fighting our battles across seas.

The sacrifice on our part is small, when compared with the good we would do, isn't it? And yet, many do not seem to realize why we are asked to do it.

Many arguments have been heard against the conservation days, not the least of which is that we don't save any money by substituting corn for wheat, and fish and fowl for meat. As a matter of fact, I would not be surprised to find, if I sat down to figure it out, that we actually lose money by the conservation days. Fresh fish is selling at a high figure, and smoked and canned fish have soared away out of reach because they can be shipped. Corn meal is at least seven cents a pound, and oat meal eight cents. But it is not a question of saving money for ourselves. We are asked to save food to keep others from starving.

The wheatless and meatless days involve more work, too. You can't buy johnny cake and corn muffins from your baker or grocer. You've got to make them. And it takes more time to get up and make these things than it does to cut off of the wheat loaf left over from the last baking. You see, conservation days means a very active part in war work on the part of the housekeeper, and in many families they mean considerable arguing to induce everyone in the family to keep them. Our American families are composed of individualists, most of them without a

real head. But present indications are that we've got to come to it whether we like it or not, so let's all join hands and go to it willingly.

Just as an addendum on slackers, wouldn't you think that every American woman, supposedly intelligent, who lives in reach of daily papers, clubs and free mail delivery would have heard of this last food drive? Wouldn't you think the publicity given it would have reached her through some channel, even if she never read a paper herself? Wouldn't you think in these stirring times that every woman with red blood in her veins would be awake to what is going on?

And yet on our city, the second largest in Michigan, worse yet, in our own street, a street inhabited mainly by professional people who live in modern, well-furnished homes, in this street only six blocks long, there were three women who had never even heard of the food drive. The woman who canvassed the street told me so when she stopped for my signature.

One could understand such a condition among foreign women who cannot read English, or in out-lying districts remote from mails. But for a live American woman in a prosperous city to know absolutely nothing about what her country needs from her is nothing short of criminal.

DEBORAH.

FLOUR ECONOMY.

During these strenuous times we shall do well not only to adopt the wheat substitutes recommended by Mr. Hoover, but also to conserve every bit of flour that comes in our kitchens.

"A woman can throw out with a teaspoon faster than a man can bring in with a shovel," is a maxim my mother taught me with my first lessons in housekeeping. It has proven a valuable aid in my own housekeeping experience and I find it easy now to practice economies which would seem positively stingy in ordinary times, but which under present circumstances savor of patriotism.

"We should save every bit of flour for human food. In fact, it seems almost criminal to do otherwise when our nation needs it to help win the war. This is how I actually do this and have for the past three years, during which time I am positive my economy has amounted to several sacks of flour. In my cabinet I keep two covered cans. Into one I put all left-over pieces of cake and cookies (not including those left at table), and all crumbs of either scraped from baking tins. These make delicious "bread puddings" with little, if any, additional sugar.

Into the other can go all the bread crumbs from the cutting board and particles of dough scraped from the mixing pan. These, with all stale breads, brown bread, corn bread, gems, biscuits, etc., which I do not wish to use in other ways, go into griddle cakes. If these breads accumulate in any quantity they need to be dried thoroughly to insure their keeping until wanted.

When I plan a griddle-cake breakfast I put some of these crumbs and stale breads soaking the night before in sour milk or buttermilk, allowing about one cup of liquid for each person. In the morning I mash all lumps, add salt, soda, a bit of sugar, and flour or corn

meal to make of the right consistency. These griddle cakes possess the advantage of having a large portion of their flour previously baked which I believe renders them more digestible.

Very few baking failures need be thrown away if their ingredients be considered. Heavy or sour bread, even, is not beyond being reclaimed. Either can be dried and stored safely for use as needed. I have used sour bread in griddle cakes with perfectly good results by using a little additional soda in the batter. One time a loaf of brown bread was a failure because cornstarch had been mistaken for soda. Griddle cakes made with some of this as a foundation were even complimented by a guest.

These are rigid economies, I will admit, but they are a long way ahead of starvation for ourselves, or of denying wheat to our allies because we have not the gumption to save.

A PLEA FOR BETTER FARM HOUSE EQUIPMENT.

BY MARY M. ALLEN.

After an absence of fifteen years from my native state, I was much surprised to see the improvements that had been made in the farms. Large barns, silos, tidy wire fences, and well kept lawns were much in evidence. Remarking on the changes, to an old furniture and undertaking dealer, he told me that he did not think the equipment of farm houses had kept up with those outside. He said a few years previous he had taken his young son into partnership with him and soon after a drummer called on them, offering a labor-saving kitchen article. His son became enthused with the idea of offering it to farmers' wives. Notwithstanding the fact that land in that vicinity sold at from \$100 to \$150 an acre, and the farm equipment included all the latest and best machinery, he failed to make a single sale. This particular article would have saved the farmer's wife miles of steps and hours of time, yet he couldn't find a farmer who could afford it.

If I were free to choose an equipment for my farm home from the points of utility and economical value, I would put first a good large kitchen range with water coil attached to a pressure system of water. Nearly every farm has a small dairy in connection, and to keep clean sanitary dairy dishes one must have an abundance of hot water. One can heat a thirty-gallon tank of water to near the boiling point, using out of it while doing a forenoon's work, have a tank full left and have the top of the range free for cooking.

Next to hot and cold water, I would put a furnace. A well known domestic science writer in a series of articles advising a newly wedded couple on the equipment of a farm house condemned the furnace and advocated the use of stoves—four in number, I think—for heating purposes. Now a farm house must of necessity be heated. When John and the hired man are busy during the day caring for stabled stock, grinding feed, getting up the summer's wood, and getting the ice supply, they have no time to care for fires. This duty devolves upon the wife, and no woman can keep two or three stoves going, carry in the fuel, carry out the ashes and do justice to herself. Our house has a large furnace of reliable make, with hot air pipes to the first floor and registers opening into rooms

above. These registers opening to upstairs rooms are closed during the day and opened in the evening to air out rooms above. Twice a day the furnace is attended to by the man of the house and the heat problem is solved.

Another step-saver is a small elevator extending from the pantry to the cellar below. Each morning, vegetables, butter and things needed from the cellar for the day are put on it and there is no necessity to go to the cellar until the following day.

Innumerable labor-saving devices for the farmer's wife are found in the house furnishing establishments, among which are oil stoves and kitchen cabinets, at which one can do a forenoon's baking without getting off a stool; power washing machines and wringers; vacuum cleaners, electric, acetylene and gasoline irons; bread and cake mixers—all of which are efficient, lasting and inexpensive. Yet, how very very few of these things are found in farm homes!

Economists have reasoned that the purchasing power of the farm should be governed by the labor income. After deducting interest on investment, the balance is reckoned as the labor income. Now the labor the farmer's wife performs on the farm is usually regarded as an asset. Thus it has a purchasing power. There has been a strong tendency on the part of farmers to over-equip. Scarcity of labor has been the cause of this. We do not mean to condemn the sort of equipment that is necessary to proper seeding, cultivation and harvesting of the crops. All this must be done in the proper manner and at the proper time if the farm is to yield a profit. Machine labor has been obliged to take the place of man labor.

We do not sympathize at all with the silly young wife, whose husband is paying for a farm, who buys expensive rugs and leather upholstered furniture because someone in her neighborhood, who had their farm given them, has these things. Such a woman is incompetent for the job of being a farmer's wife. But when Tom buys seventy-five cents worth of tobacco a week and Jennie has to stay home from the Farmers' Club because she hasn't any shoes to wear; and when Dick owns a \$600 team, his wife at the same time draws the soft water with a rope; and when Harry buys a new riding cultivator every year, because the one he bought last year stood out doors until the snow flew, while his wife does the washing for a family of six with a washboard, one tub and a leaky boiler; and when Al buys a \$1,000 car when the kitchen roof leaks, it looks as if the labor of a woman on the farm was rated rather low.

There is no other class of women who contribute so much to the financial success of their husbands as the farmers' wives. They toil early and late, with no thought of self. Just as the telephone and automobile have eliminated isolation from their lives, so will a well-equipped house transform the kitchen from a sweatshop to a laboratory, change housework from drudgery to domestic science, and go a long, long way towards solving the problem of rural sociology.

GRAPE CRYSTALLIZATION.

M. A. L.

In the issue of October 27, Mrs. J. W. N., Holly, asks the cause and cure of crystal formations in grape jelly. Three authorities were quoted, one giving the cause as too much sugar; a second, over-ripe fruit; a third, overlong cooking. More recent advices from the United States Department of Agriculture shows that the real reason is too much acid in the fruit. The department advises the following methods of avoiding crystallization, which, it says, should by all means be avoided if possible.

1. Extract the juice in the afternoon

and allow it to stand over night in shallow pans without fermentation. The juice cools readily and crystals form over the top of the juice and against the sides of the pan. In the morning run it through a flannel bag to remove the crystals. Be sure the juice does not begin to ferment.

2. Can the juice while hot, and make the jelly in the winter after the crystals have formed in the jars.

3. Use with the grape juice a small amount of orange pectin or apple juice. This is the best method. The department uses one-half pint of orange pectin and three-fourths of a quart of sugar to a quart of grape juice. The orange pectin is made as follows: Run the white part of orange peel through the food chopper and then weigh it. For each fourth pound of peel allow a half pint of water and two tablespoons of lemon juice. Mix thoroughly and let stand one hour. Add one and one-fourth pints of water to each four ounces of peel. Let stand for another hour, boil ten minutes, let stand till cool. Strain through a flannel bag, pressing to obtain all the juice, then re-strain through a clean flannel bag. By double running the white portion of the peel, twenty-four pints of pectin are obtained from three dozen oranges.

Three things tend to crystallization. The greener the fruit used, the greater the tendency to crystallization; the higher the acid content in relation to sugar content of the grape variety used, the greater the tendency to crystallization; the smaller the proportion of sugar added to the juice the greater the tendency to crystallization.

CONSERVATION DAY SUGGESTIONS.

Meatless Day.—Breakfast, French toast; dinner, muskrat, (recipe requested); supper, corn chowder.

Wheatless Day.—Breakfast, fried corn meal mush with syrup or strained honey; dinner, rye muffins, supper, crisp corn cakes.

French toast, or fried bread, is easily and quickly made. In most households it is a well-known breakfast dish, and is delicious if necessity, or parsimony, does not cut the number of eggs and substitute too much milk.

Game, not being counted with the meat we must eschew on meatless days, there is no objection to a game dinner or supper. A reader asks how to cook muskrat, and an old trapper contributes the following:

"After the animal is cleaned and washed, trim off all fat, being careful to leave none. Make a bread dressing, seasoning with a little chopped onion and celery and stuff the muskrat as you would a fowl. A whole or a half an apple, may be substituted for part of the stuffing. Salt and pepper, and sprinkle well with flour. Lay on a few strips of salt fat pork and bake about an hour.

Corn Chowder.—One can of corn or one pint of fresh corn grated, four cups of skim-milk, one teaspoon salt, four ounces of crackers. Fry the onion in two tablespoons of vegetable oil until it is a delicate brown. Add the corn and potatoes, cover with water and cook until soft. Add the milk, in which the crackers have been soaking, and the salt, and bring again to a boil. Serve piping hot.

Rye Muffins.—Sift together two cups of rye flour, one teaspoon of salt and three level teaspoons of baking powder. Beat up one egg, add one cup of milk and combine with dry ingredients. Add one tablespoon of molasses and one tablespoon of melted fat. Bake in hot, well-greased muffin tins twenty-five minutes. If not as stiff as usual for muffins, add more flour.

If your stockings wear first at the heel, put a piece of chamolais inside of the heel of your shoe. This will prevent friction on the stocking and greatly prolong its wear.—M. A. P.

There Are Others But Consider These Facts—

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Last month, we sold nine hundred in a district where these plants are best known and most thickly distributed.

To build this reputation, the Pilot had to meet competition from all the rival light plants in the field. Literally, thousands of tests and comparisons had to show the Pilot's superiority over and over again—year in and year out.

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Increasing Sales by Advertising

By CLINTON GANO

THE past year has seen the first advertising campaign on cranberries. Like the campaigns on oranges, raisins, and apples, the cranberry campaign was engineered by a farmers' association; and, also, like the others, it has proved successful, witnessed by the fact that a doubled appropriation for advertising the coming year had actually been made and steps were being taken to enlarge the campaign, when disastrous frosts suddenly occurred, reduced the crop about fifty per cent, and made the advertising increase inadvisable.

The cranberry growers of the United States, concentrated mainly in three states where boggy sections favor the industry, have been organized for perhaps ten years. State associations were formed independently in Massachusetts, New Jersey and Wisconsin, and later their members saw the wisdom of federating and forming the American Cranberry Exchange. The Exchange now has offices in New York and Chicago. Its purposes are stated to be those of "securing higher standards of grading and packing and direct shipments from the grower to the jobber; also for the purpose of advertising, selling, and distributing at actual expense, Cape Cod, New Jersey, and Wisconsin cranberries." Not all the growers of these states are members, some remaining outside through their own choice—but the thousand or so farmers within the Exchange produce about sixty per cent of the country's cranberry crop.

That production has been increasing much faster than demand led to the consideration of advertising. In 1901 the total production was 290,000 barrels, while in 1916 the advance estimates were for 750,000 barrels, though unfavorable weather reduced the yield to some extent. Frequent market gluts due to the large production, combined with the very small per capita consumption of the berries, persuaded the Exchange that consumption could be increased by advertising.

Try-out in Chicago.

A little over a year ago the first experiment was undertaken, an assessment per barrel being made on all growers which should total about \$25,000 for advertising. As Wisconsin berries rarely go east, whereas, both eastern groups are accustomed to market in Chicago, Chicago was selected for the try-out campaign. Newspapers, street car cards, outdoor displays, and display cards for stores and restaurants, were the mediums used.

The campaign followed the lead of other fruit growers' associations which have been successful with advertising.

A brand name was adopted, and new ways of serving them furnished the primary subject matter of the advertisements. An attractive folder in colors giving ten ways to eat more cranberries, was offered to housewives through advertising and was also distributed by grocers. Some of the newspaper advertisements featured selected ways in which cranberries may be used, with a view to whetting the public appetite. Cranberry jelly, cranberry conserve, cranberry sauce roll, cranberry ice, cranberry blanc mange, cranberry mold, and other suggestions were new conceptions to thousands of alert Chicago housewives.

The statement that "cranberry sauce is just as good with roast beef, lamb, or pork, as it is with turkey and chicken, its tartness counteracting the cloying richness of fatty meats," was another idea that no doubt helped in securing the splendid results.

Some of the advertising matter made a direct appeal to economy, both of time and money, stating that cranberries are inexpensive, that there is no waste of material, no peeling, no cores,

and that through making the cheaper cuts of meat more palatable, they permit of savings in meat bills.

To these reason-why arguments were added the strong appeal of illustrations in appetizing colors. Many of the street car cards, outdoor painted boards, and even newspaper advertisements depended mainly upon appetizing illustrations for their effectiveness, carrying practically no text beyond the advertising slogan. The outdoor boards and car cards have been of unusual eye-attracting value through their broad, yet tasteful use of bright color.

Brand Name on Barrel.

The consumer has been told to ask the grocer for the association brand, and as the barrels are attractively branded and practically all grocers display the barrels and sell direct from them, the danger of substitution of an inferior brand is slight. There is, of course, no opportunity to brand the berries as oranges are branded, by means of printed wrappers. The Exchange is, however, considering the question of packing in pound packages bearing the trade-name.

Guaranteed quality, standard goodness, of these berries, has of course, been a point emphasized. And it is an essential prerequisite to successful advertising that quality be assured. One-time sales resulting in dissatisfied customers will not pay the cost of advertising.

Quality was, of course, assured long before the advertising was undertaken. One of the primary purposes of the state associations was to assure quality by careful storing and grading of all barrels under the direction of a corps of inspectors paid for their services. The discrimination between different grades long in vogue is evidenced by a booklet of the New England Cranberry Sales Company, (the Cape Cod organization), issued in 1912 or 1913 and mentioning thirty-three as-

signed brands of Cape Cod cranberries, varying in size, shape, color, and time of shipment.

Chicago Sales Jump Seventy-six Per Cent.

The campaign has extended throughout the year, though it was strongest during the fall holiday season. A report made in April by Manager A. U. Chaney, of the Exchange showed that the volume of business in cranberries done by Chicago retailers had increased approximately seventy-six per cent since the campaign began. Sales in carload lots in the Chicago market increased approximately five to seven per cent. It is believed that though these first results in themselves justify the expenditure of \$23,000, the amount actually invested in the advertising, the result has been to make Chicago a permanently better cranberry market. The recipe folder, widely distributed, has undoubtedly found a permanent place among the recipe booklets in thousands of homes, while many people who regarded cranberries as purely a holiday sauce—have come to view them as a food staple.

As was stated, the Exchange had actually appropriated \$50,000 for increasing the campaign in 1917-18, when disastrous frosts occurred and reduced the expected crop, which was already estimated 90,000 barrels short of last year's crop, about fifty per cent. This means a considerable under-supply, and extensive advertising would therefore be an unjustifiable expense. The Exchange is, however, continuing its Chicago campaign on a small scale and is retaining the new fund with the expectation of going deeper into advertising than ever as soon as the supply will justify it. It will probably be extended to New York City, first, and gradually expanded to include other important markets.

POTATOES TO SELL BY HUNDRED.

Among the many movements to simplify the marketing of farm crops the action recently taken by the United States Food Commission to compel all

commission houses to quote potatoes only by the pound or hundredweight, will do much toward making the quotations on this product intelligent to the layman. Through the recent order of the Food Administration requiring all commission houses to be licensed, it became possible for the government agents to inaugurate and enforce the use of a standard unit in the buying and selling of this important farm crop. It is now illegal for these licensed houses to quote potatoes other than by the pound, or hundred weight.

Nearly all important potato growing sections of the country, as well as many of the large consuming centers have a variety of units which require a mathematician of some ability to reduce them to a common term so that quotations can be intelligently compared. Michigan potatoes, for instance, are quoted in Detroit by the bushel, in Chicago by the hundred pounds, in Cleveland by ten-peck quantities, in New York per 180-pound bag and in Boston so much per eleven-peck bag.

The new order will do away with these various units by making the hundredweight standard for the whole country and incidentally eliminate the confusion in the mind of the average, but financially interested, producer to the end that shrewd dealers and speculators will have less opportunity of juggling figures to their advantage.

COOPERATIVE POULTRY MARKETING.

To enable farmers to market their poultry for cash at the highest possible price and with the least expense, the Saskatchewan Department of Agriculture has arranged this fall to again operate cooperative poultry killing and marketing stations. These are open at the season when farmers usually desire to turn off the old hens and unprofitable fowls, from November 5 to December 8. Chickens, turkeys, ducks and geese will be handled, and advance payments of from twelve to eighteen cents a pound will be made, according to the grade and quality of the poultry. If market prices are low at the time the poultry is received, it will be placed in cold storage until it can be sold to advantage. When all the birds have been disposed of, a final payment will be made to the farmers, who will receive the full amount, less the cost of transportation, killing, boxes and storage charges.

Last year 59,422 pounds of poultry were handled in this manner, as against 27,038 pounds in 1915. It is expected that there will be the same increase for 1917, as there is a great demand throughout Canadian markets for dressed poultry during this time, which is either sold locally or shipped into the United States, as there is no tariff at present on poultry products.

Granges and other cooperative organizations may well pattern after the lesson which these Canadian farmers have set forth, for there is nothing more difficult to sell at a satisfactory price at present than poultry in the average farming community. Dealers buy the farmer's poultry at a low price on the pretense that the market is flooded, although it is seldom flooded enough to cause the dealer to sell for a low price to consumers. If the farmers were linked together in poultry distribution they would be in a better position to demand and secure a profitable price.

New York.

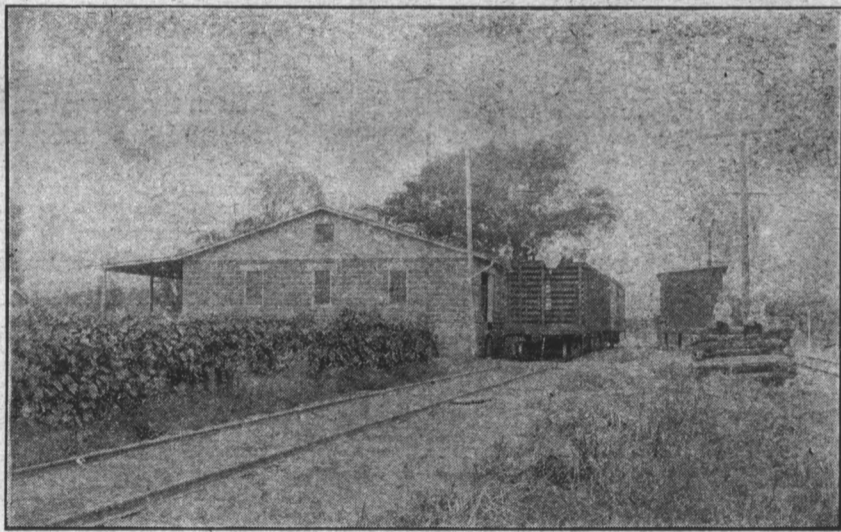
E. W. GAGE.

SOMETHING FOR THE BOYS AND GIRLS.

It's fun to boost for the Michigan Farmer; besides we will pay you well to do it. Earn some Christmas money taking Michigan Farmer subscriptions. It's something any boy or girl can do and enjoy. Write us and we will tell you about our Christmas money subscription plan.

THE MICHIGAN FARMER, Detroit.

Packing House of Benton Center Ass'n



THE Benton Center Fruit Association was formed early in 1917 by a few progressive farmers living to the east of Benton Harbor. They organized themselves into a legal association for the purpose of getting their fruits marketed at the least possible expense, not for the purpose of entering the commission business with the hopes of getting rich quick. These farmers are primarily producers of fruit. Fruit growing is their business, they understand it from the bottom up, they propose to continue as fruit growers. They enjoy the work and can accumulate wealth. Therefore their association is for the purpose of supplementing their farming activities, for the purpose of most economically getting their products on the market. The association was incorporated as a non-pecuniary profit organization. There

is no capital stock and consequently no stockholders. Just members. There are no profits. The fruit of the members is received, graded, packed and marketed and the members pay the cost of the service out of the gross receipts. A cement block packing house was built during the past summer for the use of the association members. The packing house is by the side of the interurban line running from Benton Harbor to Watervliet. The supplies needed by the members can be bought in carload lots and delivered at the packing house and the products to be marketed are shipped from the packing house after being put in the proper condition and assembled into carload lots. Beneath the packing room is a basement which is used for the manufacture and storage of the necessary fruit packages.

Grange.

THE LOCAL GRANGE AND THE COUNTY AGENT.

(Continued from last week).

The county agent needs the Grange as truly as the county needs the agent. He needs it because through it he may usually come in touch with the best element in the community thereby increasing his influence. He needs the Grange, because he can get into its lecturer's hour and give valuable suggestions that will help him in his work while they help the neighborhood. He needs it in many instances because he is, with all his college training, as yet lacking in that kind of wisdom which comes in a large way by contact with older men whose hard common sense has made them leaders in their respective communities. Any young man who has taken a county agent job with the notion that the most and the best of college training to be had anywhere can compensate for the lack of that something that has enabled successful farmers whom he meets in many a Grange, to clear up farms from out a wilderness of great trees, or of blackened stumps and dense undergrowth, rear large families, get out of debt, and in short make good all around, is not fit for his work.

But on the other hand, many of these "self-made" men are far too proud of the job. They talk too much about their success, and are too slow to get into line with movements that make for the good of rural communities. Yes, they know that the young people are leaving the farm, they know how difficult is the problem of farm labor, out of doors and in the house, too, they have seen the little country school getting smaller and smaller, the country church declining in attendance and influence, but somehow they cannot seem to see that in this county agent movement is an opportunity to again put the average country district "on the map."

If every local Grange in counties where the county agent plan is in operation would get busy and make it a large part of its mission to increase his influence and his usefulness, not waiting for him, but rather going out after him, and cooperating with him, the Grange would find a new field of usefulness and the cause of "Rural Betterment" would receive an impetus that would tell in the lives of country people in a very helpful way.

W. F. TAYLOR.

AMONG THE LIVE GRANGES.

Mecosta Pomona met with Forest Grange at their hall in Green township November 7. The forenoon was given over to fifth degree work. After the morning session, Forest range served a chicken dinner. Plates were laid for 52. The afternoon program opened with Song No. 34 in Grange Melodies, and a Thanksgiving prayer by the chaplain, Mrs. Kokte. Then the following program was given, Recitation, "Our Car," Clarence Rood; duet, "When we Get on the Job," Miss Florence Schoellkopf and Miss Lizzie Swartz. The entire company joined in the chorus of this patriotic selection. Recitation, "The Man Behind the Plow," Mrs. Wilson; solo, "Our Volunteers," Mrs. Wilson. Mrs. Wilson, the Pomona lecturer had arranged for other numbers on the program but was disappointed at the last moment. Without apology she filled these places herself to the enjoyment of all present. The Grange was very fortunate in securing the speakers for the day, Mr. Kiefer and Mrs. Dora Stockman. Mr. Kiefer's talk for the afternoon was "The Ideal Farm Organization." Mr. Kiefer handled his subject in a way which interested and pleased his audience. Mrs. Stockman in her bright, interesting way, touched upon various vital questions of the hour. Someone mentioned "farm agent" and a heated discussion followed.

Farmers' Clubs

Associational Motto:

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

Associational Sentiment:

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

THE QUARTER CENTURY MEETING.

As we go to press the delegates are gathering for the quarter century celebration of the organization of the Michigan State Association of Farmers' Clubs. An excellent program is anticipated. A report of the meeting will appear in succeeding issues.

CLUB DISCUSSIONS.

College Education for Girls.—The November session of the China Farmers' Club convened at the home of Mr. and Mrs. Peter Distlerath in China township. After a chicken dinner, the meeting was called to order by President John Reynolds and opened by singing America. Mrs. George Bugge read an excellent paper on the subject, "Does a College Education Unfit a Girl for Farm Life?" This was thoroughly discussed by a number of the ladies present, and the ideas expressed showed that it was the general opinion that a college education for a girl constituted the best possible preparation for farm life.

Drainage is Important.—"Which is of the Most Importance, Fertility or Tillage?" was the next question discussed by W. D. Simons. He reviewed the essentials of good farming in that community and stated that the limiting factor of their agriculture was lack of drainage. Peter Distlerath emphasized Mr. Simons' statements by relating his successful experience on land that was tile drained last year. Other members present also commented on the subject, and their remarks indicated that the question of tile drainage is now considered to be a very important one in that community.

Home Demonstration Work.—In addition to excellent local talent, the meeting was especially fortunate in having Miss Clara Waldron, the St. Clair County Home Demonstration Agent, and Miss Katherine Sleneau, of the Port Huron Library, present. Miss Waldron gave a brief history of the home demonstration movement, and stated that probably one of the leading features of the work this winter would be along the line of food conservation. She mentioned that it was the purpose of the government through the Women County Agents to assist the people in substituting various foods for those needed by the armies and our allies across the sea. She brought out the fact also, that one of the important duties of the Home Demonstration Agent would be to carry successful methods that the women in one community have worked out themselves to other localities. The China people have always been loyal supporters of the County Agricultural Agent, and the interest they showed in Miss Waldron's remarks indicated that this new movement for the benefit of the women of the county would receive their hearty welcome.

The County Library.—Miss Katherine Sleneau was next called upon, and her talk on the "County Library" was one of the best numbers of the day. She reviewed carefully the history of the movement, and mentioned that St. Clair county was one of the first in the state to adopt the system. The speaker's extended experience and profound interest in the work enabled her to outline the benefits to be derived from the county library in a way that aroused a very strong interest in the movement. During the course of her remarks, she mentioned that the county by spending \$1,000 was obtaining the benefits of the city library which probably represented a total cost to the city of Port Huron of approximately \$100,000. A general discussion of the subject followed and tentative plans were made for getting the books to and from the library.

The meeting was the occasion also of the regular annual election and all of the occupants of the different offices during the past year were unanimously reelected as follows: President, John Reynolds; secretary, Mrs. Carrie Hartlein; treasurer, Edwin Rankin; corresponding secretary Mrs. John Reynolds; program committee, Mr. and Mrs. Edwin Rankin, Mr. and Mrs. Ernst Clark, Mr. and Mrs. Frank Layle, and Mr. and Mrs. Fred Allington.

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The course is under direct supervision of a Curtiss expert who is an authority on aero-motors and aeroplanes as well as hydros and flying boats. Weeks have been spent in perfecting this course which is entirely separate from our Automobile course. Our plans are complete. They must be in perfect running condition. Aeroplanes will win the war. They are the eyes of the army. The Government to care for the aeroplanes and aeroplane motors. Men are needed in the aeroplane factories. Trained Aero-motor mechanics will get the preference.

Get Into This New Industry Now

The men who become trained Aeroplane Motor Mechanics now will be big men in the aeroplane business. Only a short time ago the automobile business was starting, the men who got in then are now the Big Men. The Aeroplane business is in its infancy. The war will give it a big start. The men who train now will be the Big Men in the near future. The work is extremely interesting and will grow in interest as the business develops. Aeroplanes and Seaplanes will be used for every purpose. Trained Aero-motor mechanics will always be in big demand. Don't hesitate; get into this new industry now. The farsighted, keen fellows who enter at once will reap the big benefits.

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Fill in the coupons; get literature on aeroplane motor mechanics, "Auto School News" and New 28-Page Illustrated Catalog. All absolutely free. Or better still, jump on the train, as hundreds have done, and come to the "Heart of the Automobile Industry," and learn right. We have no branches. Write or come direct to this school.

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Walnut Alley big type P. C. boars that represent the best breeding of Iowa at 1/2 their value for the next 10 days. (Two that are extra.) A. D. GREGORY, Ionia, Mich.

LARGE STRAIN P. C. nothing for sale until after H. O. SWARTZ, Schoolcraft, Mich.

Big type P. C. Boars and Gifts of Peter Mouw breeding. He sold 164 head Sept. 21 for \$32,635 average \$38.3 per head. C. E. GARNANT, Eaton Rapids, Mich.

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Shropshires a few choice Ram lambs; one three yrs. old. 10 ewes. DAN BOOHER, R. 4, Ewart, Mich.

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I offer for remainder of season a limited number of strong vigorous

Registered Shropshire Ram Lambs good size well covered and ready for service. C. LEMEN, Dexter, Mich.

CHOICE BRED EWES 250 left, 1 to 4 years old, bred to good Shropshire rams. \$13 to \$16 each for 10 or more, if taken soon. ALMOND B. CHAPMAN, So. Rockwood, Mich.

Registered Oxford Down Ram lambs for sale. OLMSTED and J. SPAANS, Muir, Mich.

Registered Oxford Ram and Ram lambs, Also Berkshire hogs. CHASE STOCK FARM, R. 1, Marlette, Mich.

FOR SALE 100 Good Breeding Ewes bred to good Shropshire bucks, weighing over 200 lbs. Will sell in small flocks if desired.

Hillcrest Farm, Kalamazoo, Mich.

EWES: Rambouillets and Hampshires for sale. A. A. WOOD & SON, Salsburg, Mich.

RAMS and three choice young, "B" type, registered, delaine merino ewes, at bargain. S. H. SANDERS, R. 2, Ashtabula, Ohio.

Western ewes bred to registered rams, 100 light western lambs, O. K. for feeders. BARNARD SHEEP RANCH, R. 5, Clare, Mich.

HORSES

Eleven (11) Head of Registered Percherons For Sale.

Stallions, brood mares, colts and fillies. A fine lot, big boned, clean limbed, strait gaited, drafty show-horse type.

I will sell cheap for cash or will give time to reliable parties
Dr. C. L. Barber, Lansing, Mich.

REGISTERED PERCHERON Mares and Stallions priced to sell. Inspection invited. L. C. HUNT, EATON RAPIDS, MICH.

LOESER BROS.

Belgian and Percheron Stallions for sale that will pass the Michigan Stallion Inspection. Have a few mares of both breeds. **Shorthorn Cattle**, we offer a choice lot of bulls and females. Write us.

LIGONIER INDIANA.

PERCHERON DISPERSAL

The entire herd of the late A. A. Palmer will be closed out; 25 pure bred percheron mares \$200 to \$400 except two; also young stallions

PALMER BROS., Belding Mich.

Stallions for sale. One Imported Percheron Stallion 7 yrs. old, weight 2000 lbs., sound and a sure breeder, a fine individual, a show horse will sell so he will pay for himself the first season. Also have some Belgians for sale address OTIS BAKER, Ligonier, Ind.

Have Rented my farm will close out my Percheron horses cheap. Stallions and mares. E. J. ALDRICH, Tekonsha, Mich.

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmhurst, Michigan.

Percheron Stallion, 3 year old beautiful style and high bred, registered. For sale. E. P. KINNEY, Lansing, Mich.

SHETLAND PONIES

200 head to select from. Special prices on colts for August and September. Write Dept. E. The SHADSIDE Farms, North Benton, Ohio.

Shetland Pony 3-year-old, broke, \$100, 2-year-old \$75. Thoroughbred Holstein bull calf \$50 if taken at once. R. G. KESLER, Cassopolis, Mich.

Additional Stock Ads on Pages 551-552-555

Markets.

GRAINS AND SEEDS

December 4, 1917.

WHEAT.—The movement of this cereal is slow, while the demand is as active as ever. Orders for flour are large; however, present stocks are sufficient to supply all the immediate needs. A year ago No. 2 red wheat sold on the local market at \$1.75½ per bushel. Present prices are No. 2 red wheat \$2.17; No. 2 mixed \$2.15; No. 2 white \$2.15.

CORN.—An improvement in quality of corn now coming to market has proven a bullish factor, through encouraging a freer movement of the cereal. In the northern markets, however, a very large per cent of the offerings is still poor and meets with a slow demand. Government orders are making more cars available for moving both corn and oats. This will have a tendency to hold down values. The weather has been favorable, and increased deliveries are anticipated. A year ago No. 3 mixed corn sold on the local market at 93c per bushel. Last week's Detroit quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	2.09	2.10
Thursday	2.10	2.11
Friday	2.10	2.11
Saturday	2.10	2.11
Monday	2.10	2.11
Tuesday	2.10	2.11

Chicago.—December \$1.23½; January \$1.20½; May \$1.18½.

OATS.—The heavy buying of this cereal continues. There has been a decrease in the export business the past few days, but the demand from millers has been sufficient to absorb everything in sight. The movement from farms continues slow. A year ago standard oats were quoted at 58c per bushel. Last week's Detroit quotations were:

	No. 3 Standard.	No. 3 White.
Wednesday	77	76½
Thursday	77	76½
Friday	76½	76
Saturday	76	75½
Monday	77	76½
Tuesday	77½	77

Chicago.—December 73½c per bu; May 71½c.

RYE.—Market is firm with an improved domestic demand. Cash No. 2 is now quoted at \$1.82 per bushel.

BEANS.—There is a small increase in the volume of beans being handled. At Detroit cash beans are quoted at \$13.25 per cwt. The Chicago market rules steady with demand moderate. Michigan pea beans, hand-picked, are quoted at \$13.75@14 per cwt; red kidneys \$16. Greenville dealers are quoting at \$12.50 per cwt.

SEEDS.—Prime red clover, cash and March \$16; alsike \$14.20; timothy at \$3.65 per bushel.

FLOUR AND FEEDS

FLOUR.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$11.30@11.50; seconds \$10.85@11; straight \$10.50@10.75; spring patent \$11.35@11.60; rye flour \$11@11.20 per bbl.

FEED.—In 100-lb. sacks jobbing lots are: Bran \$42; standard middlings \$44; fine middlings \$46; cracked corn \$89; coarse corn meal \$77; corn and oat chop \$55@60 per ton.

HAY.—In carlots at Detroit: No. 1 timothy \$24.50@25; standard timothy \$23.50@24; No. 2 timothy \$22.50@23; light mixed, \$23@24; No. 1 clover \$19@20 per ton.

Pittsburg.—No. 1 timothy \$28@29; No. 2 timothy \$26@27; No. 1 light mixed \$27@28; No. 1 clover mixed \$29@30; No. 1 clover \$29@30 per ton.

DAIRY PRODUCTS

BUTTER.—Butter has not been coming to market freely and stocks are small. Fresh creamery firsts 42½@43c; fresh creamery extras 44½@45c.

Chicago.—The market holds firm and 1c higher for the fancy fresh makes, with under-grades easy. Creamery extras 47c; extra firsts 45@46c per lb; packing stock 31c.

CHEESE.—Michigan flats 24@25c a lb; New York flats 26c; brick 27½@28c; long horns 26½@27c; Michigan daisies 24¼c; Wisconsin daisies 25¼c; Wisconsin double daisies 25¼c; domestic Swiss 35@40c for prime to fancy; Limburger 28½@29c.

He is great who confers the most benefits.—Emerson.

POULTRY PRODUCTS

POULTRY.—(Live).—The market is over supplied and prices are lower. Buyers are taking chickens, ducks and geese, but there is no demand for turkeys. Best spring chickens 20@21c; hens 18@20c; ducks 24@25c; geese 19@20c; turkeys 22@26c.

Chicago.—(Live).—Demand fair and prices lower. Fowls 16c; spring chickens 18½c; ducks 18@19½c; geese 17@17½c; turkeys, good 20c. (Dressed).—Weather conditions are unfavorable for the handling of dressed poultry.

EGGS.—Fresh eggs are steady. Fresh firsts 42@46c per dozen.

Chicago.—Receipts of fresh eggs show an increase and prices are 1c lower. Fresh Michigan firsts sell for 46@47c; ordinary firsts 42@45c; miscellaneous lots, cases included 42@47c.

FRUITS—VEGETABLES

POTATOES.—Markets.—There were 28 cars of potatoes on the Detroit market Monday morning. Supplies were adequate. Round whites, sacked, sold at \$2@2.10 per cwt. At Cleveland the price for the same grade of Michigan stock is \$2.25; at New York \$2.10@2.32 in bulk; at Pittsburgh \$1.90@2.2, field frosted \$1.80@1.90 in bulk; at Cincinnati \$1.85 for frosted stock.

Greenville, Mich., farmers are receiving from \$1.60@1.65 per cwt. from wagons. Wisconsin farmers are securing \$1.25@1.30 for firsts and 75@80c for seconds. In Minnesota good stock is bringing \$1.50. Green Mountains are selling in Maine at \$1.82, seed stock \$1.97 for Cobblers and \$2.12 for Spaulding Rose. In New York state round whites best bring \$2.05@2.10 sacked, while field frosted bring \$1.60@1.70.

ONIONS.—Yellow globes are selling in jobbing lots in Detroit at \$2.50@3; in New York \$2.50@2.65; in Cleveland \$2.25@2.50; Pittsburgh \$2.40; Cincinnati \$2@2.50; in Chicago \$2@2.25 per 100-lb. sacks. Small onions bring less.

CABBAGE.—There were nine cars of cabbage on the Detroit market on Monday morning. No sales reported. In New York state market is stronger at \$26.50@30 for Danish seed in bulk per ton. In Wisconsin Holland seed in bulk brings \$24@26 in carloads f. o. b., while farmers are receiving \$20@21. The trade is paying \$22@24 for Danish seed in Cleveland, \$28@32 for do and \$20@22 for domestic in New York City. In Chicago Holland seed in bulk is bringing \$28, and Michigan stock is quoted at \$27@28 in Cincinnati.

CELERY.—The heavy movement of this crop is over. Demand is active for the better grades, and market is firm. At Kalamazoo growers are receiving 10@15c per dozen from wagons at side track. At Rochester, N. Y., the demand is improving and a better feeling prevails. No sales reported.

APPLES.—There were 38 cars of apples on the Detroit market on Monday morning. Snows held at \$5@5.50; Baldwins, Greenings, and Spies of fair quality \$5; No. 2 Snows \$3@3.50. At Pittsburgh, Baldwin firsts \$4.25@4.50; seconds \$3.25; Spies, firsts \$4.50@4.75. At Chicago the market is steady with Jonathans at \$5.25@6.25; Baldwins at \$4.50@5.25; Greenings \$5.50@6 for best grade. Spies \$5.75@6.50.

WOOL

The volume of business transacted in wool circles last week was comparatively small. Prices, however, remain strong with the tendency in an upward direction. The stock of fleeces on hand was never reported lighter than they are at the present time. Michigan unwashed delaines are now quoted at 72@73c on the Boston market; do combing 73@77c; do clothing 56@64c.

GRAND RAPIDS

Wheat, No. 2 red, holds at \$2.09, barley \$1.25, rye \$1.65, and oats 72@75c. No. 2 yellow corn is quoted by the mills at \$2.15. Hay is worth \$23@25 on the city market. Farmers are holding potatoes for better prices and little stock is moving. Considerable frost damage in fields is reported. General range of prices to potato growers for round white, bulk per 100 lbs., is as follows: Petoskey, Traverse City, Hart and Gd. Rapids sections \$1.20@1.25; Cadillac and Reed City \$1.20@1.30; Greenville \$1.50.

DETROIT CITY MARKET

Farmers had a slow market on Russell street Tuesday morning, with the prices, however, holding steady. Potatoes generally sold around \$1.40; apples \$1@2.25, with the bulk at \$1.50@2; parsnips \$1.60@1.85; onions \$1.70@2; cabbage 70c@81; carrots 60@70c; pork 23@24c; eggs 70@75c.

LIVE STOCK

BUFFALO.

December 3, 1917.

Receipts here today as follows: Cattle 5,800; hogs 11,200; sheep 8,000, and calves 1,000.

With 5,800 cattle here today, among which were only about a dozen loads of shipping cattle, which ran to the medium and fair kind, and they sold strong with last Monday's prices. There was a good demand for fat butcher steers, cows and heifers and they sold strong. Canners sold at about steady prices. On stockers, except for better grades, the trade was slow but about steady. Good bulls sold at steady prices, but the common kinds sold a strong quarter lower with some unsold. We look for a fair run of cattle here next Monday and for good trade on the fat grades that will do for the Christmas trade, but no more than steady prices on all other classes.

We had a rather light supply of hogs today and the opening trade was full strong with Saturday, some of the late sales 5@10c higher. A few selected hogs sold from \$17.50@17.65, with the bulk from \$17@17.40; pigs and lights \$15.50@16.25; roughs \$16@16.50; stags \$13.50@14. Everything sold at the close and we look for little change.

With a moderate run of lambs today our market opened up active and prices 5c higher than the close of last week. About all sold and we look for about steady prices last of the week.

We quote: Lambs \$17.65@17.75; cull to common \$12@17; yearlings at \$12.50@15; wethers \$11.25@11.50; ewes \$10.50@11; bucks \$7@9.50; best calves \$15.75@16; common and light \$11@15.50; heavy \$10@13; grassers \$6@7.

CHICAGO.

December 3, 1917.

Cattle. Hogs. Sheep.
Receipts today...28,000 44,000 20,000
Same day 1916...30,423 56,201 30,208
Last week.....95,431 189,195 70,549
Same wk 1916...50,310 240,953 77,101

Cattle were in smaller supply today than is usual on Monday, and this checked any marked weakness in prices, although trade was slow in getting started. Hogs sold nearly as well as on Saturday, sales ranging at \$16.15@17.30. Hogs marketed last week averaged 211 lbs. There was a firm lamb market, the best killers bringing \$16.90, while a speculator paid \$17.50 for some choice light weight lambs.

Cattle were marketed too freely during Thanksgiving week, resulting in a general break in prices. Turkeys were sold more sparingly than usual, as the prices were extremely high, the best dressed lots going as high as 42c per pound in retail markets. The greater part of the beef steers sold at a range of \$9.50@13, with the better class going at \$13.75@15, aside from a few head of fancy little yearlings purchased at \$15.25. The general decline in prices was fully 50@75c, it being one of the worst breaks in values seen this year, with steers classed as good going at \$12.25@13.70, while the medium grade steers brought \$10.50 and plain to fair steers \$9.25 and upward, with inferior little steers on the canning order taken as low as \$6@6.75 idn a small way. Butcher stock was as much lower in price as steers, with cows taken at \$6.20@10 and heifers at \$5.25@12.25, while cutters brought \$5.60@6.15, canners \$5@5.55 and bulls at \$5.50@10.25. Western range cattle showed about the same decline as native cattle, with sales at \$5.50@12.50, a few cows going as high as \$10. Calves had a fair sale at \$5@13.75 for coarse heavy to prime light vealers. The stocker and feeder branch of the market was less animated than usual, and a large share of the sales showed declines of fully 75c, buyers paying anywhere from \$6@11.50 for common light stockers to prime fleshy, weighty feeders, and 900-lb. feeders went as low as \$7.75.

Hogs have been making a good record of late, with the choicer lots especially in demand on local and eastern shipping account and selling not much under \$18. The spread in prices has been very wide, however, and inferior lots are going at a big discount. Despite the large number of breeding animals coming to market experienced men are retaining every good breeder, realizing the great importance of restoring the hog industry to normal proportions at a time when the world requirements call for more lard and hog meats than ever in the past. Late in the week large receipts for Friday and Saturday caused big breaks in prices, with closing sales at \$16.40@17.35, pigs bringing \$12@15 and stock pigs \$14.75@15.50. Prime light hogs sold 25c below the top price, which was paid for prime heavy barrows.

Lambs have been in good demand recently, with buyers paying big premiums for the comparatively few lots of feeders offered. At the week's best

time prime lambs brought \$17.50 and at the close prime feeders were quotable at \$17.25 and prime killing lambs at \$16.90. Lambs sold down to \$12.50 for common, and feeders sold at \$16.50 and over. Yearlings closed at \$12@14.25, wethers at \$11.50@12.50, ewes at \$@11.50, breeding ewes at \$11@13.50, feeding ewes at \$7@10, bucks at \$7.50@9 and goats at \$5@8.75.

HAPPENINGS OF THE WEEK.

(Continued from page 534).

A plan has been adopted by representatives of the Chicago car service committee of the railroad's war board, the Federal Food Administration, producers and shippers of live stock, commission men and the packing interests to stabilize the movement of live stock to the Chicago market. The plan adopted consists in having stock from different zones to reach the Chicago market on different days. Shipments originating within 300 miles of Chicago are to arrive on Tuesday, Thursday, Friday or Saturday, while shipments starting beyond the 300 mile limit and within the 36-hour limit, are to be forwarded so as to arrive on Monday, Wednesday, Friday or Saturday. Should the plan work, it will likely be extended to points beyond what is known as the 36-hour limit. It is hoped this movement will prevent the wide fluctuation of prices which has characterized quotations heretofore.

The Food Administration has received complete reports from the state of Massachusetts on the observing of wheatless and meatless days for the month of October. The reports indicate that in the one state alone 4,600 barrels of flour and 640 tons of meat were saved by the observance of these days during the above month.

WEEKLY MARKET REVIEW OF FRUITS AND VEGETABLES.

The following comments are based upon jobbing prices and shipments for the United States for the period of November 20-27, inclusive.

Hesitation in the Potato Markets.—While the strongly declining tendency of the previous week has not been continued, the market at f. o. b. shipping points has appeared rather unsettled, the light volume of trade often giving no definite basis for quotations. At some points holders were reported not ready to sell at the lower prices ruling for the past two weeks, while in other sections buyers were afraid of the market and not ready to take stock offered. Under such conditions, the car shortage was less of a factor in the situation. Prices quoted are about at the lowest figures reached last week, but are more or less nominal for lack of many actual sales at some points. The Maine shipping points quote Green Mountains around \$1.80 per 100 pounds in bulk, but growers or holders are reported not pressing sales although the rather large volume of carlot shipments indicates that the crop is going forward. Round whites met very light demand at Rochester, N. Y., with a range \$1.85@2.05 sacked. At Grand Rapids, Mich., the range of sale prices sagged persistently whenever recoveries had approached the \$2 mark with low point at \$1.82 for round whites sacked, but demand showed a slightly improving tendency. Wisconsin sales are mostly around \$1.25 per 100 lbs. for average loads bulk at track sides, but with a slow weak market Wisconsin, Michigan and Minnesota are leading shippers as a group. Maine rolled 268 cars, a loss of 12 cars compared with the previous week, and Colorado 147 cars less than last week. The Rocky Mountain region and the whole northwest made a decided reduction from the very heavy shipments last week, suggesting the passing of the crest of the shipping movement. This declining tendency of carlot movement is evident to some degree in most other potato shipping sections. At Colorado shipping points buyers were reluctant to pay over \$1.30@1.35 per 100 lbs. sacked, for whites and russets, and the market seemed dull and weak at the bottom. Idaho and northwestern prairie markets were very dull at \$1@1.25 sacked rurals and netted gems. Red River Ohios slumped to \$1.50 f. o. b. at Moorhead, Minnesota. Nebraska f. o. b. prices show no recovery, the demand being reported poor at \$1@1.15 for early Ohios in bulk. Frosted stock is still mentioned prominently in the northern producing sections, and more such stock has found its way to eastern distributing markets. It sells at a heavy discount and much of it needs re-sorting. Considerable bliss triumph and other seed stock sold at various f. o. b. shipping points east and west at a general range of \$2@2.50 per 100 lbs. in sacks. It might have been anticipated from recent behavior of the

Watch for BOYS' AND GIRLS' section next week.

primary markets, prices at leading city markets in jobbing centers average a weak tone, showing few advances, but sometimes making new low points. Maine Green Mountains sold at a range of \$2@2.60 and Michigan, Minnesota, Wisconsin and New York white stock seldom went above \$2.50 for bulk sales, with a prevailing range east and west of \$2@2.60 per 100 lbs., mostly sacked basis. Many lots showing much frost damage sell below \$2. Occasionally much lower, and the presence of considerable frozen stuff is a demoralizing feature of the general situation. Some of the northwestern lake region markets declined to around \$1.75 for average local stock.

Fairly Steady Apple Market.—The weak tone that has prevailed throughout the early part of the month is now less apparent in the large distributing markets. Demand has been moderate the past week, but prices have held steady on barrel as well as box apples. Standard general purpose kinds, New York and Maine Baldwins, and Virginia Yorks range mostly at \$4@5.25 in markets where these were leading kinds. The Boston market continued weak at \$3@4. For Baldwin firsts, Maine and New York Greenings sold generally at 25@75c above Baldwins. Missouri and Southern Ben Davis firsts sold at prevailing range of \$3@4. These tops were exceeded for all varieties in various southern and northern lake region markets, fancy lots of choice general purpose ranging \$5@6.50 in Memphis, Jacksonville, etc., and \$6@7 in Minneapolis. Table kinds, first to fancy Virginia and West Virginia Winesaps at \$5@6. Missouri, Illinois and Virginia Jonathans range from \$5@6.50 with demand generally fair at strong prices. Northwestern boxed extra fancy Jonathans, medium to large, were meeting slow to moderate demand at about steady range of prices \$1.75@2.25. Delicious, Winter, Banana, Spitzenberg, etc., reached \$3 in some markets. At eastern f. o. b. shipping points offerings were few. Greenings A's from cold storage sold at Rochester, N. Y., at \$5.50 per bbl. Baldwin A's at \$4.50@5.50; Kinds at \$5@5.25. At northwestern shippings, the boxed apple markets were a shade weaker, extra Colorado extra fancy saps, large boxes, held steady at \$1.50 f. o. b. with leading restricted for lack of cars. Frosted stock ranged down to \$1. The leading box apple states are holding up to about recent volume of shipments, but the barrel sections, as represented by New York, Maine, Missouri, Michigan and Virginia, show a considerable decline compared with last week's total. Total apple movement for the week was greatly reduced.

Beans at Steady Values.—While demand is reported light in all large producing sections, f. o. b. markets held at firm prices. Growers at Michigan loading stations are being paid \$6.50 per bushel for white stocks, and navys are quoted from Grand Rapids at \$8.25 f. o. b. usual terms. Detroit quotes \$15.60 on 100 lbs. basis for white stock. Buyers at Rochester, N. Y., seem reluctant on account of damaged offerings but \$13 per 100 lbs. on producers' sales is quoted for marrows and red kidneys. Growers sold hand-picked pea beans around \$8.50 per bushel. Colorado pintos enjoyed fair steady markets with somewhat better demand at \$6.75 @7 per 100 lbs. near Greeley, and \$7.75 @8 f. o. b. Denver. The jobbing range at leading centers for distribution held nearly unchanged. New York pea ranged at \$14.50@16 per 100 lbs. sacked. Michigan white stock ranged at \$14@16. Colorado pintos are working eastward, old stock selling in Boston at \$10.83 per 100 lbs., and arrivals of new stock were reported at other eastern points but no sales. Prevailing range of pintos was \$9@11 per 100 lbs. in western and southwestern markets. California Limas sold in a general way about the same as white stock but commanded 25 cents or more above whites in a few markets.

Celery Markets Uneven.—The best figure is now \$3 a crate for extra fancy large celery at Rochester, N. Y., and the market continues weak and very dull. Michigan shipping points report heavy movement over but a firm moderate market at 12@15c per dozen around Kalamazoo. Compared with last week, carlot shipments fell away about one-half from New York and Michigan, but California shipments continued in heavy although decreased volume. The distributing markets, as a class, indicate slow to moderate average buying movement at a slightly weaker price range, with New York and Michigan large, selling at \$2.50@3.25 per crate rough. Chicago quoted squares at range of 80c@91. Michigan and California Golden Heart sixes and eights were higher, ranging mostly at \$3.25@4.75 per crate. Celery is in good demand in some markets, Boston quoting higher with Pascal at \$1.15@1.70 per dozen. California and Colorado celery reached prevailing range of \$4@4.50 per crate.

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.

December 5, 1917.
Cattle.

Receipts 3161. Canners and bulls are steady; other grades 15@25c lower than last week.

Best heavy steers \$10@11; best handy, weight butcher steers \$8.50@9.50; mixed steers and heifers \$7@8.50; handy light butchers \$6.50@7; light butchers \$6@6.50; best cows \$7@8; butcher cows \$6.25@6.75; common cows \$5.75@6; canners \$5@5.75; best heavy bulls \$7.50@8; bologna bulls \$6.50@7; stock bulls \$5.50@6.50; feeders \$7.50@8.50; stockers \$6@7.50; milkers and springers \$5@100.

Erwin, S. & J. sold Wolmer 5 stockers av 630 at \$7; to Bray 3 cows av 1023 at \$7, 5 do av 726 at \$6; to Sullivan P. Co. 2 do av 935 at \$7.50, 3 do av 857 at \$6.50; to Wolmer 4 stockers av 600 at \$7, 6 do av 583 at \$6; to Thompson 1 heifer wgh 780 at \$7, 5 steers av 810 at \$8, 10 do av 918 at \$9.50; to Mich. B. Co. 16 do av 875 at \$8.25, 1 bull wgh 1210 at \$7.75, 1 do wgh 1300 at \$7.50, 3 butchers av 727 at \$6.50; to Cogles 28 stockers av 508 at \$5.65; to Nagle P. Co. 10 steers av 1150 at \$10.15; to Bresnahan & K. 1 cow wgh 1180 at \$6, 4 canners av 980 at \$5.50, 2 cows av 975 at \$6, 5 do av 866 at \$5.50, 7 do av 900 at \$6.25, 4 do av 960 at \$5.50; to Bray 7 do av 1060 at \$6; to Mich. B. Co. 10 butchers av 1065 at \$6.50, 3 do av 857 at \$7.50, 24 do av 710 at \$7, 9 do av 722 at \$7; to Bray 8 canners av 915 at \$5.50, 19 do av 970 at \$5.60, 2 do av 1030 at \$5, 4 cows av 1180 at \$7; to Garber 6 butchers av 616 at \$6.35; to Bresnahan & K. 12 steers av 926 at \$7.15, 3 do av 697 at \$5.75; to Newton P. Co. 2 do av 1185 at \$8.50, 7 cows av 1043 at \$6, 7 do av 945 at \$5.75; to Mich. B. Co. 5 butchers av 780 at \$8; to Sullivan P. Co. 1 bull wgh 1600 at \$7.75, 1 do wgh 960 at \$7.

McMullen, K. & J. sold Fineman 16 butchers av 682 at \$6; to Bray 25 canners av 850 at \$5.75, 2 cows av 1075 at \$6; to Newton P. Co. 9 steers av 1064 at \$10, 3 cows av 1043 at \$5.50; to Parker, W. & Co. 4 canners av 917 at \$5.50, 19 do av 931 at \$5.50, 25 do av 900 at \$5.50, 7 do av 956 at \$5.50; to Hyman 6 butchers av 663 at \$6.35; to Kamman B. Co. 4 do av 907 at \$8, 1 cow wgh 1200 at \$6.75; to Bresnahan & K. 1 do wgh 1000 at \$5.50, 1 do wgh 1090 at \$6.50; to Mich. B. Co. 1 do wgh 950 at \$6.50, 4 do av 807 at \$7, 9 do av 806 at \$6.50, 1 do wgh 1150 at \$6.25, 2 do av 730 at \$6.50, 1 bull wgh 1080 at \$6.75; to Kamman B. Co. 5 butchers av 640 at \$7.10, 5 do av 770 at \$7.25, 9 do av 980 at \$8.50, 3 cows av 1063 at \$7.40; to Applebaum 22 butchers av 582 at \$6; to Sullivan P. Co. 1 cow wgh 1120 at \$6, 2 do av 1025 at \$6.25, 5 heifers av 750 at \$7; to Bresnahan & K. 10 canners av 783 at \$5.50, 2 do av 1110 at \$6.75; to Grant 24 butchers av 604 at \$5.75; to Newton P. Co. 12 cows av 850 at \$5.75; to Mich. B. Co. 3 do av 1133 at \$7; to Bresnahan & K. 9 canners av 997 at \$5.50; to Bernfeldt 14 butchers av 430 at \$5.40; to Thompson 26 steers av 972 at \$10.60; to Bray 4 cows av 1000 at \$6; to Gilbert 1 do wgh 1270 at \$7.

Veal Calves.

Receipts 658. Market strong on good and common dull. Best \$14; common \$10@11; heavy \$6@8.

Sandel, S. B. & G. sold Goodgold 6 av 250 at \$7.50; to Nagle P. Co. 7 av 180 at \$13.50, 3 av 145 at \$13, 2 av 245 at \$10; to Sullivan P. Co. 11 av 165 at \$14, 4 av 145 at \$11, 2 av 130 at \$9; to Hammond, S. & Co. 4 av 125 at \$13, 18 av 145 at \$13.75, 2 av 165 at \$10.50, 3 av 130 at \$11, 8 av 140 at \$14; to Nagle P. Co. 3 av 190 at \$14.25; to Goodgold 3 av 150 at \$9, 5 av 155 at \$11.

Sheep and Lambs.

Receipts 4872. Market strong to 25c higher. Best lambs \$16.90@17; fair lambs \$15.75@16; light to common \$14@15; fair to good sheep \$9@10; culls and common \$6@7.50.

Bishop, B. & H. sold Nagle P. Co. 42 sheep av 98 at \$8, 7 do av 125 at \$9, 4 do av 125 at \$10, 173 lambs av 82 at \$16.65, 79 do av 70 at \$16.50, 12 do av 98 at \$16.50, 120 do av 90 at \$16.75, 77 do av 75 at \$16.50, 6 do av 75 at \$16; to Hammond, S. & Co. 68 do av 73 at \$16.60; to Sullivan P. Co. 15 do av 55 at \$15.25, 49 do av 60 at \$16, 35 yearlings av 95 at \$14.50, 8 sheep av 80 at \$6; to Nagle P. Co. 55 lambs av 80 at \$16.75, 186 do av 80 at \$16.50, 28 do av 75 at \$16.75; to Hammond, S. & Co. 62 do av 75 at \$16.75; to Nagle P. Co. 137 do av 70 at \$16.75.

Hogs.

Receipts 7231. Market steady. Mixed grades \$16.50@17; few heavy at \$17.25; pigs all sold at \$15.25.

This is the Kind of Horse the Government Wants



No horse with a Spavin, Splint, Ringbone, Curb, Bony Growth, Capped Hock, Wind Puff, Strained Tendon or Sweeny can now pass the keen-eyed Inspectors of the Government Remount Stations.

Splendid-looking horses—otherwise sound—are being turned down because of some blemish that could be quickly cured with

Gombault's Caustic Balsam



Here is your chance to make money for yourself and at the same time help in the Government's great Thrift and Production movement.

Put your horse into condition with Gombault's Caustic Balsam. A safe and reliable remedy.

Gombault's Caustic Balsam if applied immediately after burns, bruises or cuts, is a perfect ant septic—soothing and healing. An absolutely safe external remedy for man or beast.

Every bottle of Caustic Balsam sold will surely give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by parcel post with full directions for its use. Send for descriptive circulars, testimonials, etc.

The Lawrence-Williams Co., Cleveland, Ohio

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

POTATOES--APPLES--ONIONS
WANTED

CHAS. W. RUDD & SON, Detroit, Mich.

EGGS: We are paying good premiums for new-laid Eggs, either Whites or Browns. Write us for particulars. AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

CATTLE

Cattle For Sale

2 Loads feeders and two loads yearling steers. Also 2 can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shanstam, Fairfield, Iowa, R-8.

FEEDERS FOR SALE
Two car loads of Shorthorn grades, dehorned, medium flesh, weight 700 to 800 lbs. Price 7 1/2 to 8 cts.
The Jennings Farms, Bailey, Mich.

HOGS.

DUROC BOARS

The biggest, longest, growthiest spring boars I ever had. Prices reasonable if taken at once. Shipped O.O.D. F.E. EAGER & SON, Howell, Mich.

Duroc-Jerseys One Yearling Cherry King Boar, Gilts bred for fall farrow. J. H. BANGHART, East Lansing, Mich.

Duroc Sows and gilts bred to Eureka Cherry King and Crimson Critic son of Critic Model 1916 champion Iowa Fair. W. C. Taylor, Milan, Mich.

Pinehurst offers Registered Spring Boars, tried brood sows, One Great Herd Boar. Write your wants. Orlo L. Dobson, Quincy, Mich.

DUROCS--FALL PIGS

crated, registered, and delivered at \$20 each, pairs and trios not akin. 45 sows and gilts bred for spring farrow. Newton Barnhart, St. Johns, Mich.

Durocs. Sons of Panama Special \$15 at weaning. Good spring gilts. R.C. R.I. Red Cockeils \$3. E. E. Calkins, R.R. Ann Arbor, Mich.

Duroc Jersey spring gilts and fall pigs either sex. E. D. HEYDENBERG, Vayland, Mich.

DUROCS for sale, 1 fall boar, 7 Spring boars, good breeding. Write for description and prices. J. D. CRANE & SON, Plainwell, Mich.

Duroc Jersey: Extra good spring pigs for sale. CAREY U. EDMONDS, Hastings, Mich.

Duroc Jerseys--boars of the large heavy boned type. Prize winning stock, prices reasonable, type and breeding considered, also gilts bred to Junior Champion boar for spring farrow. F.J. Drott, R. 1, Monroe, Mich.

For Sale Duroc Jerseys Boars and gilts, also, dandy fall pigs. Prices right. JOHN MCNICOLL, Station A, Route 4, Bay City, Mich.

DUROC JERSEY SOWS

Bred to one of the best young boars in Mich. for Mar. farrow. RUSH BROS., Romeo, Mich.

BOARS

Big growthy fellows. The kind that pleases. I ship C. O. D. and pay express.

J. CARL JEWETT, Mason, Mich.

Chester Gilts bred for March farrow early fall pigs both sexes from best blood lines. F. W. ALEXANDER, Vassar, Mich.

Raise Chester Whites

Like This
the original big producers



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

Big Type O. I. C's.

Stock of all ages for sale. We showed at four state fairs and won more champions and Grand Champions than all the other breeders together double, we were Premier Breeder and Exhibitor at every fair we showed. We breed the best. We sell the best. We guarantee them to be the best. Write your wants. Get our Catalogue. We ship on approval. CRANDELL and SON, Cass City, Mich.

O. I. C's. Service boars all sold, have some fine last O. spring gilts, and a nice lot of this fall pigs, not akin, good growthy stock. 1/2 mi. west of Depot, Citiz. phone 124. Otto B. Schulze, Nashville, Mich.

O. I. C. & CHESTER WHITE SWINE. Strictly big type with quality. Have a choice lot of boars fit for early fall service. These boars will be sold worth the money. Also have some fine gilts. I will ship C. O. D. NEWMA'S STOCK FARM, R. 1, Marlette, Mich.

O. J. C. Choice Spring boars and gilts out of prize State Fair; also Aug. Sept. pigs of the best blood lines. Clover Leaf Stock Farm, Monroe, Mich.

O. I. C. Boars, long bodied, with quality, for fall service. A few registered, extra fine, Shropshire ewe lambs. G. P. Andrews, Danville, Mich.

O. I. C's: A few prize winning gilts at Michigan State Fair; also Aug. Sept. pigs of the best blood lines. Clover Leaf Stock Farm, Monroe, Mich.

O. I. C. Am offering some good boars of May farrow and fall pigs either sex. O. J. THOMPSON, Rockford, Mich.

O. I. C. Boars of fine quality, prices reasonable. Registered free and will ship C. O. D. FLOYD H. BANISTER, Springport, Mich.

Big Type Poland China. Apr. boars, sire and dams from 1600-lb. stock; can be returned if not satisfactory. R. W. MILLS, Saline, Mich.

BOARS--SOWS

Big type big bone. For the next 30 days we will sell Big type Poland Chinas at bargain prices. April boar weighing 300 lb. Open gilts. Summer and fall pigs everything goes. Get busy. J. C. BUTLER, Portland, Michigan, Bell Phone.

LARGE Type P. C. Largest in Mich. Spring Boars ready to ship. The kind that make good. Come and see the real big type kind. Expenses paid if not as represented. Free livery from Parma. W. E. LIVINGSTON, Parma, Mich.

Big Type Poland Chinas: April and May pigs, healthy, ready to ship, come and see them. Free livery from Augusta. W. J. Hagelshaw, Augusta, Mich.

LARGE Type P. C. Some growthy spring Boars and gilts ready to ship, come and see them. Free livery from Augusta. W. J. Hagelshaw, Augusta, Mich.

Big Type Poland China boar now ready to ship, buy now and get choice. G. W. HOLTON, KALAMAZOO, MICHIGAN.

LARGE Type P. C. Some good spring boars up to 230 lbs. Will also price gilts, open or bred. Fall pigs ready to ship. Wm. J. Clarke, R. 7, Mason, Mich.

Additional Stock Ads. on Page 549

A Better Feed than Your High Priced Grains

KRAUSE Dairy Feed is a money-maker because it takes the place of your high-priced home-grown grains—gives your cows exactly what they need for big milk production and keeps them healthy and vigorous.

A Scientifically Balanced Ration

Krause Dairy Feed is the result of long and successful experience in the manufacture of dairy feeds. It is a scientifically balanced ration containing ten ingredients combined in such proportions as to form a perfect mixture—highly nutritious, easily digested, and one which your cows will relish and respond to immediately.

The ten ingredients in Krause Dairy Feed are Distillers' grains, Gluten feed, Cotton seed meal, Wheat bran, Malt sprouts, Wheat middlings, Brewers' grains, Hominy feed, Linseed meal and a fraction of 1% of salt.

Each of these ingredients has distinct and specific value and their combination under a formula which has been approved by experts of two leading agricultural colleges insures a feed upon which you can always depend for big milk production with no danger of forcing.

Krause Dairy Feed is a good business proposition for you from every point of view. It will save time, labor and money if fed alone, or you can use it with any home grown product which does not bring a high market price.

Give "Krause" a trial and you will make it the standard ration for your herd. It is safe, sure and profitable.

Write at once for free sample of Krause Dairy Feed, also useful pocket record book which every farmer should have. Be sure to give the name of your dealer

Chas. A. Krause
Milling Co.,
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Milwaukee, Wis.



KRAUSE
24
HIGH PROTEIN

DAIRY FEED

Michigan Live Stock Insurance Company

Home Office: Graebner Bldg., Saginaw, W. S., Michigan
Executive Office: 319 Widdicomb Bldg., Grand Rapids, Michigan

This Company is backed by more than 500 of the best live stock farmers of the state, and we have more than \$100,000 deposited with the State Treasurer as a guarantee of the Company's responsibility.

We insure all live stock—horses, cattle, sheep and hogs against death from any cause.

We issue individual and blanket policies covering any and all conditions—herd policies, feeding policies, shipping policies, 30 day foaling policies, etc.

We want a local agent to represent us in every community in Michigan.

We want every farmer in the State of Michigan to insure his live stock with us.

We will give you a square deal.

Write for information.

Colon C. Lillie, Pres. and Supt. of Agts.
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Ten Days before date of publication.

We Offer a Few Special Bargains
In S. C. White Leghorn cockerels, Rambouillet rams, Hampshire pigs (either sex) and Holstein bulls. A good chance for a small investment to reap the benefit of a large expenditure of capital and years of expert breeding.

Flanders Farm, Orchard Lake, Mich.

CATTLE.

Aberdeen-Angus

Herd established in 1900. Trojan—Ericas and Black birds only. Bulls in service; Black Brandon 208932 Enos of Woodcote 191382. Also breeders of Percheron and Saddle Horses.

WOODCOTE STOCK FARM, Ionia, Mich.

M. S. D. AYRSHIRES

We have for sale a choice lot of young stock from A. R. dams. Also a few mature cows. Write for particulars.

W. L. HOFFMAN, Steward,
School for the Deaf, Flint, Michigan

Registered Guernseys

Stock always for sale. May Rose Strain—Herd Tuberculin tested annually. Never had a reactor—no abortion. J. M. WILLIAMS, North Adams, Mich.

Guernseys For Sale, four young registered cows. Tuberculin tested. Geo. N. Crawford, Holton, Mich.

GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculin tested.
T. V. HICKS, Battle Creek, Mich.

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

Guernseys Registered and Grade cows, bulls, yearlings, heifer calves; will sell 20. Some with records; choice of 45; must reduce herd; tuberculin tested. Avondale Stock Farm, Wayne, Mich.

I have entered 10 head Reg. Guernsey Cattle in the Mich. Guernsey sale at Jackson Dec 27, 1917.
JOHN EBELS, R. 2, Holland, Mich.

CLUNY STOCK FARM

100--REGISTERED HOLSTEINS--100
When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

Write us your wants.

R. BRUCE McPHERSON, Howell, Mich.

REG. HOLSTEINS: Herd headed by Albina Bonte R. Butter Boy No. 93124. Dam's record at 6 yrs. butter 28.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 802 lbs. milk 1822 lbs. W. B. READER, Howell, Mich.

For Sale A Yearling Heifer, pure bred Holstein Lad, Dam, Elizabeth Seg's Lyons. If you want something good, write, Geo. D. Clarke, Vassar, Mich.

Registered Holstein Friesian Heifers. 3 to 6 mos. old. Some from 30 lb. sires. Priced to sell. Fred J. Lange, Sebawaing, Mich.

Parham's Pedigree Stock Farm offers Reg. Holstein calves and fall pigs. Bulls half price. R. B. PARHAM, Bronson, Mich.

\$50 Gets son of 30 lb. bull dam is grand daughter of De Kol 2nd But. Boy 3rd. Her dam 18.96 lb. 2 yr. old.
M. L. McLAULIN, Bedford, Michigan.

Additional Stock Ads. on Page 552

THE DETROIT MARKET MILK FINDING.

(Continued from first page).

muneration for their product and service fixed at actual cost plus a very modest profit. Believing that the interests of the consumers would be best served, and the welfare of all best promoted by the application of this just principle, this commission has given it special emphasis in its price considerations.

Since an adequate milk supply at all seasons is indispensable to the welfare of a city, it is necessary for this commission to arrange such schedules of prices as will insure a proper safeguarding of the market milk areas and prevent the necessary city supplies from being diverted into condensed milk and other similar products. Fortunately, this task is simplified by the fact that the cost of production as shown by the data before this commission closely approximates the prices prevailing for milk purchased for condensing purposes in the same areas.

The testimony taken reveals the fact that certain undesirable practices have become common in the collection and distribution of milk which have resulted in waste, and which, in the opinion of this commission, ought to be eliminated, or at least materially reduced. Excess costs in the distribution of milk must be borne by the producer or consumer, or by both as the case may be. Where such excess costs can be eliminated by either producer or consumer, a desirable economic gain will result. By custom containers for both the shipment and the distribution of milk are furnished by the distributor, without specific service charge. This practice has led to gross carelessness on the part of many, and in some instances to absolute dishonesty. Carelessness in returning, and the misappropriation of milk bottles results in a large aggregate loss which in this period of high-priced glass occasions a very appreciable increase in the cost of distributing milk. In view of this waste this commission recommends that the distributors adopt some feasible system of charging bottles to consumers or dealers, while in their possession and crediting them with same on their return.

In view of the unavoidable advance in the retail price of milk delivered to patrons in the Detroit area to meet the present emergency, this commission believes that some provision should be made for the selling of milk at a lower price where the consumer buys it at a distributing station, thus reducing the cost of the service rendered by the distributor. The testimony showed the cost of delivery to approximate three cents per quart. We therefore find that milk shall be sold at selling stations to be established or designated by the distributors at three cents per quart below the delivered price, with a charge of five cents per bottle to be refunded on its return. We ask the distributors to co-operate in making a thorough trial of this plan at once and to prepare detailed information as to the result of the trial for review by the Commission at a future meeting.

To relieve special cases where unfortunate citizens are unable to purchase milk imperatively needed in sickness or for children the distributors have offered to supply it gratis upon application to and approval of either the Board of Health or the Poor Commission.

In the collection of milk at some shipping points, it has become a frequent practice to make various allowances to the carrier in addition to the usual hauling charge to the patron, thereby increasing the service cost of the supply rather than the compensation of the producer. This practice should be discontinued so far as possible, with the maintenance of an adequate milk supply, and the price fixed for the producers' milk applies to the



Don't wait till
next spring to
get your new

DE LAVAL

With butter prices soaring no cream producer can afford to go another month without a New De Laval Cream Separator.

This is true whether you have no separator, or an inferior or half-worn-out machine, or even an old style De Laval.

In cold weather your waste of butter-fat is relatively greater, either with gravity skimming or a poor separator; and at present prices for cream a De Laval would very soon pay for itself out of its own savings.

See the nearest De Laval agent right away and let him show you what the De Laval will save for you. If you do not know the local De Laval agent, write direct for any desired information.

The De Laval Separator Co.
165 Broadway 29 E. Madison St.
NEW YORK CHICAGO

**WHERE
FEED
COSTS
LESS**

Producing grain crops and stock feed at low cost—that is the secret of big profits in farming today. Here is your chance: You can buy, at low prices and on very easy terms, a new farm ready to clear, plow and plant in the

HIGHLANDS OF LOUISIANA

a natural corn country, and where live stock can be fed and fattened at about half the cost of feeding in Northern states. The Highlands are high, rolling, naturally drained; the climate healthful; ample rainfall, mild winters, a long growing season, open pasture seven to nine months each year. Investigate for yourself. Get the new, illustrated book of facts—

"Where Soil and Climate Are Never Idle"

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Low rate railroad excursions from nearly all Northern points first and third Tuesdays of each month.

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UNITED ELECTRIC FARM POWER

Here's the United—a complete, reliable, high quality, GUARANTEED Electric Light and Power Plant at low cost. It gives the convenience of city service. No trouble. No fuss. No bother. No danger from fire.

USE YOUR OWN ENGINE

Your own slow-speed, dependable farm engine belted to a United Electric Plant is your power. Our proven method. Same principle as all big city central stations. SELF-STARTING. A woman or child can operate it. No knowledge of electricity required. Electrical experts will aid you to select size. A United Dealer near you will give Service. Write today for complete description and Special Demonstration Offer.

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Made in All
Sizes For Any Farm.

\$10,000.00

Backs this saw. It is the best and cheapest saw made. As low as \$9.90



**HERTZLER & ZOOK
Portable
Wood Saw**

is easy to operate. Only \$9.90 saw made to which ripping table can be added. Guaranteed 1 year. Money refunded if not satisfactory. Send for catalog. Hertzler & Zook Co. Box 23 Belleville, Pa.

milk delivered at the shipping station platform.

Having been petitioned as above noted to render judgment as to the prices at which milk should be sold by producers and distributors in the Detroit area under present conditions, this commission believes that in view of the uncertainty of the continuance of present conditions, particularly as they may relate to the cost of feeds used in the production of milk, the prices hereinafter fixed for the period beginning December 1, 1917, should be made subject to review by this commission on its own initiative or on petition of producers, distributors or consumers, and to readjustment for future months if, in the judgment of the commission, such readjustment is essential to the preservation of justice and equity as between the parties or classes concerned. To this end the commission accedes to the request of the producers and distributors to continue to act in the above capacity for a period of one year from date.

Milk is one of the very cheapest available human foods. We believe that the mutual interests of consumers, producers and distributors will be conserved by the giving of greater publicity to this fact. We hereby commend the action of the milk producers at their recent meeting in advocating the appropriation of one-half cent per hundred pounds on all market milk sold in the Detroit area for the creation of a fund to be used in such publicity work or otherwise for the promotion of the dairy industry in this area, and recommend that all contracts made for market milk in this area should provide for the deduction of such a sum from each patron's check and the payment of same into the treasury of the Michigan Milk Producers' Association by the receiving distributor.

In consideration of the above mentioned facts this commission finds that the contract price for market milk in the Detroit area beginning December 1, 1917, to producers in the fifteen cent freight zone, shall be \$3.35 per hundred pounds, f. o. b. shipping station platform, for milk testing 3.5 per cent of butter fat, with a deduction of four cents per point for milk below this standard of butter-fat and with an addition of four cents per point for every point above this standard up to and including 4.2 per cent milk.

We further find that milk be sold by distributors in the Detroit area at the following prices:

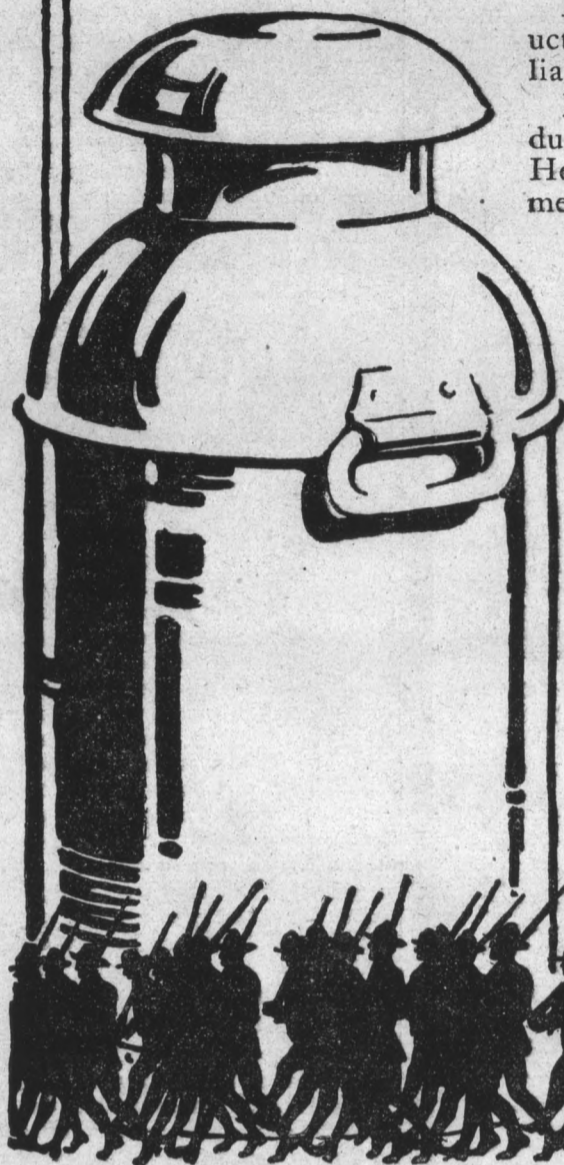
Retail quarts, delivered, 14 cents.
Retail pints, delivered, 8 cents.
Wholesale quarts, delivered, 13 cents.
Wholesale pints, delivered, 7 cents.
Bulk, gallon, delivered, 44 cents.

Retail at selling stations per quart, 11 cents, with a five cent charge for bottle to be refunded on its return.

TO PREVENT COWS FROM SUCKING.

We have found the following method of breaking cows of the troublesome habit of sucking themselves or other cows, to be successful with our animals. All the material required is a piece of No. 9 or 10 galvanized wire long enough to go through the nose of the animal, form a ring by twisting and then to have each end of the wire extend three or four inches out from the ring. Both ends of the wire should be brought to as sharp points as can be made. Insert the wire in the animal's nose, allowing the ends to extend from the nostrils equal distances. Then a round stick of suitable size is held against the animal's nose while the two ends of the wire are twisted together by a couple of turns against the stick, at the same time holding the wire with a pair of pincers to prevent hurting the animal more than is necessary. The ends with their sharp points are then bent at an angle that will insure their probing any animal that the cow tries to suck. C. C. BATHEY.

MILK and WAR TIME



In these days of high prices for dairy products, the "poor milker" is more than ever a liability.

But before you sell the cow that is not producing well, try to improve her condition. Her milk value is much greater than her meat value. Most poor milkers are non-productive because of some defect of health, which can be quickly remedied by intelligent treatment.

Kow-Kure is a medicine that acts quickly on the organs of digestion and milk production. Its widely known tonic and curative qualities have made it the standard cow medicine for the prevention of disease and the treatment of Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches.

Give Kow-Kure a trial; it will do for you what it is doing for thousands of others. Feed dealers and druggists sell Kow-Kure; 55c and \$1.10 packages.

DAIRY ASSOCIATION CO.,
Lyndonville, Vt.

KOW-KURE

Send for free treatise,
"The Home Cow Doctor"



From The Heart Of The Dairy Belt

Wisconsin dairymen—who produce more dairy products than are produced in any other state—have strongly endorsed this great dairy feed—endorsed it because it has put more dollars into their pockets. What better backing could you ask?

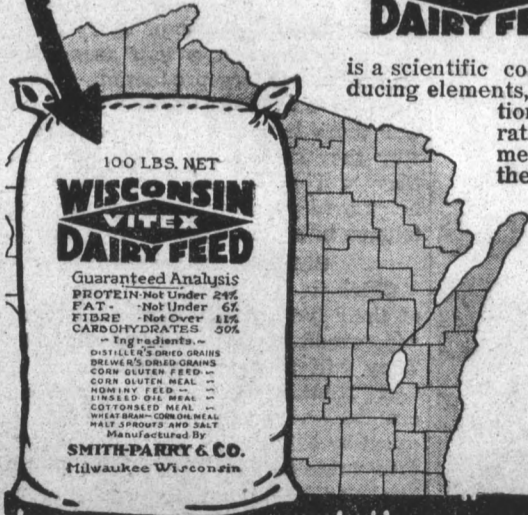
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VITEX
DAIRY FEED**

is a scientific combination of the best milk producing elements, mixed in just the right proportions to form a properly balanced ration—a ration that will supplement ordinary roughage to increase the milk yield and improve the health of your cows.

Wisconsin Vitex Dairy Feed is sold by a dealer in your neighborhood. If you don't know his name, write to your distributor below.

SMITH-PARRY & CO., Mfrs.,
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E. L. Wellman,
Grand Rapids, Mich.
Distributor for State of Michigan



WITTE

"Kero-Oil" Engines

Immediate Shipment—All Styles—
2 to 22 H.P.—No Waiting—Big Factory—Big
Output—Prices most favorable. Write for my
forms and prices—Cash, Payments or No
Money Down.—ED. H. WITTE, Pres.
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I Save
You \$15
to \$200

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In the "Sunny South" for Nature has blessed this favored section with mild, healthful climate, productive soil and all that makes life worth living. You can buy good farm land in Virginia, West Virginia and North Carolina at \$15 per acre and up. Fruit, truck, poultry and general farming will prove successful here. Write for information, illustrated literature, etc., today.

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N. & W. Ry., 221 Ry. Bldg., Roanoke, Virginia

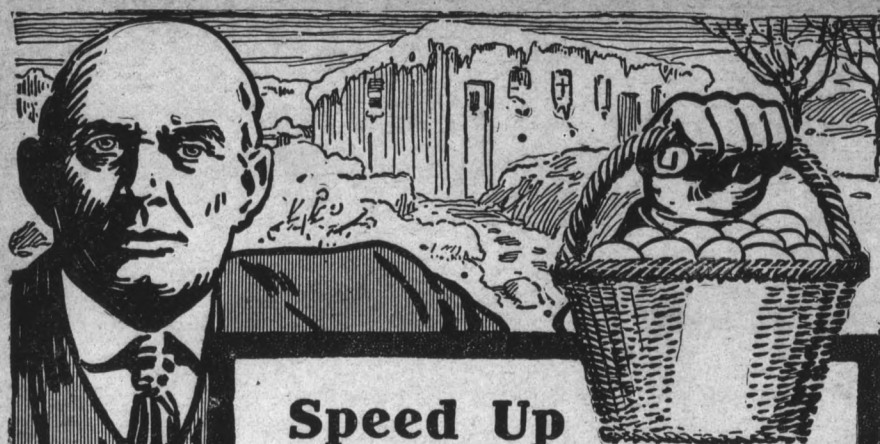


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Feed your hens and pullets Pan-a-ce-a to help them turn the greatest possible amount of their feed into eggs. Feed Pan-a-ce-a to liven up the dormant egg organs and make them active. Feed Pan-a-ce-a to all your poultry to improve the appetite and digestion, to enrich the blood, to make them healthy.

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A Conditioner and Worm Expeller



Dr. Hess Instant Louse Killer Kills Lice

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Mail a postal—Get our offer. Poultry lessons free to every buyer. Booklet, "How to Raise 48 Out of 60 Chickens," 10c. Catalog FREE. Make green, egg-making feed in "SUCCESSFUL" Grain Sprouters. **DES MOINES INCUBATOR CO.** 368 Second St., Des Moines, Ia.

POULTRY

HOMESTEAD FARMS

We have the following birds for immediate delivery. **Pullets**—full grown and about ready to lay; 24 White Plymouth Rocks; 20 Barred Plymouth Rocks; 10 S. C. Rhode Island Reds; 10 White Leghorns; also 20 Leghorns two thirds grown. 12 Black Orpingtons. **Yearling Hens**—moulting finished 60 S. C. White Leghorns; 30 S. C. Rhode Island Reds; 12 Black Orpingtons. **Cockerels**—Rose and Single Comb White Leghorns; Barred Plymouth Rocks; Rhode Island Reds; Black Minorcas. These are season closing sales. **HOMESTEAD FARMS, Bloomington, Mich.**

BREEDING COCKERELS

Trapnested, bred-to-lay stock. S. C. White Leghorns, \$2 each. Barred Rocks and R. C. Reds, \$3 each. **SUNNYBROOK POULTRY FARM, Hillsdale, Mich.**

John's big beautiful hen-hatched Barred Rocks, good layers, Pens (1 birds) \$12 to \$20, \$3 to \$10 each, sold on approval. Circulars, photos. **John Northon, Clare, Mich.**

Barred Rocks Cockerels for sale from strain with records to 290 eggs a year. \$2 to \$5 each. Circular free. **FRED ASTLING, Constantine, Mich.**

Barred Rock Cockerels bred from Great Layers few hens yet. **W. O. COFFMAN, R. 3, Benton Harbor, Mich.**

Barred Plymouth Rock cockerels \$3.00 each. Full blood from prize-winning heavy laying strain. **J. A. Barnum, Union City, Mich.**

Barred Rocks Cockerels from good laying strain \$3.00 each two for \$5.00. **A. A. WOOD & SON, Saline, Mich.**



Ferris White Leghorns

A real heavy laying strain, trapnested 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock; tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free. **GEORGE B. FERRIS 984 Union, Grand Rapids, Mich.**

Pine Crest—S. C. White Orpingtons, special sale cocks and hens also young cockerels. **MRS. WILLIS HOUGH, PINE CREST FARM, Royal Oak, Mich.**

Winter Eggs Sure

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit maker write **E. J. Reefer, poultry expert, 1389 Reefer Bldg., Kansas City, Mo.** who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reefer of the results that a million dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today or ask Mr. Reefer for his Free poultry book that tells the experience of a man who has made a fortune out of poultry.

SPROUTED OATS



For EGGS
1 Bu. Oats Makes 3 Bu. Egg-Feed

CLOSE-TO-NATURE GRAIN SPROUTERS
Produce the easily digested vapor-bath sprouts, the vegetable milk, and the grape sugar that bring the big egg yields. Reduce food bills and get more eggs by using a Close-To-Nature Sprouter. Three kinds and all sizes from a few hens to 1,000. Circular free. **CLOSE-TO-NATURE CO., 64 Front St., Colfax, Iowa**

Laybill S. C. W. Leghorns Large, great layers. Pure white. Bargains in choice breeding hens now. **Everfresh Egg Farm, Ionia, Mich.**

BUFF Leghorns, breeding cockerels also a few fine pens of four hens and cockerels for \$10. More hens \$2 extra. **Dr. William A. Smith, Petersburg, Mich.**

Additional Poultry Ads on Next Page

The Hen and the War

THE humble hen plays a prominent part in preventing the progress of the Prussian peril. The quickest and cheapest way of adding to our meat supplies is to increase poultry and egg production. To double this production next year will give us 6,500,000,000 pounds of meat food in the form of poultry and eggs. By having this amount of poultry food for domestic consumption we will eat less pork and beef, and can send almost that many pounds of meat to Europe to feed our soldiers, the armies of the allies, and the destitute civilians.

We can not increase any of the meat animals as rapidly or economically as poultry.

U. S. Asks Double Poultry Production.

The United States Department of Agriculture wishes every farmer to understand the importance of doubling our poultry production next year. It is a vital part of the general food production campaign, and that campaign must be carried out in all its details to insure victory in this war. The chief poultry increase must be made on the general farms of the country—on every farm in the country. It must be made as a by-product of general farming. The farmer must get his flock to such size, in proportion to his farm, that all the waste and scraps, and land available for chickens to run on will be used, and the fowls kept up from these sources and a reasonable amount of other feed. The department does not suggest that extensive poultry enterprises be taken up by the general farmer. In fact, it warns against that very thing. But it urges every farmer to keep just as many hens, and produce just as many chickens and eggs as he can economically and as a by-product of his general farming.

Eggless Farms.

The average size of the farm flock in the United States now is forty hens. If the average is increased to one hundred hens next year the desired increase in production should be obtained. Many farms, of course, can have flocks of several hundred, and some farms will have to keep less. But the effort is to increase the farm average to at least one hundred hens.

It is an astounding fact that there are a million and a half eggless farms in the United States—an economic anomaly and an agricultural absurdity. Out of a total of 6,371,502 farms, 1,527,743 report no egg production in the last census.

Even if we had never been forced to go to war with Germany this condition would be one demanding every effort at correction—for each farm can, at least, produce sufficient poultry and eggs for home consumption, and thereby be a more profitable farm. It would be to the self-interest of every one of these million and a half farmers to commence poultry production, if there were no war. But because we are at war there is a more important reason why they should do so—the fact that they will be helping win the war—helping to preserve their own free existence in a free country.

Chickens Self-feeders.

Chickens will "pick up" a good part of their living from waste that otherwise would never become of any value. They will feed themselves, to an extent, from grass, feeds, insects, and crumbs and small scraps that if not eaten by chickens would not become of food value to man. They will eat the eggs and larvae from which come various destructive insects, particularly orchard pests. In some orchards where chickens range, the brown tail moth has almost disappeared, while nearby orchards, where chickens do not run, are damaged by the pest.

Most of the attention required by farm flocks can be given by the women and children of the household. The

question of labor is not a puzzling and uncertain problem in the poultry production program. If the farmer increases his flock to a size suitable to fit in as a by-product of his general farming he will find that it will not require extra help.

Prepare for Early Hatch.

Early hatching next spring is necessary if the desired increase in production is attained. It is also necessary, during the winter, that farmers save young hens and pullets, so they will be on hand for stock in the spring. The stock of the nation has been reduced considerably this fall by a widespread sale, for market, of young hens and pullets. Therefore it is necessary to conserve stock now, or else the shortage may interfere seriously with the production program. In view of the stock shortage, to kill a good hen now is to reduce the potential egg production next year anywhere from five to twelve dozen eggs.

Early hatching in the spring will increase the number and size of fowls and the number of eggs produced next year. It will result in bigger birds, and birds that will lay in the winter months.

Start Hatching Early.

Every farmer is urged to start the hatching season earlier than usual next year, either by incubation or natural methods if the hens will sit earlier.

The chickens first hatched in the spring are the ones that are largest in the summer, that mature first in the fall, and that lay eggs in the winter. Furthermore they are the ones that will want to sit early the following spring, which in turn, will hatch earlier chickens—and so the cycle will continue. On the contrary chickens hatched late in the spring do not mature until so late in the fall that they will not become winter layers. They will not sit until late the next spring, and so another cycle of late maturing late laying fowls is established.

About seven months are required for a chicken to grow to maturity. During that period of growth its feed goes to the making of bone, flesh, feathers. When it becomes mature its feed goes to the making of eggs and the hen commences to lay. If a bird matures and commences laying in the fall before cold weather she will continue laying all winter if properly cared for. Birds that are still growing when cold weather comes, and do not mature until during the winter season, will very rarely commence laying late the next spring.

Late Hatching Cuts Production.

The early hatched chicken has a longer growing season, before cold weather. It has more time in which to develop—simply gets an earlier start—and grows larger. One of the principal reasons that the farm flocks of the United States show a large average weight of fowls is that the cycle of late hatching has become established. That custom can be displaced and early hatching established by killing off the late hatched birds and retaining only the earliest hatched birds for stock. Once the cycle of early hatching is effected it will perpetuate itself. The impulse of the early hatched chicken to sit early herself and produce more early hatched chickens having the same impulse will continue on and on.

So the farmer who hatches early does these things:

Gets more chickens, because a larger proportion of the total hatch will live.

Gets more actual meat, because more chickens will live, and because they will weigh more at maturity than late hatched birds will weigh.

Gets more eggs, because the early hatched pullets will lay eggs during the winter and the late hatched will not.

Veterinary.

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

Dehorning Pregnant Cows.—I have two Jersey cows, one four and the other six years old. One of the cows is due to calve December 4 and the other March 1. Would dehorning cause the cows to give less milk? F. L. Cass City, Mich.—If the horns are properly removed with a dehorning tool right away, it will not affect the cow's milk yield. Dehorning should not be done in either very hot or very cold weather.

Injured Back.—I have a valuable Scotch Collie dog about one year old that was struck by an automobile and for several days he could not stand or sit up at all. Now he can sit up, can stand for a few moments, but drops down on his haunches. He has practically no use of his hind legs. He crawls around with front legs, but drags hind quarters behind him; however, he is getting stronger all the time but can't stand on hind legs. M. B. P. Milford, Mich.—In a case of this kind it is no easy matter to tell precisely what the outcome will be. However, I am inclined to believe that if you will give the dog good care, keep his bowels open and apply dry heat to back several times a day, he will perhaps recover. Give him five drops tincture of nuxvomica, 2 grs. of potassium iodide and ten drops of Fowler's solution at a dose three times a day. If his kidneys do not act free enough, give him ten grains of acetate of potash once or twice a day.

Bruised Foot.—I have a mare twenty years old which suddenly went lame while in pasture and when found seemed to be suffering severe pain. I called our local Vet., who suspected a stone bruise, and prescribed hot bran poultices to the foot, which I kept up for a week. This treatment seems to have relieved her lameness somewhat, but her foot is yet tender. The sole of foot near toe is somewhat tender when tapped with a hammer. G. A. Munith, Mich.—Paint coronet with equal parts tincture iodine, camphorated oil, and pack bottom of foot with wet clay, daily. You had better let her run in pasture as walking on cool damp earth will have a good effect.

Pneumonia.—I have a cow that had an attack of pneumonia last winter which our local Vet. successfully treated and the cow has been doing fairly well since. She is with calf, due to freshen the early part of 1918. Would you advise me to dispose of her? C. B. L. Vanderbilt, Mich.—A farmer or dairyman should hesitate before disposing of a cow that has proved profitable for dairy and breeding purposes. Doubtless your cow made a fairly good recovery and if given good care may never have another attack; therefore, you had better keep her.

Heifer Fails to Come in Heat.—I would like to know what can be done for a heifer 17 months old which has never yet been in heat. So far as I can tell this heifer is in perfect health. R. H. S., Whittemore, Mich.—You will perhaps obtain some benefit by giving her 30 grs. of ground nuxvomica, 60 grs. of ground capsicum and 120 grs. of ginger at a dose in feed twice daily. Feeding her nutritious stimulating food will assist in bringing her in heat.

Cow Holds up Milk.—I wish that some one of the readers of the Michigan Farmer would tell me the cause of a cow holding up her milk, and at the same time give a remedy. D. E. C., Bay Shore, Mich.—Doubtless there are quite a number of common causes of this peculiarity in dairy cows. Rough, unkind milkers, much noise and excitement, and a milker who is unacquainted with the cow often fails to get as much milk as the regular milker. Feeding the cow at milking time, gentle, kind treatment and petting the cow seems to have the desired effect of overcoming this peculiar trait.

Indigestion.—I am anxious to know what is causing the death of my four-months-old rabbits. I weaned them when a month old, then fed clover, cabbage and all the oats they will eat. They are also furnished with milk to drink twice a day; besides they have plenty of space to take exercise. About the only symptom they show is extensive bloating before they die. N. L. Sebawaing, Mich.—Doubtless your rabbits die the result of acute indigestion. Give them four or five grains of hypophosphite of soda, or ten drops of aromatic spirits of ammonia or 1/4 gr. of salicylic acid every hour or two until the bloating goes down. A dose of castor oil or olive oil to clear out the stomach and bowels after the attack would doubtless benefit them. It is perhaps needless for me to say that they should be fed a good quality of food and kept in a clean place.

The First Mich. Holiday Guernsey Sale

Fair Grounds, Jackson, Mich. December 27th, 1917

G. W. ALLEN, Sales Manager, Grass Lake, Michigan
COL. D. L. PERRY, Auctioneer

Watch the "Michigan Farmer" December 15th and 22nd.

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers. Brookwater offers to sell a few choice bull calves of this kind. Our herd of Durocs has won more prizes at the State Fairs this year than any other.

Boar Pigs and Yearlings For Sale.

H. W. MUMFORD, OWNER
BROOKWATER FARM
Ann Arbor, Mich., R. 7.

"BULLY" BARGAINS at Long Beach Farm, Augusta, Mich.

Choice Holstein bulls, \$80 up, 4 to 14 mo. old, from A. R. O. daughters from noted families; Our Senior Herd Sire Long Beach DeKol Korndyke has 5 30 lb. Sisters, is a son of Friend Hengerveld DeKol Butter Boy, and 1200 lb. daughter of Pontiac Aargie Korndyke, she has 13 30 lb. sisters. Our Junior Herd Sire is as good. Our illustrated booklet tells all.

POULTRY.

BARRED Rock cockerels from Prize Winning stock
Thompson strain \$3 & \$4. Yearling breeding hens \$2.
Well Barred, SAM STADEL, Chelsea, Mich.

Fowlers Buff Rocks Cockerels Pullets and hens for sale from two dollars up according to quality.
B. B. FOWLER, Hartford, Mich.

Bull Orpingtons A few choice cockerels finely marked. Price \$3 to \$5.
Mrs. G. D. ELLIS, R. 3, Clinton, Mich.

Hens-Pullets-Cocks and cockerels from our Bred-to-Lay Strains of White Leghorns, Barred Rocks and Buff Orpingtons, Russell Poultry Ranch, Petersburg, Mich.

RHODE ISLAND REDS and plymouth Rocks Males R 5 to 12 lbs., according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1; 100, \$5; 120, \$5. Mammoth Bronze Tom Turkeys 8 to 38 lbs., according to age \$6 to \$25, 10 eggs \$3. J. Morris & J. Barsan, Vassar, Mich.

RHODE ISLAND REDS, Both Combs, Cocks, Hens, Cockerels and Pullets at reasonable prices. Interlakes Farm, Box 39, Lawrence, Mich.

R. C. Br. Leghorn Cockerels. Leading strains in America. Bred from winners. \$2 each after Dec. 1. A square deal, orders promptly filled. E. Himebaugh, Coldwater, Mich.

S. C. W. Leghorns, cockerels and hens bred for beauty and utility \$2.00 up.
White Line Poultry Farm, Hillsdale, Mich.

S. C. W. Leghorn hens two years old, and late hatchlings, \$1.50 each. Cockerels, utility and trap-nested \$1.50 to \$5. Hillcrest Poultry Farm, Ypsilanti, Mich.

R. C. Br. Leghorn Cockerels, Pekin W. China Goose, Order early, the supply is limited.
MRS. CLAUDIA BETTS, Hillsdale, Michigan

100 S. C. W. Leghorn pullets April hatched (Fertis strains. Willard & McArthur, Columbiaville, Mich.

S. C. W. Leghorn pullets April hatched (Fertis strains. 200 to 250 egg strain) \$1.50 each.
HERBERT HAMMOND, Williamston, Mich.

MAPLE Grove Farm offers a fine bunch of S. C. W. Leghorn cockerels from 220 to 240 egg trap-nested stock. \$1.50 each. O. S. THOMPSON, Allen, Mich.

R. C. Br. Leghorn cockerels \$1.50 and \$2. A few nice Imp. Pekin Ducks and (1) Drake at \$2 each.
Mrs. Wm. Nickert, Carson City, Mich.

SILVER Golden and White Wyandottes. Choice breeding stock of sale after Oct. 1st, a few bargains in yearling hens. C. W. Browning, R. 2, Portland, Mich.

WHITE Wyandottes. I have a fine lot of April and May hatching cockerels for \$3.00 and \$5.00 each.
DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

FINE large Bourbon Red Turkeys for sale all early hatched. Pure bred stock. Hens \$5.00, Toms \$6.00.
Mrs. F. J. NAPIER, Wixom, Mich.

White Wyandottes 50 extra choice cockerels \$3 to \$5. 150 up on approval and guarantee satisfaction. Milton E. Stewart, R. 3, Augusta, Mich.

CATTLE

PUBLIC SALE

Registered Holstein Cattle

On the Farm of Louis Neller, 2 miles west, 1 mile north Bath, Mich.

Wednesday, December 12, '17
At 10 O'clock

Consisting of 90 Head of Registered Holstein Cattle, 19 Head of A. R. O. Cows of Good Test, and 20 Yearling Heifers "One of the Finest Herds of Central Michigan". If catalog is desired it will be furnished upon request.

All visitors coming on the M. C. R. R. will be met at Bath.

Col. D. L. Perry, Louis Neller,
Auctioneer Proprietor

I Always Have Holsteins To Sell

If wanting Registered cattle write me your wants before placing your order elsewhere.

L. E. CONNELL, Fayette, Ohio

"TOP-NOTCH" HOLSTEINS

"Milk production is an inherited ability. Good cows must be bred to good pure-bred bulls if progress in dairying is to be made."
Extract U. S. Dept. of Agric. Bulletin.

Here is a young bull with inherited ability, and rare individual merit. He was born Dec. 24, 1915.

Butter 7 Days	33.62
Butter 30 Days	130.73
Milk 30 Days	2015.70
Record	338.41
Butter 1 Year	18075.80
Milk 1 Year	18075.80
His Sire's Sire's three nearest Dams average	7 Days 30.87, (Including a junior three and senior four yr. old.)
His Dam's Record	21.24
3 Yrs. 14 Days	452.8
Dams' Dam	29.40
Almost 30 lbs.	
About 1/4 white.	Price low for this quality.

McPherson Farms Co., Howell, Mich.

DISPERSION SALE

Having sold my farm I will sell at Public Sale at the farm 3 miles east of Howell, Mich. on the Grand River road, on Monday December 17th, 1917, my entire Herd of Registered Holstein Cattle, consisting of 20 head of choice breeding.

9 of these are cows, only 2 over 6 years old, 6 are fresh, 3 due soon.

6 yearling heifers
3 heifer calves
2 bull calves
3 have A. R. O. records, one of nearly 23 lbs.
3 daughters and several granddaughters of a 26 lb. cow.

The calves are sired by and the cows are bred to a bull whose dam has a record of 29.52 lbs. butter in 7 days at 4 years old and milked 103 lbs. in one day.

Extended pedigrees furnished at sale, no catalogues. Sale of tools begins at ten o'clock A. M.

GEORGE WEYENETH, Howell, Mich.

HOLSTEIN FEMALES FOR SALE

From heavy producers all will average over 22 lbs. butter by their 6 to 7 nearest dams. Also a few young bulls.

Bigelows Holstein Farms, Breedsville, Mich.

OAK LEAF FARM

Ypsilanti Sir Pictetle De Kol

Registered Holstein cows & bull calves fine individuals cows and in calf satisfaction guaranteed.

E. H. Gearhart & Son, Marcellus, Mich., R. No. 4.

WINWOOD HERD REGISTERED HOLSTEINS

Holton, Mich.

Reference: Old State Bank, Fremont, Mich.

Flint Maplecrest Boy sire in service

His sire is Maplecrest Korndyke Hengerveld, his 3 nearest Dams each over 30 lbs. of butter in 7 days.

His dam and grand dam both made over 123 lbs. of butter in 1 year. It is the yearly cow we are looking for to deliver the goods.

Flint Maplecrest Boy's Dam is Gluck Vasser Bell, 30.57 lbs. of butter in 7 days and 120 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery.

We have Bull Calves from 2 weeks to 8 months old for sale at dairy farmers' prices all out of A. R. O. Heifers. Write & tell us the kind of a bull you want.

John H. Winn, (Inc.), Holton, Mich.

FOR SALE Registered Holstein-Friesian Bull Calf

Korndyke Lillith of Serradella, born June 24, 1917. Sire Sir Korndyke Manor Johanna. Dam Lillith Panna Yee-man De Kol, Butter in 7 days, 6 yrs. 27.02 lbs. Sire's Dam Butter in 7 days, 4 1/2 yrs. 31.65 lbs. Write for Pedigree. Price \$175. CARL E. SCHMIDT, Oscoda, Mich.

On Our Easy Payment Plan

We will ship you Holstein Bull calf in our stables. Prices from \$50 up. Ypsilanti Farms, Ypsilanti, Michigan.

REG. Holstein Bull Calf. The last one until winter. A good one with A. R. O. backing. Write for pedigree and price. Elmer E. Smith, Redford, Mich.

FOR Sale One registered Holstein bull calf. Sire's twenty nearest dams have 7 d. records av. 25.53 lb. butter. Dam to be tested. A finely marked, growthy individual. Long Veiv Farm, R. 3, Box 10 A, Rochester, Mich.

2 CHOICE Holstein bulls nearly old enough for service. No. 1 born January 24, 1917, sire's dam, grand-dam and great grand-dam's semi-official records average 842 lbs. butter. Dam of calf 18 lbs. butter 7 days senior 2yr.-old, average per cent fat 4.3. No. 2 Sired by 23 lb. bull and out of a 14 lb. junior 2-yr.-old.

C. L. BRODY, Owner, Port Huron, Mich.
Chas. Peters, Herdsman, Three Rivers, Mich.

Butter Fat Counts

Holstein Bull Calves from a 30 lb. 6.53 % Sire. Dam are grand daughters of the King of the Pontiacs. Their dams grand daughters of Sadie Vale Concordia the first 30 lb. cow. Edwin S. Lewis, Marshall, Mich.

The most persistent producers—
The most profitable cows are—
Pure Bred **HOLSTEINS**
They give the greatest yields per year of milk and butterfat of any breed. Write for free descriptive books—we have nothing to sell.
The HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 164, Brattleboro, Vt.

Our herd is headed by King Vale Palmyra Fayne, Sired by a son of King Fayne Segis from a 30 40 lb. daughter of Hengerveld De Kol. Dam is a 32.32 lb. granddaughter of Paul De Kol, Jr., sire of Creamelle Vale, 29.55 lbs. milk, 1155 lbs. butter in 1 year. Sons of this great bull for sale at reasonable prices.
E. M. PIERCE & SON, Manchester, Mich.

Holstein cows for sale, 10 head highest class, registered stock. Write for particulars to E. P. KINNEY, Lansing, Mich.

Reg. Holstein bull and heifer calves for sale Extra heavy milking dams.
C. L. HULETT & SON, Okemos, Mich.

Bull calves sired by a double g-son of Friend Hengerveld De Kol Butter Boy from dams of the greatest yearly record breeding. Write for photos and prices & etc. Ontonagon Valley Holstein Farm, Bruce's Crossing, Mich.

Reg. Holstein Bull Calves Pontiac Korndyke and Hengerveld DeKol Breeding at Farmers Prices. John A. Rinke, Warren, Mich.

Prime Reg. Holstein bull calf. Born Nov. 28, about half white. Mother & fathers dam have A. R. O. records. Price \$30. Chas. I. Cook, Box 77, Fowlerville, Mich.

Owosso Korndyke Hengerveld, grandson of Friend Hengerveld De Kol Butter Boy, 4 yrs. old, three nearest dams av. 27.75 lbs. for sale or exchange, bull calves from A. R. dams. John Hutchinson & Son, Millbrook, Mich.

Reg. Holstein Heifer, ten mos. old, will sell or trade for Reg. Holstein Bull at reasonable price.
GEO. H. SHANKLIN, Redford, Mich.

HEREFORDS

ALLEN BROS.
PAW PAW, MICH.

Herefords Bob Fairfax 49427 at head of herd. Stock for sale. Both sexes either polled or horned. E. A. McCARTY, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.

FOUR HEAD HEREFORD BULL CALVES ready for service. Eligible to register. HERTLER BROS., Saline, Mich., on Electric Car Line.

Hillside Farm Jerseys for sale. Yearling bull backed by both sides by Register at Merit dams. His four nearest dams average over 600 lbs. of butter. C. & O. DEAKE, Ypsilanti, Michigan.

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

Jersey Bulls For Sale Ready for service. Raleigh -- St. Lambert breeding. Waterman & Waterman, Packard Rd, Ann Arbor, Mich.

Lillie Farmstead Jersey Cattle. 3 bulls, ready for service, out of R. of M. dams. 10 heifers bred to freshen next fall. Colon C. Lillie, Coopersville, Mich.

For Sale Two registered Jersey bull calves. Splendid individuals. Good pedigrees. Priced to sell. Long Veiv Farm, R. 3, Box 10A, Rochester, Mich.

FOR Sale 3 cows, 3 yrs. old with records, 1 heifer, 2 mo. old out of an imported daughter Noble of Oakland. For price and pedigrees write FRED A. BRENNAN, Sec. - Capac, Mich.

Prize Winning registered Jersey bull, Daisy's Oxford Fox 154827, born Dec. 4th 1916. Out of a high producing prize winner and sired by a champion whose dam produced 788 lbs. of butter in one year. Priced to sell. C. S. Bassett, Draxel Pl., Kalamazoo, Mich.

FOR Sale-Maple Lane R. of M. Jersey Herd R. of M. cows and their daughters all records 600 and 600 lbs. For sale bulls and bull calves out of these cows. IRVIN FOX, Allegan, Mich.

The Wildwood Jersey Farm offers for sale choice young bulls from R. of M. dams, good enough to head any herd. We invite inspection. ALVIN BALDEN, Capac, Mich.

FOR SALE Registered Jersey bulls, ready for service. SMITH and PARKER, R. 4, Howell, Mich.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

FOR Sale-Reg. Short Horn Bulls by Maxwellton F. Monarch 2nd, a son of Avondale, from 1 to 12 mos. old. John Schmidt, Reed City, R. No. 5, Michigan

Shorthorns-Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Orum, Secy. Cent. Mich. Shorthorn Breeders' Assn., McBride, Mich.

SHORTHORNS Maple Ridge Herd, Established 1897. No stock for sale. J. E. Tanawell, Mason, Michigan.

BIDWELL SHORTHORNS

For Beef and Milk.

5 Bulls ready for service, 15 months to 2 years, for sale; also good Scotch-topped cows and heifers. Modern, sanitary equipment. One hour from Toledo, Ohio. N. Y. C. Ry. Visitors Welcome. Write us.

BIDWELL STOCK FARM
Box B, Tecumseh, Michigan.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos. 3 roan, 1 white, 1 red, price \$150. to \$250. 1 son of Maxwellton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

Bates Short orns the original milk strain young bulls 8 mos. old for sale. Price \$150 to \$200. J. B. HUMMEL, Mason, Mich.

Shorthorns. Bulls 9 mos. to 12 mos. old from good milking cows. Prices real reasonable. COLLAR BROS., R. 2, Conklin Mich.

Milking Shorthorns:—Bull calf 5 mos. by a Grand-son of General Clay, dam by a son of General Clay, \$150. A few females. E. E. BOOTH, Morrice, Mich.

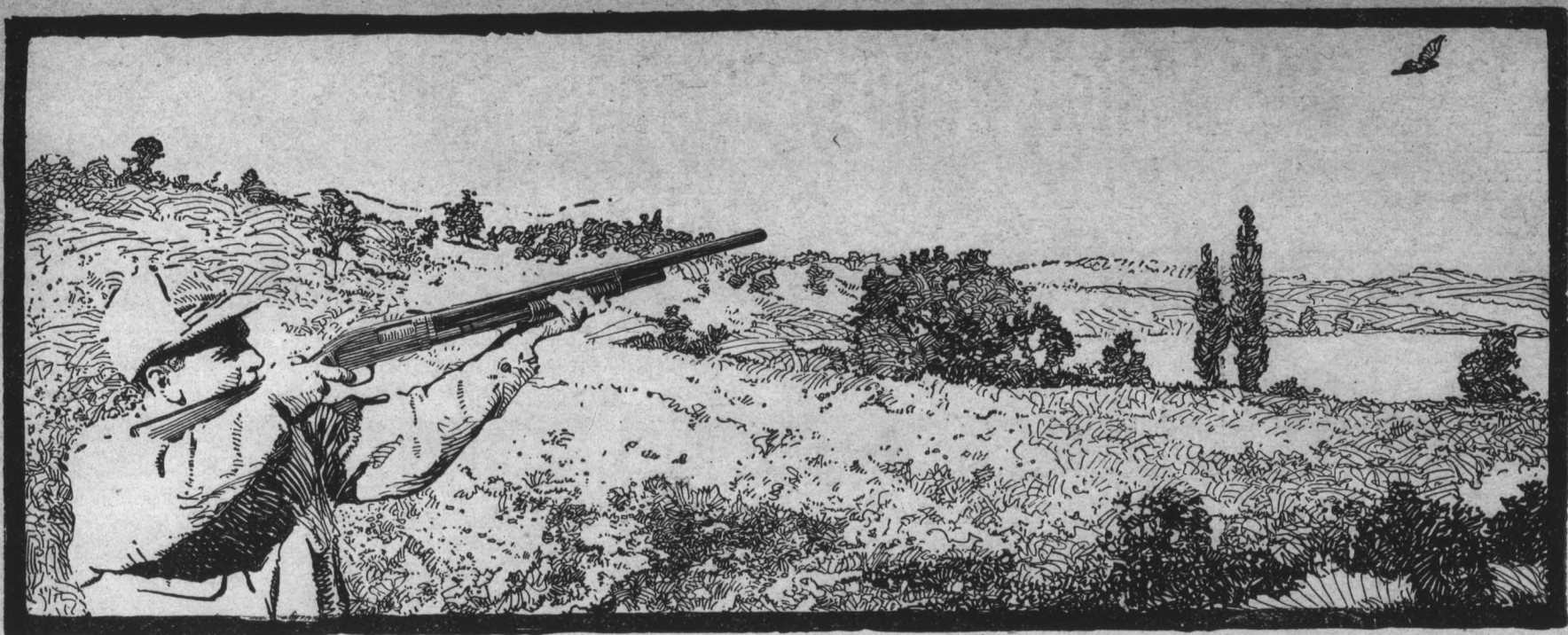
Registered Shorthorn calves sired by Diamond King 2nd. 410475, both sexes \$150. Twenty cows \$250 each. WM. J. BELL, Rose City, Mich.

For Sale Shorthorn Bulls 6 mo. to 2 years old from good milking cows. R. B. Clyde Station, H. J. DeGarmo, R. 6, Milford, Mich.

Shorthorns both sexes, herd catalogue mailed free. CHARLES R. HORRIS, Hart, Mich.

SHORTHORNS. Butterfly Sultan, half brother to International St. Champion, in service. For good bulls, cows, and heifers, W. B. McQuillan, Howell, Mich.

Additional Stock Ads. on Page 551



Winchester Model 12 hammerless
Shotgun, 20, 16 and 12 gauges

Why the 20 Gauge is Gaining in Popularity

Back in the '90s the 10 gauge was the weapon that had the call among American sportsmen.

But as the game became scarcer, there came a better sense of sportsmanship. The 10 gauge yielded to the 12 gauge.

Today, hunters who are in it for "Sport's Sake" are taking to the light 20 and 16 gauges—the true sportman's guns.

When you carry a 20 gauge, you're *playing the game* and you *earn* every bird you bring down.

Quicker action and better pattern with the 20 gauge

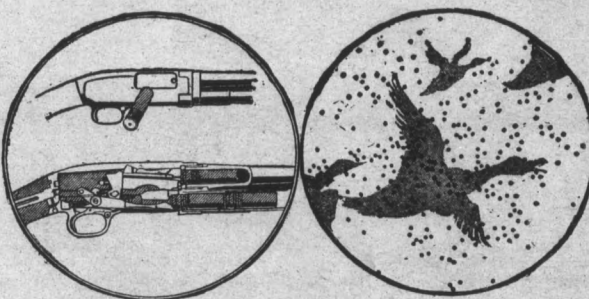
In the hands of a good shot, the 20 gauge has proved almost as effective a field gun as the 12 gauge. This is because in the first place, being lighter, it permits of quicker handling; you get onto your game faster.

Then, too, if you're quick, most of your shots at quail, snipe and prairie chicken will be at from 15 to 25 yards; at these distances the properly bored 20 gauge makes its best pattern, while the 12 gauge does not open up so as to give the shooter the full benefit of its larger load of shot until close to 40 yards.

The 20 gauge then can give you as good a bag as a 12 gauge if you handle it fast and get onto your game quickly. It's a sportier gun to work with.

A gun that few sportsmen can resist

The nicely balanced Model 12, Winchester 20 gauge with its slim, graceful barrel is a beautiful weapon and has a fascination about it few sportsmen can resist.



Quick feeder, sure ejector.
Throws empty shell to the
side out of your way.

Dense, even, hard hitting,
quick opening pattern of
the Winchester 20 gauge.

It works smoothly in whatever position it is held.

A man who has used this Model 12, 20 gauge Winchester; or its duplicate in the Model 97, 16 gauge—for those whose prefer a hammer action gun—for a few days of shooting, finds it hard to go back to his heavier 12 gauge.

The barrel is the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard of quality of the barrels on the highest or lowest priced Winchester guns. With Winchester the barrel is the gun and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel.

The Winchester barrel

The barrels of the Winchester Models 12 and 97 have been scientifically bored to micrometer measurements for the pattern they are meant to make. The degree of choke exactly offsets the tendency of the shot to spread. Until the pattern proves up to Winchester standard, the guns cannot leave the factory.

The Nickel Steel construction preserves the original accuracy forever. The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that, with proper care, will last a lifetime.

What means

This mark on the barrel means *Viewed and Proved Winchester*. This stamp stands for Winchester's guarantee of quality, with fifty years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times for smooth action and accuracy, and with excess loads for strength. At every stage of Winchester manufacture machine production is supplemented by human craftsmanship. It is a *test and adjustment process*.

It is this care in manufacturing that has produced in these two light gauge models, guns that have won the admiration of all true sportsmen who follow *Sport for Sport's Sake*.

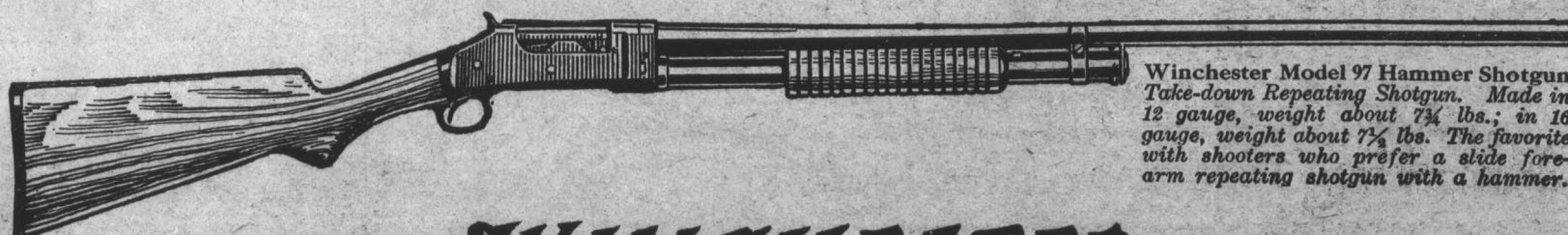
Write for details of Winchester shotguns, rifles and ammunition

The Winchester catalog is an encyclopedia on shotguns, rifles and ammunition. Every hunter should have one. It gives detailed specifications of the Model 12 and describes at length the principles on which every one of the world-famous Winchester rifles and shotguns is built. Write today. We will mail you a copy free, postpaid.

WINCHESTER REPEATING ARMS CO.
Dept. M-5 New Haven, Conn.

Home Defense Leagues!

We have a *Winchester for County and Home Defense Leagues* which is meeting with universal approval. Many Home Defense Leagues throughout the United States have already been equipped with this gun.



Winchester Model 97 Hammer Shotgun
Take-down Repeating Shotgun. Made in
12 gauge, weight about 7¼ lbs.; in 16
gauge, weight about 7½ lbs. The favorite
with shooters who prefer a slide fore-
arm repeating shotgun with a hammer.

WINCHESTER

World Standard Guns and Ammunition