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Making Better Farmers



Arthur Wiltse, a Saginaw County Boy who Graduated from Club Work as a Successful Hog Raiser.

What Boy Farmers are Doing

The average yield of shelled corn per acre for the State of Michigan is 32.5 bushels. The average yield of shelled corn per acre for the boys of Michigan in 1914 was 67 bushels. The best five boy corn growers averaged 94.36 bushels of shelled corn per acre.

The average yield of potatoes for Michigan is about 97 bushels per acre. The boys of Michigan last year averaged 224 bushels.

The average net profit per acre on corn for all of the boys in Michigan in 1914 was \$26.45. The highest net profit on one acre was \$84.90. This northern Michigan boy sells most of his crop for seed.



Kenneth Lord, a Newaygo County Boy in His Prize Corn Field.

MORE than two thousand Michigan boys and girls have undertaken some line of farm or home work for the coming season. Boys' and girls' agricultural and home economics clubs are being organized and promoted by the Michigan Agricultural College and the United States Department of Agriculture. During the coming season there will be club members in fifty counties of the state. It is the purpose of this article to tell something of the boys' club work; succeeding articles will describe the work being done by the girls.

The teaching of agricultural science has been looked upon with favor in Michigan for many years. In fact, this state was the first to establish an agricultural college for the purpose of training in the science and profession of farming. Michigan is also one of the pioneer states in the introduction of agriculture as a regular subject for high school students, and the rural schools of this state are compelled by law to give agricultural courses of study. Through these and many other sources, such as the agricultural press, the farmers' institutes, extension schools and extension lecturers, the gospel of good farming is being taught with vigor. And, it has seemed to many that already the field for teaching agriculture is overcrowded, notwithstanding the fact that agriculture demands the employment of nearly one-half our whole population and that without its fullest development all other branches of human endeavor must of necessity suffer. But, there is one phase of this movement for better farming which has been overlooked.

Agriculture is one of those peculiar subjects which cannot be taught successfully in the abstract. To know every part of a kernel of corn is good

mental training, but that knowledge does not necessarily make the boy who acquires it a better farmer. But to grow an acre of corn, to select the seed, test and plant it, then cultivate, harvest and market the crop—that is the kind of training that will make the boy a better farmer. And this is the basis for the junior agricultural clubs. They aim to teach better farming in terms of action. These clubs reach the boy in his early teens when his vocational tendencies are beginning to form. They give him an opportunity of proving his adaptability to this profession of farming.

When a boy joins a corn club he contracts to grow one acre of corn on his own farm, or on a rented acre, and to grow it according to the directions of the Michigan Agricultural College. He further agrees to keep an accurate account of all operations, costs and profits. So that, at the close of the year he not only has learned important lessons on practical corn growing but he knows a few of the business principles of farming. The club boy who has completed his project can tell how much it cost him to raise one bushel as well as one acre of corn; he can tell what the cost of horse labor and man labor is per acre; he will know his net profit per acre and per bushel of corn. In other words, he grows an acre of corn on the business

principles employed by the factory manager.

The value of having a boy undertake and carry out such a project must be apparent. In the first place it gives a practical training in some one phase of farming; secondly, it furnishes an experience in business management; and finally it offers the boy an opportunity to use the knowledge he has secured in the school room.

This latter point deserves further attention. The average boy is not impressed when the teacher or parent tells him that he cannot see the utility of certain studies now, but that some time in the future he will be glad that he mastered them. That argument has been used without effect probably since schools began. How much better it is to give the boy an opportunity of proving the utility of his studies while he is still in school! For example, in these agricultural clubs the boys soon learn that in order to carry out their projects they must read agricultural papers and bulletins, and they must read them intelligently. They also learn that mathematics has a direct relationship to the business of farming, and as soon as they understand this one of the driest and most difficult of studies takes on a new interest. In short, the practical farm project puts motive

back of the school curriculum, and when a real live farm boy sees the practical utility of school subjects it will not be necessary to coax, tease and compel him to remain in school merely to comply with the compulsory school law. He will go to school because he will know that the knowledge and training he gains there and applies to farming will make him a better farmer and a deserving business man.

What has just been said about corn applies equally to all of the other projects undertaken by these clubs. Michigan boys now have open to them the choice of the following club projects: One acre of corn; one-half acre of potatoes; one-fourth acre of alfalfa; one acre of beans; the care of one or more pigs; the care of a dairy cow; the care of ten bearing apple trees; hatching, brooding and rearing poultry; caring for a vegetable garden. These are the regular club projects but in some communities where special crops are grown, boys may undertake to care for a plot of whatever crop it might be. It may be a specified acreage of cabbage, cucumbers, or any crop for which there is a special home market.

When the boy becomes a member of one of these clubs he immediately receives a report blank and a sheet of instructions from the Agricultural College. He is then furnished with supplementary instruction sheets, bulletins and other material throughout the season. Usually each club is supervised by the local teacher or some other interested person. Where there are county agriculturists additional help is furnished in the way of lectures, demonstrations and field meets. During the winter months the clubs meet at the school, church, grange

(Continued on page 691).



The Bangor High School Agricultural Club Harvesting a Potato Crop.



At left a Calhoun County Boy who Grows his Corn without Assistance. In Center Newaygo County Agriculturist calls at a Rural School, and at the Right he is seen with School Children Giving a Practical Lesson in Corn Culture.

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DETROIT JUNE 26, 1915.

CURRENT COMMENT.

Very many farmers, interesting the if they will but be Boys and Girls. frank enough to speak their thoughts, will very readily admit that if they could have gotten a deeper interest in, and a better knowledge of agriculture during their boyhood days, they would have attained success and a greater degree of satisfaction in farming at a much earlier age. The average boy of a generation ago looked upon farming as little less than drudgery and many present-day boys take the same view, but where by any means a boy becomes interested in agriculture from a scientific as well as a practical standpoint, he will soon abandon this view and evince an interest in agriculture of which he would have been thought incapable before his interest was aroused.

Our first page article in this issue indicates the interest which is being taken in scientific and practical agriculture by some thousands of organized boys and girls in Michigan. The things which they have achieved as noted under the head, "What Boy Farmers Are Doing," are well worthy of the thoughtful attention of older farmers, the average of whose achievements suffer badly by comparison. But this fact that so many Michigan boys and girls are interested in agricultural problems will have a wholesome effect on our agriculture long before they become actively engaged in the field for themselves, because their fathers and brothers and others who observe these results will become aroused to make a deeper study of the underlying principles of successful agriculture and a better application of the knowledge which they have and can gain by the means at hand. This is indeed profitable work, and worthy of the support of every community as well as of the state itself.

Last week there seemed to be every prospect that the foot-and mouth disease quarantine would be permanently lifted and that our live stock markets would again be operated on a normal basis. The State Live Stock Sanitary Commission authorized a return to normal conditions and methods of handling stock at the Detroit Stock Yards, with the single proviso that cattle shipped out for purposes other than immediate slaughter must be shipped in cars which had been properly disinfected and inspected by the local representative of the Bureau of Animal Industry. Some stock was moved, but later orders came from Washington to withhold certificates as to the proper disinfection of cars, and the quarantine again

became effective so far as milch cows and feeder cattle were concerned.

It is, of course, the part of wisdom to prevent any possible revival of the epidemic of foot-and-mouth disease. The continuation of the quarantine after such danger is over is, however, bound to be a serious hardship to both cattle producers and the consuming public. Since it has been impractical to return feeder cattle to country points for many months, there is bound to be a big shortage in cattle later on with correspondingly high market prices. It will pay the general farmer better than ever before to feed his calves well from the start and make them into a first-class quality of baby beef. Quarantine regulations cannot interfere with this program.

Many rather radical changes are being made in the rural routes in this state by the post office department. The reason for the changes as stated, is to give rural free delivery service to a greater number of the country people of the state. A great many farmers who have enjoyed direct free delivery service are certain to be disappointed in the rearrangement which may leave their rural delivery boxes located at some distance from their homes.

The statement is made by some who are conversant with the progress of changes so far made, that the changes being made are in the interest of economy rather than efficiency, and that the patrons of the routes will realize this after it is too late to make any effective protest. The man who suffers from a change of this kind is likely to be biased in his opinion, even though the plan adopted were one which would meet the ideal of public service in giving the best service possible to the largest number of people.

It is undoubtedly true that the rural delivery routes in this state were established in a rather haphazard manner. The people who were progressive enough to get busy got the routes, and the postmaster who was working at the job got included among the routes from his office much territory which was naturally tributary to other post offices.

There is undoubtedly room for economic changes which would cheapen the service without lessening its value to the public. But whatever the outcome of the work now in progress, the rural route patron is subjected to considerable inconvenience during the process of changing routes since, where the change places him on a route from another office, the patron must notify his correspondents and the publishers of the papers and magazines which he takes, of his change of address. The Michigan Farmer has received a large number of these requests for such a change in address of subscribers during recent weeks. When requests of this kind come in large numbers it takes considerable time to handle them, so that notice should if possible be given at least two weeks before it goes into effect to avoid missing one or more copies of the paper.

Studies in farm management, such as have been conducted by the Department of Agriculture in co-operation with the various agricultural colleges, are both interesting and profitable, inasmuch as they reveal certain general principles which can be applied to successful farm management. But if one has an idea that the farm management problem is a simple one, all that will be necessary to disabuse his mind of that idea is to take a day's drive through the country at almost any season of the year. Such a drive at this writing would give the traveler a view of corn fields, for instance, which are partially covered with water on low, heavy or undrained ground. Going into more rolling coun-

try he would see other corn fields badly washed by recent heavy rains. Each of these conditions presents a farm management problem essentially different, and this is but one case in hundreds which might be cited to prove that the problem is very largely a local one after all.

However, the farm management studies which have been reviewed in these columns do indicate certain general principles which govern the problem. Labor income is after all the important factor, and when the labor of the farmer and his help is so applied as to yield the largest net returns, the farm management problem has been successfully solved in that instance.

It is well worth the while of any farmer to give this problem constant and deep study, having ever in mind the efficiency of man and horse labor applied upon the farm as shown by net results at the end of the season.

Summer schools are now held in practically all of our great educational institutions, from universities to normal schools. For example, there is now in session at the Michigan Agricultural College a summer school at which special emphasis is being placed on agricultural subjects. This session is of particular advantage to rural school teachers who have had no training in agriculture, since agricultural subjects are now required to be taught in the common schools, although instruction will be given in other departments and the school is open to students who desire additional work in any department. This is typical of the kind of work which is being done in the summer schools held at other educational institutions.

The position has been taken by the educators in charge and the authorities in control of these institutions, that with the plant and teaching force available, it ought to be kept busy for the benefit of the people of the state who desire to take advantage of the opportunities offered. This plan has worked so well that a number of prominent educators, among them our own superintendent of public instruction, have advocated extending the school year in all primary and graded schools for like use. This idea seems to have been well received in many quarters, and it is probable that it is a proposition which will be brought before the people of the state for their consideration at no distant date. Those who have given the proposition considerable thought concede that the plan has some merits, although it is probable that the great mass of public school teachers will not look upon the plan with favor.

With properly distributed vacation periods covering perhaps a month of the year and a shortening of hours for the lower grades, the plan might be feasible. It is at least a question which is likely to become a public issue at some future time, hence the desirability of considering it carefully so as to be prepared for intelligent action, should it become a public issue.

Securing the hay crop in the shortest possible space of time with the least amount of available help is a problem with which the average farmer is familiar. In this connection some investigations recently made by the office of farm management of the U. S. Department of Agriculture are of interest. One result of this investigation was the development of the fact that only a small percentage of the farmers in the eastern half of the country who grow from 15 to 50 acres of hay per year, have a definite or efficient method which is followed with such variations as may be necessary on account of weather conditions. This study of the problem also showed that the most efficient method of haying with a small gang is

to cut the hay in the morning and haul it the next afternoon, since this method involved the least idle time for men in the haying gangs. By this method two men working in the morning and three in the afternoon were able to secure about six acres per day of average hay.

It is, of course, difficult for the general farmer to adhere to any one definite plan in securing the hay crop; not only the weather conditions but the other farm work which demands attention at this season of the year must be considered. Then there is such a wide difference in the crop to be secured that no set rule can be adapted to all these varying conditions. With the more general production of alfalfa hay, another factor will enter into the consideration of the question, but this investigation shows that there is a wide difference in the economic distribution of labor as between the methods of haying ordinarily employed, that is the time of day at which the hay is cut and the method followed in curing it. Having these facts in mind, there is a farm management problem which can be profitably studied by the average farmer, to the end that the farm labor may be applied in the most effective manner at this busiest of all seasons of the year.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Teutonic allies are succeeding with their campaign against Russia but appear to be losing some advantages in the west and also in southern Russia. After seven weeks' battling they have driven the Russians back 150 miles to within a league of Lemberg, the capital of Galicia. Now the Germans and Austrians are moving against the entire Russian front with the hopes of demoralizing the Czar's armies. The Russians appear to be handicapped for lack of war supplies, which are reported to have been reduced a considerable degree by the activities of German spies, who have blown up several factories and armories where stocks were kept. Along the western front the Allies, particularly the French, are slowly gaining ground against the stubborn resistance of the Germans. The French have advanced their lines still further to the east at Souchez and made other successful attacks in northern France. The Italians got their forces beyond the Isonzo River last week in their campaign to drive the Austrians from Trieste, the important seaport on the Adriatic. Many small towns have already been taken and important heights were occupied after severe fighting. The campaign in the Dardanelles is progressing slowly. The Allies' fleets are greatly hampered in their attacks on the forts and in their attempts to assist the land forces by the submarines under the command of the Germans. The Turks have forwarded a large number of fresh troops and war munitions to the Caucasian district, where they are again active. Anti-German mobs recently attacked German factories in Moscow, Russia, and damage reported at \$20,000,000, was done.

The status of affairs in Mexico is as uncertain as at any time during the past year. Gen. Obregon recently left his command under Gen. Carranza, and last week Gen. Angeles, the right-hand man of Gen. Villa abandoned his superior and is now said to be in the United States. It is the hopes of some that these differences may result in a new alignment comprising the best elements of the Carranza and Villa factions which may form an organization of sufficient strength to obtain the recognition of the United States. It is rumored that a conference is now being held by prominent Mexicans in this country looking toward this end.

National.

As the result of a tidal wave at Atlantic City eight persons were drowned while bathing on June 20. Scores of others narrowly escaped, many being nearly exhausted in their battle for life.

Spanish-American war veterans from Michigan, Ohio and Pennsylvania held their annual reunion at Put-in-Bay on Monday. Six thousand comrades were present.

Three persons representing three generations of a single family were killed by a Michigan Central train near Eaton Rapids, Sunday.

John Burroughs, the naturalist, who has been seriously ill at West Park, N. Y., is reported to be improving and there is now hopes for his complete recovery.

POTATO NEWS IN MICHIGAN.

The second annual meeting of the National Potato Association will be held in Grand Rapids, probably late in November or the first of December, in connection with the annual meeting of the Michigan State Potato Association. C. W. Waid, of East Lansing, secretary of the Michigan Association, has charge of arrangements and the date and program will be announced later. This should be the greatest and best potato meeting ever held in the state. A. L. Hopkins, of Bear Lake, is president of the Michigan Association.

W. Stuart, of the U. S. Department of Agriculture, Washington, is secretary and treasurer of the National Potato Association, which was organized last year at Cornell University, Ithaca, N. Y. He was in Grand Rapids to assist in forming the Michigan Association and he came again last summer, accompanying the party of scientists and plant pathologists in field inspection work in various counties. Other officers of the national body include the following: President, W. A. Martin, Houlton, Maine; vice-presidents, E. H. Grubb, Carbondale, Col.; Dr. H. E. Horton, Chicago; L. V. Crandall, Port Huron, Mich.

Iowa, Michigan, Minnesota, New Jersey, New York and Wisconsin now have state organizations of potato growers, affiliated on the one hand with the national association and on the other with local associations throughout the rural districts. The national body was created to promote the potato industry in all its phases. Prof. Corbett, of the U. S. Department of Agriculture, was first to suggest the idea of a national organization to represent the industry as a whole and to bring together all agencies concerned in production, transportation, distribution and utilization of potatoes.

One important phase of the work this year will be the plan of state inspection and certification, as originated by the Department of Agriculture, which will be carried out through state and local organizations. The object, of course, is to produce potatoes that are free not only from diseases but from varietal mixtures as well.

How to Organize.

In Michigan it is essential, first, that the growers in any community shall organize, and there should be at least 12 members growing potatoes to start with. Secretary Waid or an assistant usually helps the local association at the start and urges first of all "one variety for each community and as few varieties as possible in the state." Potatoes that are uniform in size, form and color sell better in carlots. Applications for field inspection are to be filed with Secretary Waid, of East Lansing, and it is a case of "first come, first served." The state association will arrange to inspect a quarter of an acre of potatoes on each farm owned or leased by each member of a local association. Three inspections will be made, once at blooming time when varietal mixture is best detected, again before harvest and lastly before potatoes are shipped. Diseased hills are removed at inspection and at digging time the grower will be assisted in selecting the best hills in the inspected area. County agriculturists where they are employed, will assist in this work. The department at Washington is advising that all seed potatoes be bought on the basis of field inspection and it is suggested that growers get into the game at once, since the 1915 crop of certified seed is likely to be short and in active demand.

Yield and Production Cost.

Michigan stands next to New York, and some years ahead, or first in the union, in quantity of potatoes grown, the average yield being around forty million bushels. With average yield per acre in Michigan of 100 bushels, many growers are producing yields of

200 to 300 bushels, indicating that many others are falling below the 100 mark. Cost of production varies but is probably around 25 cents per bushel on the average.

The work of starting local branches of the state association is going on. Barry county growers recently organized at Hastings, and Allegan county growers at Plainwell. Plainwell growers adopted the Russett Rural type of seed. Houghton county growers have re-elected officers for 1915. One Houghton member received \$1 per bushel for Sir Walter Raleigh seed and another one \$1.50 for Irish Cobblers during the past year. Wexford county is in line with local associations at Cadillac, Manton, Buckley and Mesick, the Mesick organization requiring its members to plant at least an acre of treated seed, using formaldehyde to avoid scab. St. Clair county growers were first to organize and to adopt standard varieties of early and late types.

The state association suggests as standard early varieties the Irish Cobblers and Early Ohios, while standard late varieties include the rural types of Sir Walter Raleigh, Rural New Yorker, Russett Rural, and Carmon No. 3, also the Green Mountain types, including State of Maine, Vermont, Gold Coin and Uncle Sam.

Kent Co. ALMOND GRIFFEN.

MAKING BETTER FARMERS.

(Continued from first page). hall, or some other convenient place. At these meetings regular programs are carried out; members discuss various farm problems, engage in debates, games, contests and other ac-



Niles Hagelshaw, of Calhoun County, who Netted \$70 from his Chickens in One Season.

tivities which tend also toward making the club the nucleus for the social life of these young people. Thus are the farmers of the future being trained for their profession which is becoming increasingly complex, and thus are the Agricultural College and the Department of Agriculture attempting to counteract such influences as attract boys from the country to the city.

CROP AND FERTILIZER QUESTIONS.

Summer Fallow or Buckwheat, Which?

I have about eight acres I would like to sow to wheat this fall and have just finished plowing the same. It is a timothy sod, not very heavy, and the land is in a run-down condition. Which would be the best plan to follow, to summer-fallow or sow to buckwheat and when in blossom plow it under? If the latter, when would be the best time to sow and how much to the acre?

Montcalm Co.

R. S.

Summer fallowing is entirely out of date; I cannot imagine anyone advising this practice now. People used to do this, largely because they could break the ground after the spring crops were all planted. It gave a man time to do what he could not do earli-

er, and of course it makes a good seed bed for wheat. The working of the soil during the summer, firms the lower portion of the plow slice and makes a fine mellow surface. But the working of the soil during hot weather is very exhaustive to humus.

Summer fallowing has been practiced sometimes to destroy some persistent weed like Canada thistle, etc., but with modern tillage tools these nuisances can be taken care of with hoed crops, like corn, beans, sugar beets, etc., and grow a crop to pay for the labor of killing them.

My advice would be to sow to buckwheat and harvest it for grain and then disk the ground thoroughly and sow to wheat and then seed to clover; shading the ground during the hot weather with the buckwheat will be better than summer fallowing, and you are growing something to pay for your labor. Use 250 pounds of good fertilizer with the buckwheat and you will, the season being at all favorable, get a good buckwheat crop, a good wheat crop and a good stand of clover, and you have improved your land more than by summer fallowing, and probably as much as by turning the green buckwheat down.

The buckwheat should be sown from June 20 to July 10, when conditions are best. One bushel of seed is a great plenty per acre. Some sow only three pecks. I raised 22 bushels of buckwheat per acre last year, sowing July 9 after harvesting Alaska peas for the canning factory.

Dragging or Disking Alfalfa.

We have about four acres of alfalfa that is very thick but very short. Do you think it would be good policy, as soon as we take off the first crop, to disk it or harrow, or would it be better not to do anything to it?

Presque Isle Co. G. F. K.

I am quite sure that it is a good plan to use a spring-tooth harrow on alfalfa after it becomes well established or rooted. There is little danger of destroying the alfalfa, and this harrowing will destroy June grass and weeds that are prone to come into the alfalfa field.

I am not sure that the short growth of alfalfa is due to the fact that you have a thick stand. I would rather believe that it is due to dry weather or lack of plant food or cold weather. That the stand is thick is nothing to be discouraged with. This will remedy itself. It will be an illustration of the survival of the fittest. My advice would be to cut the alfalfa and then manure it, either with stable manure or commercial fertilizer, or both is a better practice, as one manure balances the other.

It may be also that the land needs lime; if so apply one or two tons of ground limestone at same time, then it will be a good thing to harrow with spring-tooth drag. I would not use a disk on alfalfa. It bruises and cuts the crown of the plants and injures them.

Seeding Clover in Buckwheat.

I have a field of heavy ground that has been cropped for several years and which I wish to get seeded to clover. Have thought of sowing to buckwheat and seed in that way. What do you think of the plan? Will buckwheat loosen up the ground and will I be apt to secure a catch or is there a better way? At what time should I sow?

Allegan Co.

E. E. J.

Clover can be successfully seeded in buckwheat in an ordinarily favorable season. If this land has been somewhat run, as suggested, a more certain way at this season of the year would be to prepare a good seed bed and sow clover alone without a nurse crop. Buckwheat may be sown with prospect of good results up to July 4.

COLON C. LILLIE.

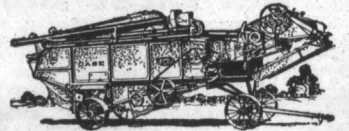
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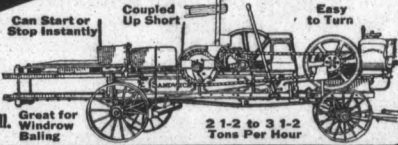
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Orchard Soil Management

It is generally conceded that the cultivation and cover crop method is the best treatment for the orchard soil. We have exceptions to the general rule which are successful. Ver-gon, of Ohio, Hitching, of New York, and a number of growers in this state have demonstrated that the sod mulch method is successful under certain conditions.

The Pennsylvania Experiment Station has also demonstrated through experiments which have been carried on for a number of years that the young trees grown in sod mulch, the mulching consisting of strawy manure, gave the best results for them. Their conclusions as the result of the experiments were that the mulching of the row and the use of tilled intercrops, such as potatoes, corn, peas and beans for the first seven years was the most efficient and economical method of caring for the young orchard. The intercrops often bring in returns of \$40 to \$50 per acre in favorable seasons, and will cause no injury to the trees on good tillable soil. Thoroughness Necessary for Successful Mulching.

While the mulching method may be adaptable to a wider range of conditions than we now realize, the chief objection to a greater use of it would be the inability of most fruit growers to get enough material to practice the method successfully. Thorough mulching is the essential in successfully carrying on this method.

Better control of the growth of the trees and the moisture of the soil can be had by properly using the cultivation and cover crop method of orchard soil care. To follow this method efficiently the objects to be attained by it should be thoroughly understood. Very often we carry on our common practices without thoroughly having in mind the principles involved.

The object of cultivation in the orchard is to conserve the soil moisture and make available the plant food in the soil. We should aim to attain early growth on the trees and then during the latter half of the growing season permit this growth to harden up for the winter. We should therefore start to cultivate early in spring to stimulate the growth and also to conserve the moisture from the spring rains. If we can get the orchard in good tilth before the blossoming time so much the better, but if we wait a month or six weeks after, it is usually like locking the barn after the horse has been stolen.

Maintain a Dust Mulch.

The cultivation should not be done in a half-hearted manner, as cultivation half done is little better than none at all. Packed down, bare ground will lose as much or more moisture than one with sod on it. The season for cultivation is a short one and a man should make every effort to maintain a dust mulch on the surface throughout the entire time the orchard is cultivated.

The time to stop cultivation depends, to an extent, upon the season. Some seasons are better growing seasons than others and in such cases the cultivation should cease earlier than others. The accepted time in the past has been about the first of August but the tendency now is to stop earlier, or about the fifteenth of July, except in very dry seasons. In very good growing seasons the first of July would be a good time for putting in the cover crop. There are some growers who have soils which make a vigorous growth of tree who stop cultivation when many others are starting, or about the fifteenth of June.

The Importance of Cover Crops.

The use of cover crops is just as important as cultivation and many of us fall down on this because we do not realize the necessity and value of cover crops. They greatly help in

hardening up the wood of the tree by taking some of the moisture and plant food from the tree. It is highly important that the wood ripen up thoroughly each year in order to keep the trees healthy. When trees go into the winter with soft wood we make them more susceptible to winter injury, canker, blight, and numerous other diseases.

Cover crops are also the chief means of maintaining the physical condition of the soil. Cultivation uses up the humus and unless it is replaced the soil will become "dead" and will lose to a great extent, its ability to retain moisture. On the other hand, soils may also have too much humus in them and will tend to produce a large growth of tree at the expense of fruit bearing. By the proper use of the cover crop we can have under control to a great extent, the physical condition of the soil. When humus is needed a legume cover crop, such as clover or vetch, should be used. If none is needed oats or some crop which dies down with the frost, should be used. Rye is of advantage if the soil is packed or of a clayey nature, as it will tend to loosen up such a soil.

The Cover Crop a Protection.

A third benefit derived from the use of cover crops is the covering of the ground during the winter. Ground that is well covered in the dormant season is more fertile in spring than that left unprotected. Snow has been called the poor man's manure because of the protection it gives the soil. The greater fertility of ground covered during the winter is undoubtedly due to the fact that there is slight bacterial action going on in the soil under this protective cover.

In the future when the fruit grower desires to bring his orchard to a higher state of productivity and becomes more efficient in the care of the orchard he is going to give serious attention to the control of the growth of the tree and the chief means of obtaining this control will be by the proper use of cultivation and cover crops.

TROUBLE DEPARTMENT.

The Green Fruit Worm.

Some of my pears and apples have shallow, irregular holes eaten in them. Can you tell me what the cause is and how to prevent it?

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G. H.

The green fruit worm is undoubtedly the cause of the damage to your young fruits. This is a long light-colored caterpillar which attacks the fruit early in the growing season. Besides attacking the pear and apple it also occasionally does damage to the strawberry.

The ordinary early spraying will usually keep this insect in check, especially if a poison is used in the application just before the blossoms. If the poison is not used in this application, in most seasons the fruit worm will develop in size so that it will be resistant to the poison used in the after blossom sprays, and heavier applications of poison at that time will have little effect.

These worms are rarely very serious but if they are they can only be controlled by parring them from the trees and killing them on the ground.

BOOK NOTICES.

"The Principles of Fruit Growing," the standard book on the subject of fruit growing, by L. H. Bailey, is issued in its twentieth edition, completely revised and rewritten. It gives the advanced opinions of the day on everything pertaining to the culture of fruit which makes it of value to all fruit growers. It is published by The MacMillan Co., contains 432 pages and numerous illustrations, and can be ordered through the Michigan Farmer for \$1.75.



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Growing Baby Beef

ONE of the special topics announced for discussion in the Michigan Farmer for this year was "Baby Beef as a Specialty." Whether or not it will pay the average general farmer to make a specialty of baby beef production is essentially a local problem. But every farmer finds it necessary to keep some cows, and for this reason, should be interested in baby beef production as a side line if not as a specialty, for there is no doubt that the calves can be made into baby beef at a substantial profit. On the other hand, it is probable that if they are handled in any other manner they will fail to return a profit on the investment in their feed and care, and may even be grown at a loss.

The average farmer would do well to follow the lead of experienced feeders in this method of turning the calves into money. The following reasons were among the most logical brought out by an inquiry conducted by the U. S. Department of Agriculture:

First. The younger cattle make more gains on the same amount of feed than do the cattle with more age. To get such gains, however, it is necessary that the calves be pushed from the time they are dropped. In addition to the milk the calf gets from its dam, it should be given a grain ration just as soon as it will begin to eat. As expressed by one feeder, "the calf should be fed so that it will never know when it is weaned."

Second. The money invested in cattle is turned faster. Under old range conditions money invested in cattle was realized upon only once in from three to five years. By feeding out calves as baby beef, money can be turned in 18 months.

Third. By feeding as yearlings the herd to be maintained on the farm is smaller, and pasture, forage, grain, etc., which were once used for yearlings and two and three-year-olds can now be used to increase the number of cows kept.

Fourth. Open heifers find just as ready market as the steers. This is true in no case after the time the heifers have passed the two-year-old stage. Yearling heifers finish out even more rapidly than do the steers and marketing them at this age is a big advantage since there is no other time in their lives when markets will treat them as favorably.

Fifth. The baby-beef market at the present time is the most stable of all the cattle markets.

Baby beef has, during the past few years, had a market all its own, and probably in most cases regardless of other cattle market conditions. Baby beefs will not take on as high a degree of finish as will two-year-old cattle, but nevertheless the yearlings with somewhat less finish have usually sold at a higher figure than two-year-olds.

During the past few years the Christmas market has been very favorable toward all cattle with quality and prime finish, quite a proportion of which are baby beef. Most of the baby beef, however, goes on the market during the months of May, June, and July. The market at this time is generally good, and in fact generally stays good throughout the summer months when few prime cattle are for sale. Most of the cattle offered are half-fat yearlings.

The specialist in baby beef production will find it advantageous, if not necessary, to let the calves run with their dams. The general farmer who keeps a few cows and raises the calves, will not be able to follow this method and will find it necessary to feed very carefully and intelligently. The calves should be started well on whole milk and after skim-milk is substituted for whole milk it must be sup-

plemented by the addition of some feed to replace in large measure the fat taken from the milk. Flaxseed meal boiled to a jelly is the best available supplement for skim-milk to feed young calves. Later corn meal may be added in sufficient quantities to balance up the milk, and other grains may also be used to advantage to give variety to the ration.

Liberal feeding, as well as judicious feeding is necessary to insure a rapid growth and a desirable covering of flesh. The man who has never fed calves for an early finish will be astonished at the amount of grain that such calves will eat. The first bunch of calves the writer fed to baby beef finish consumed a daily grain ration of 16 pounds of mixed corn, bran and dried beet pulp when on full feed. But they also gave a good account of the feed, making a cheaper gain than any other lot of cattle we ever fed out.

The man who would produce a choice quality of baby beef must keep the calves well covered with flesh from birth to maturity. This, after all, only involves intelligent feeding from start to finish. Different feeders may use different methods, but all must feed judiciously and with a liberal hand if they would attain desirable results.

Oakland Co. A. R. FARMER.

GROWING PIGS ON ALFALFA.

Some growers claim that they can produce pork profitably upon alfalfa without the use of grain. It is possible that this can be done, but I have yet to see pigs attain satisfactory weight at six months of age which have had nothing but alfalfa pasture. I have purchased such pigs in the fall for feeding purposes that did not weigh over 65 to 80 pounds at six months of age. A pig that has been fed all that it will eat from birth should weigh 200 to 225 pounds at that age. The pig that does not weigh over 75 to 100 pounds in the fall has been stunted, and the resulting gains will not be satisfactory when the pig is put upon feed for finishing out. The frame growth will have stopped to a certain extent, and, while they will lay out fat, they will not make the gain per day that thrifty pigs will make.

The experience of several states shows that the most economical ration, from the standpoint of return for money expended, is grain to the extent of one to two per cent of the live weight of the pigs, the pigs meanwhile running on alfalfa pasture.

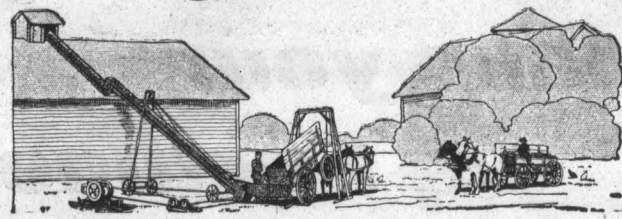
The only conditions under which this method of handling might not be profitable would be when the market was so extremely low that there would be no chance of getting out a profit where any grain was fed. If indications pointed to a stronger market in a few months, then the pigs could be run on alfalfa alone without grain in order to tide them over the period of low market, but with reasonable market conditions, it pays to feed some grain with alfalfa pasture.

It is best not to pasture too many hogs to the acre, and best not to allow them upon it when wet, as they tramp and root the alfalfa and kill a good many of the plants. Alfalfa pasture that is handled properly will maintain its stand for four or five years with hogs upon it, which is a sufficiently long period.

Colorado. G. E. MORTON.

On recent hot days hogs marketed in Chicago showed big "fills," and one load of hogs showed 200 lbs. gain over their home weights, while a car of Iowa hogs that were weighed "empty" off the cars, after being filled, showed gains of 280 lbs. A large feeder from Iowa, brought in a load of hogs that weighed 100 lbs. more than at Bagley.

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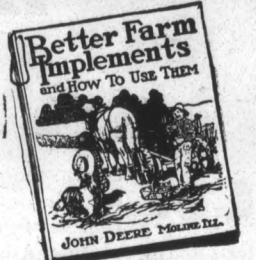
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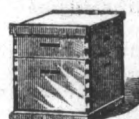
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The Care of Young Chicks

A LARGE number of farmers make the serious mistake of rearing their chickens year after year on the same ground in the same back yard. Would they think of raising corn year after year on the same ground? Would they for a minute think of leaving the cabbage plants in the hot-bed and expect a good crop of solid headed cabbage heads? Would they think of rearing their colts, calves, or lambs in the barnyard? The fact is they would not dream of doing such a thing, but when it comes to raising chickens, they do the very thing; they keep them in the small coops, large for them when a day old, but entirely too small for them after six or seven weeks of age.

I earnestly urge all farmers to give their growing chickens a fair chance with the rest of their live stock. This can only be done by rearing them under similar conditions. Raise them on fresh ground each year. By this I mean that if you have been rearing them in the back yard last year, I would raise them elsewhere this year.

Separate Cockerels from Pullets.

As soon as they are weaned or can do without heat, move them into larger movable colony houses, unless the house in which they were started is large enough to comfortably accommodate them to maturity.

Separate the sexes as soon as they can be distinguished, placing each by themselves. Both will do better. The pullets especially should not be crowded nor those males intended for breeding purposes the next year.

Examine them carefully for lice and mites. If any head or body lice are found, grease them all slightly with carbolated vaseline or common grease. We prefer this to dusting them with a lice killer. To kill the mites, spray the entire interior of the house with some good disinfectant or use the fumigation method. Mites multiply very rapidly during hot weather and a continual warfare against them is necessary to keep them under control.

The chicks should be taught to use the roosts as soon as possible, the sooner the better. They always grow better when roosting than when crowding into the corners of the house, which they are apt to do. We have also noticed that chicks taught to roost early grow a much better coat of feathers; hence can stand the cold better. Their roosting on the floor causes many diseases like roup, cold, sore-head, indigestion, and rheumatism. It also causes leg weakness and crooked breast bones.

Colonizing the Chicks.

One of the best places we like for our growing chicks is in the houses scattered over a corn lot, placing the houses far enough apart to prevent the occupants from intermingling too much. A distance of 100 feet each way is about right. If the corn is small when the chickens are moved upon it, it is advisable to plant some rape near the houses to prevent the chickens from injuring the corn.

Another good place for the pullets is in houses colonized out in a large orchard or woodlot, where they have plenty of range, grass, and shade. If a brook or stream should wind its way through the orchard or woodlot, the location would be about ideal. Keep the grass cut short.

One year we placed our movable colony houses along the banks of a brook that never went dry. Here it was necessary for us to put up artificial shade, because natural shade was not available. The way we did it was to make a frame 6x12 feet out of six-inch boards. This frame was placed over growing chicks kazemier... ed on legs about 18 inches from the ground, sloping towards the south. The frame was next covered with hay and either wired down or weighed

down with fence rails or rocks. Castor beans also make desirable shade. All of the movable colony houses of various sizes are blocked up from the ground about 12 inches; this provides a retreat for the chicks when attacked by hawks or crows, and to provide shade. Growing stock in order to do well require plenty of shade, fresh water, and green grass.

Swamp a Good Foraging Place.

One year we raised our growing chicks along the edge of a swamp and to say the least, we never raised a better flock of pullets. That year it was rather dry and the greater part of the swamp was dry during the latter part of July, August and September. Early in the morning we would let the chickens out of their roosting house. The way they made for the swamp was indeed interesting. It is a fact that a good many were so anxious to get there that walking was too slow for them; so they used their wings. Every blessed one of them made straight for the swamp as soon as released from the coops in the morning. A large number of them stayed there all day and others only came up to the dry mash hoppers occasionally. So by fall a large number insisted on roosting in the trees and on brush piles in the swamp. This was a disadvantage to some extent. Another disadvantage was that weasels and minks killed a few, although we made it a point to regularly go through the entire swamp with a good dog and shot gun several times a week. In this swamp it was cool, especially the ground, and they just loved to dig in it. Here they found all kinds of insects and bugs and had plenty of shade and water.

Hopper Method of Feeding Preferred.

Our growing stock is always fed by the hopper method. A large self-feeding, non-wasting, non-clogging, wooden outdoor hopper is placed half way between two colony houses. These hoppers will this year contain the following grain mixture: Sixty pounds of corn, kafir or milo, 30 pounds of heavy oats; 30 pounds of barley and 30 pounds of good grade wheat screenings. The following dry mash mixture is found in another compartment of the same hopper: Sixty pounds of corn, kafir, or milo meal; 60 pounds of wheat middlings, 30 pounds of wheat bran; 20 pounds of oil meal or cotton seed meal; 40 pounds of beef scrap, and one pound of salt. Grit, oyster shell, and fine granulated bone is kept before them all the time in separate compartments of the same hopper. They are fed all the milk, sweet or sour, that they will consume.

New York. **F. W. KAZMEIER.**

DISINFECTING BEE HIVES.

Last summer I lost a colony of bees which I believe died of foul brood. How can I disinfect the hive so it will be safe to put another swarm of bees into it?
C. E. W.

Whenever a colony of bees die from disease, the bee-keeper should render the combs into wax, burn the frames, and then with a gasoline blow-torch, thoroughly scorch, all over, the inside of the hive body, and also the bottom board and the cover. If cloth is used as a super cover, burn this. It is not necessary to char deeply, just so long as the entire surface is touched.

Another way which some bee-keepers practice, and which is reliable, is to boil the cover, hive bodies, and bottom boards for not less than ten minutes. This is quite as effective as the former method, but generally speaking it is easier just to char the surface of the woodwork rather than to risk the wood warping by the boiling. The frames can be treated exactly the same as the hives, but in most cases it is cheaper to destroy them entirely and purchase new frames.

Mich. Ag. Col. **F. E. MILLEN.**

Dairy.

CONDUCTED BY COLON C. LILLIE.

CO-OPERATION BETWEEN DAIRY-MAN AND SANITARIAN.

A fact that is often lost sight of when we consider the milk question from the consumer's as well as the sanitarian viewpoint is, that dairying is not an altruistic enterprise managed for pleasure or for the good of the public. The fact is that a great majority of dairymen are compelled to make dairying pay in order to make a living. Some are finding it hard work to make it pay, even in places where they are favorably located, by this I mean those having good farms and near some good market. Recent investigations from several sources have plainly shown that when a farmer depends mainly on the sale of market milk, he does not make much more than the hired man's wages. In the first place, good cows are scarce and hard to get, even at good prices. It is a hard matter, unless the dairyman raises his own herd, to replace his worn-out or non-producing stock. Another thing to consider is, that the cost of feeds have increased enormously during the past few years, and without a corresponding increase in the price of milk. The labor question is getting to be more perplexing on the dairy farm than is found with other types of farming. This is because many of our hired men of today will not hire where milking is the chief work to be done.

Essentials of Profitable Dairying.

To sum up, the essentials in profitable dairy farming are as follows:

First, a good fertile farm, well located in relation to the market it is to supply. Second, a good producing herd, and, of course, this must contain cows that are of some good strain and each cow must be a profitable producer. Third, and most important of all, a man capable of managing a dairy farm and the herd. Such men must have the ability to see that a greater part of the feed is raised upon the farm, and this is very important on any dairy farm, no matter where located. The manager must have the ability to see that this feed, once produced, must be fed only to productive cows and to the best advantage, and finally he must either have the ability to produce a special milk or dairy product for which he receives a good price, or else he must raise a number of other cash crops on the farm. A good side line on many dairy farms is excellent, where the trade is not large and time permits. Of course, the location will largely govern this.

Expensive Equipment Not Necessary.

In considering the question of a pure milk supply, I find it is not essential to have an elaborate or expensive equipment. It is, however, absolutely necessary to see that the milking is done in a barn as free from dust and odor as possible, also that the cows' udder and teats are clean, that the milkers' hands are clean and that the milking is done in sterile pails and the milk kept cool. In brief, I would say that care and cleanliness, from cow to consumer, will insure a pure milk supply.

There is also a co-operative, or better still, a social duty involved in this dairy problem.

It is up to our agricultural press, and our experiment stations to show the dairy farmer how to make his farm pay better.

It is up to our sanitarians to enlighten the ever-consuming public that if they want a quality product it is absolutely necessary that they be willing to pay a quality price for it.

And again it is up to our dairy inspector not only to know the rules of

the board of health, but the fundamental rules of agriculture as well. His attitude must not be dictatorial and that of an official, but rather he should comprehend the difficulties involved in making a dairy farm pay its way to advantage. If the inspector's attitude is a little more sympathetic and helpful, the farmer will at once appreciate this and will extend to him the glad hand of a fellow worker.

The Profit in Sanitary Dairying Should be Demonstrated.

It is an old saying that knowledge placed into action will produce results, and it does. Now if our leaders in agriculture and sanitation will get together and show just how pure milk can be produced at a fair margin of profit, something of great importance will have been accomplished and it will not be long until the practical dairy farmer will put that knowledge into action and a pure milk supply, better than perhaps ever before, will be the final result.

Good dairy managers have done much toward the pure milk situation everywhere and let us continue to encourage this as it is quite important to all concerned. H. W. SPOPE.

STREAKED BUTTER.

I would like some information in regard to butter. My butter is streaked in spite of all we can do. We have ripened it by heat and also by letting it stand, and it is streaked either way. Macomb Co. E. L. B.

Streaked butter is caused by the salt not being evenly distributed or worked through it. Stop churning when the butter comes in granules the size of grains of wheat, wash out the buttermilk and then apply the salt, stirring it in thoroughly with a wooden work is best. Then gather in larger masses and let stand until the next day in churn or butter bowl and then rework. The reworking will distribute the salt evenly and there will be no light-colored streaks.

BRICK CHEESE.

I wish you would inform me as to the method of making brick cheese that weighs about five pounds. In what way does it differ from the large round kind? Benzie Co. A. S. W.

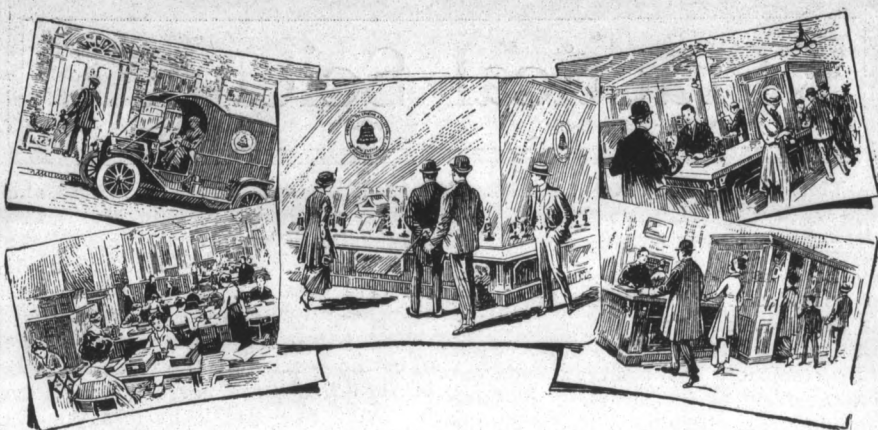
There are numerous kinds of brick cheese, also small round ones. All cheese must be made by pressing the curd after the casein has been coagulated by rennet, into a solid mass. Soft cheeses are not pressed as much so are not of so close a texture. Brick cheeses are formed by means of wooden or metal molds for the purpose. So are the round Edam cheese, only these molds are round. Some of the soft club cheese are simply pressed into jars, etc., and are so soft they must be eaten with a spoon. Soft cream cheese is scarcely pressed at all, simply molded with a ladle.

ALLOWING CALVES TO RUN WITH DAIRY COWS.

What do you think of letting a dairy cow bring up a couple of calves instead of milking her during the summer? I am short of pasture this season and have thought of renting from another man and having each cow feed one or two calves. This would make my work much lighter. It seemed to me I had read something on this subject a few weeks ago, but I fail to find the paper. Tuscola Co. G. A.

It is absolutely wrong to allow the calves to fatten on dairy cows. It nearly always spoils the cows for dairy purposes. You cannot depend on calves to milk for you. The cow gets into the habit of having the calf milk, and she does not like to have a man substituted its place, and she will not yield the flow of milk she would had she been milked by hand.

If necessary to fatten the calves on cows this summer, I would sell both calf and cow as soon as they get fat, for beef, unless you can afford to keep cows just to raise these calves.



Doing Business with a Business Concern

The business man is an important factor in your daily life and happiness.

He may raise wheat or cattle; he may manufacture flour or shoes; he may run a grocery or a dry-goods store; he may operate a copper mine or a telephone company. He creates or distributes some commodity to be used by other people.

He is always hard at work to supply the needs of others, and in return he has his own needs supplied.

All of us are doing business with business men so constantly that we accept the benefits of this intercourse without question, as we accept the air we breathe. Most of us have little to do with government, yet we recognize the difference between business methods and government methods.

We know that it is to the interest of the business man to do something for us, while the function

of the government man is to see that we do something for ourselves—that is, to control and regulate.

We pay them both, but of the two we naturally find the business man more get-at-able, more human, more democratic.

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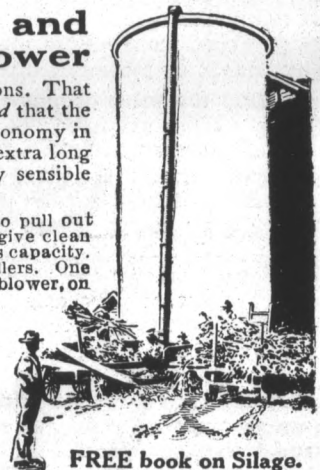
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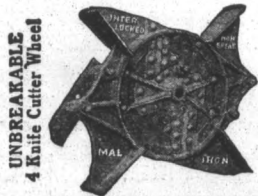
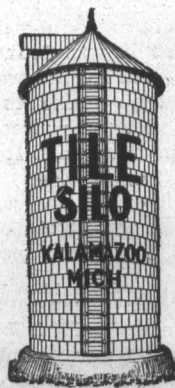
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Practical Science.

THE HIGH COST OF LIVING.

BY FLOYD W. ROBISON.

There has been given a great deal of consideration in the last few years to the question of the high cost of living among all of our people. That this condition has been as apparent on the farm as in the cities we have not doubted, although perhaps on the farm the effect is temporarily less noticeable.

It is undoubtedly apparent that in any consideration of this kind a statement is to be viewed entirely in a comparative sense. What we mean by this is that there is no hardship involved or no unusual condition brought about if the purchasing power of the fundamental unit is as great one year as it is another year; in other words, if a man's labor for one day will purchase as great a supply of commodities one year as it does another then the price of those commodities is immaterial except in the case of persons who are out of employment. The question has been asked repeatedly, "Has the purchasing power of the farm crops kept apace with the increased prices demanded?" The United States Department of Agriculture has undertaken to answer this question and in the Farmers' Bulletin No. 645, over the signature of Mr. Murray, assistant chief of the bureau, a very timely summarization of these conditions is given.

Purchasing Power of Farmers.

The purchasing power of the farmer depends not only upon the money value of what he produces, but also upon the money value of what he buys. From 1899 to 1909 (census years) the money value of one acre of the farmer's crops increased 72.7 per cent, but in the same period the money value of the articles usually purchased by the farmers had increased 12.1 per cent; consequently, as a result of the greater increase in the price of what a farmer sold than in the price of what he bought, the net increase in the purchasing power of the produce of one acre was 54 per cent, that is, one acre of the farmer's crop in 1909 could buy 54 per cent more of the articles usually bought by farmers than in 1899.

In 1913 the value of one acre of the farmer's crops averaged about 1.2 per cent higher than in 1909, whereas the value of articles bought by farmers had advanced in the same time about 5.7 per cent; consequently, as a result of the greater increase in the price of what the farmer buys than what he sells, the actual purchasing power of one acre of the farmer's produce in 1913 was about 4.3 per cent less than in 1909.

Similar data for 1914 have not yet been secured, but it may be safely presumed that the purchasing power of one acre of the farmer's produce in 1914 is at least five per cent less than five years ago. In short, there was a material increase in the purchasing power of farmers from 1896 to 1909, but since 1909 there has been a check to this rapid increase, with some reaction downward.

The above estimates are based upon the value per acre of all the important crops combined. Considering corn, wheat, and cotton separately, it is found that the purchasing power of one acre of corn in 1913 was about 12 per cent greater than in 1912, one per cent greater than in 1909 and 58 per cent greater than in 1899. The purchasing power of one acre of the 1914 corn crop is probably about two per cent greater than that of the 1913 crop.

The purchasing power of one acre of wheat in 1913 was the same as in

1912, 24 per cent less than in 1909, and 40 per cent more than in 1899. The purchasing power of one acre of the 1914 wheat crop is probably about 34 per cent greater than that of the 1913 crop.

The purchasing power of one acre of cotton (excluding the value of seed) in 1913 was three per cent less than in 1912, five per cent less than in 1909, and 40 per cent more than in 1899. The purchasing power of one acre of the 1914 cotton crop is probably about 35 per cent less than that of the 1913 crop.

Upon the basis of the purchasing power of the value of one acre of produce, the year 1909 stands as the most prosperous for farmers of the past 50 years for which there are records.

COST OF PRODUCING FIELD CROPS.

In a report received recently by the Department of Agriculture from the New Jersey Station, figures are given of costs of production of various field crops, derived from carefully kept records on the station farms.

Record of a nine-acre field of alfalfa show the average cost of producing hay per acre to have been \$19.17, the average cost per ton, \$5.50, and the average yield per acre, 3.48 tons. Similar items of a 10-acre timothy field are given as \$34.05, \$8.58, and 2.98 tons; of a 14½-acre field of oats and pea hay, \$15.80, \$6.83, and 1.66 tons; of a 19-acre field of alfalfa, \$12.56, \$5.03, and 2.5 tons; of a 10-acre field of oat and pea hay, \$14.50, \$9.67, and 1.5 tons; of a six-acre field of silage, \$28.88, \$3.32, and 8.68 tons, and of a 24-acre field of silage corn, \$29.36, \$3.73, and 7.87 tons.

The total cost of seeding a 14½-acre field of timothy and clover is given as \$23.10 per acre. The total labor cost of producing rye and vetch on six acres is given as \$98.93 and the total income as \$296.50. The average cost per acre of a 3½-acre field of rye straw and soy beans is given as \$6.15, the cost per ton as \$3.40, and the yield as 1.8 tons.

The total value of the crop from a 13-acre field of soy beans for seed is given as \$424 and the cost of production as \$207.32. The total cost of seeding a 10-acre field of alfalfa is given as \$168.42.

FEEDING PRESERVED MILK TO CALVES.

In trials made by the Michigan Experiment Station to determine the advisability of using formaldehyde as a preservative for skim-milk fed to four to seven-week-old calves for 24 weeks, 7½ cubic centimeters of 40 per cent formaldehyde being used to each 100 pounds of milk, it was found that in general the calves suffered no deleterious effects from the preservative, and as compared with calves fed sweet milk or sour milk, made slightly greater gains at somewhat lower cost. From records kept of the after development of these calves it was found that those which had been fed the preserved milk continued to make the cheapest gains, followed by the sweet milk fed calves and the sour milk fed calves.

For the entire experiment the calves fed sweet milk made a total gain of 1,997 pounds, costing 5.41 cents per pound; those fed sour milk 2,489.4 pounds, costing 5.43 cents per pound, and those fed the preserved milk 2,537 pounds, costing 5.23 cents per pound. It is believed, however, that before definite conclusions can be drawn the work should be carried on with a large number of calves.

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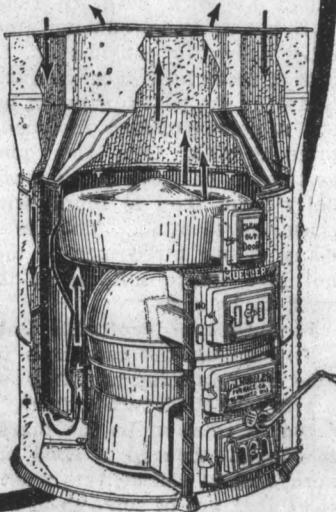
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The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or to

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The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

COLONEL RICHARD DENNIE was hurt beyond the power of words. He had been deliberately snubbed by the Starcliffe Fourth of July committee. It wouldn't have cut so deep had he been consulted as to some arrangement of the program, or requested to take a seat on the platform. Certainly he would not go there unless invited. That he wasn't asked to "make a few remarks to the crowd" was a bit unusual, but he wouldn't have minded that had the committee shown some consciousness that he was on earth. He knew the members had been in earnest consultation with the circuit judge and some of the leading lawyers many times, but not a word of advice or suggestion had any of them sought from him.

The Colonel recalled that as a young man he was in demand for Fourth of July speeches, and at other occasions.

Pushed Out of The Way

(Fourth of July Story)

By EDGAR WHITE

While not boasting, he felt quite certain his remarks had been appreciated.

From his youth on he had always responded to the call when Starcliffe required speaking or any other kind of talent. When a member of congress he had made addresses in every county of the district many times, and the people seemed delighted to arrange dates for him. Even now, since he had retired to private life, he was frequently requested to speak at picnics and gatherings of various kinds in other counties, but Starcliffe seemed to have tired of him.

Colonel Dennie reflected that he was close to 75, and that maybe his people

thought he had lived five years too long, measured by the Biblical standard. True, his head was clear and he was physically fit, but the world has no use for old men, he bitterly considered; it thinks if they're not dead at 70 they ought to be.

What made it hurt so this time was that the governor had promised to attend the celebration, and the affair was to be somewhat bigger than usual. For Colonel Dennie to have no hand in it at all would be to place upon him the seal of a man forgotten.

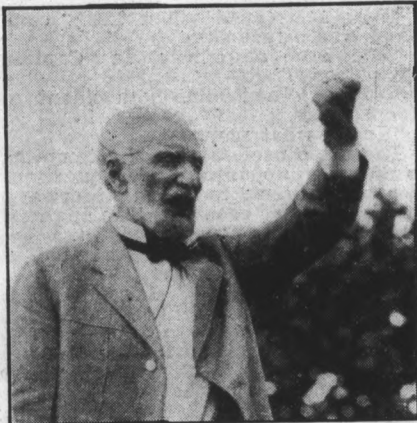
It was a torturing thought to a man who had always cherished an abiding affection for his people. "His" people!

Ah! They were his no longer; they would have none of him.

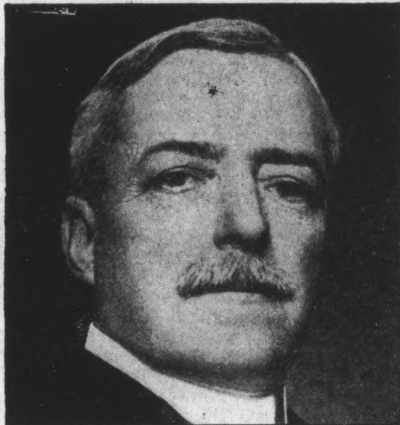
Maybe the fact that Joe Sever was running things this year had something to do with it. Sever was prosecuting attorney of the county, and had congressional aspirations. He was a tall, aggressive fellow, smart as a whip, but a Yankee! That is, he was from "Down East" somewhere. And Colonel Dennie was a "rebel" of the fighting type. But out here in the free western air men had long since buried the rifle, and taken up with the tools of peace. However, he reasoned, a Yankee never forgets, and now that one was in the saddle he would ride—ride roughshod over old "rebels" who had fought for a principle, and when licked had manfully acknowledged it and said "Amen" to General Grant's noble advice—"let us have peace!"

Colonel Dennie was personally ac-

WORLD EVENTS IN PICTURES



Uncle Jos. Cannon Celebrating his 79th Birthday.



Robert Lansing, Acting Secretary of State Since Bryan's Resignation.



Miss Genevieve, Daughter of Speaker Clark, who Weds June 30



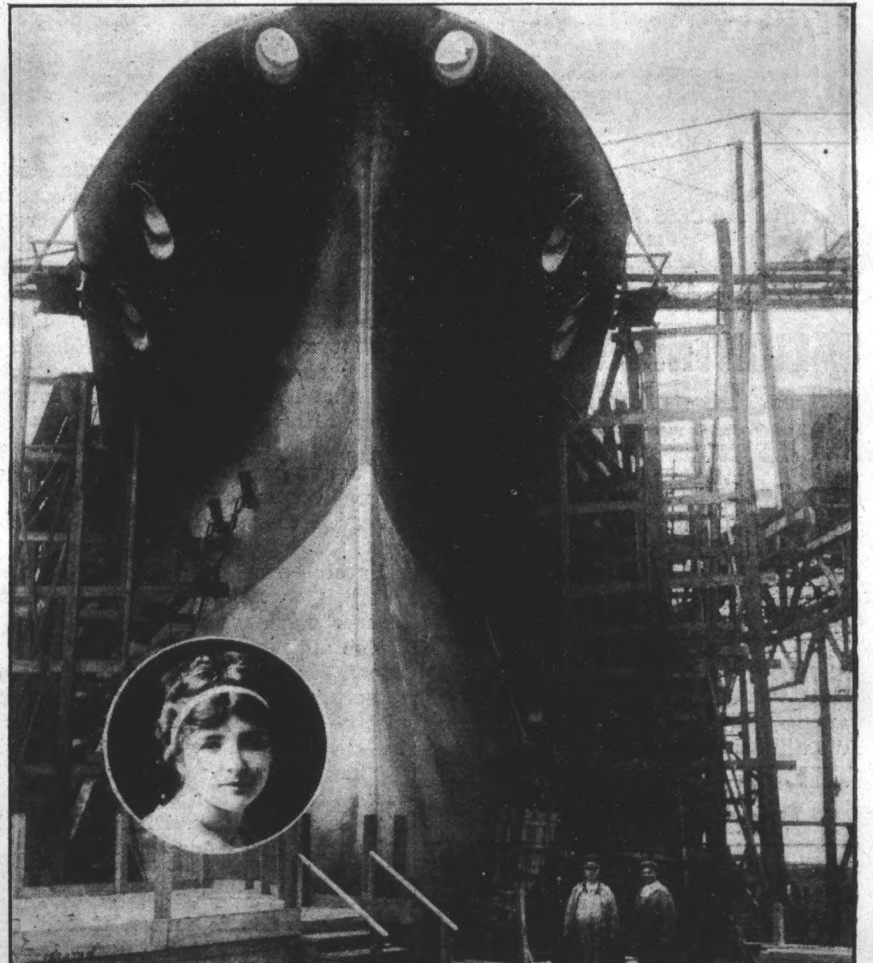
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quainted with the governor, and had been one of his staunchest supporters. He recalled that he had many kindly letters from the commonwealth's chief magistrate, thanking him for his services. The governor, he knew, would be asked up on the grandstand. Joe Sever would be there wearing a badge, and looking important; that was his way. Most likely it was through jealousy he had ignored the governor's old friend at Starelliff. All right. Colonel Dennie was not the sort of man to run after anybody! If the executive met him he would gladly shake hands and greet him warmly, but he would not seek him out. He had as much self-pride as if he were governor himself.

It was a beautiful day, and people from the country began arriving early. Every train brought additions to the crowd. The streets were ablaze with flags and bunting and noisy brass bands from all the towns in the county. Joe Sever rode about on horseback, delivering orders like some great field marshal, the busiest and most important man in town.

There was a parade out to the grove where the exercises were to be held. Joe Sever rode at the head, of course. Then came a brass band followed by an open carriage with the governor and some local dignitaries. Colonel Dennie recalled many times when he had been in that glittering carriage drawn by Liveryman Jones' fine black horses. But that was long ago. Today he was standing on the outskirts of the crowd, wearing an old straw hat and a patched alpaca coat. Nobody paid any attention to him.

Behind the carriage marched the local fraternal orders, the national guards and a lot of school children carrying small flags.

Arriving at the grounds, one of the bands played "The Star Spangled Banner" and a medley, a little girl in white read the Declaration of Independence and a Glee Club sang a song, and was encored several times.

The chairs on the grandstand were all occupied by speakers or distinguished guests.

Joe Sever, who was always in evidence, got up and made some long-winded announcements about the fireworks and music in the evening, and then said he had the pleasure of introducing a young man who had just come in on the train, and was not down on the program because they didn't know whether or not he would get in.

When Sever began talking Colonel Dennie moved further back among the trees, because the Yankee's voice irritated him.

The people cheered enthusiastically when the young man who had just arrived, arose to speak. There were so many people between that Colonel Dennie could not see who it was, but presently something in the tones sounded familiar, and he moved up a little towards the crowd, which was loudly cheering every now and then.

"I thank God that I live in a country where I cannot be driven to war at the behest of any king or emperor, but a country in which, when its honor is in question, needs no order of monarch to rally its sons to its support!"

Surely—surely he knew that voice! Why, it was from a speech Colonel Dennie had once made himself!

The old man who had lived too long wiped his specs and began edging up closer, and peering through the crowd. "Why—bless my soul!—Is it?—Can it be?"

Then when a mighty cheer broke loose he joined in:

"Hurrah for you, Dickey boy!" he cried, and threw his old straw hat so high in the air that he never got it back.

"I'll leave it to father, there," said the young man, pointing to Colonel Dennie, "if, should this nation ever be assailed, the old men who were once

called 'rebels,' and their sons, would not be among the first to fly to arms in its defense!"

"Right you are, Dickey boy!" shouted the old "rebel"—"Yaaah—Yaaaah! Yaaaah!"

Dick Dennie, Junior, had been studying law with a firm in the metropolis and had come home unannounced as a surprise to his parents.

By this Colonel Dennie had forgotten all about the gloomy reflections of the morning in the triumph his son was making, and he stood there smiling and clapping his hands, the happiest man on the grounds. He was living now in the glory of his off-

spring, with never a thought of the indifference manifested toward himself until—

"Colonel, where on earth have you been? I've looked for you everywhere."

Colonel Dennie stared in amazement at the raw-boned Joe Sever, who had come out into the crowd and was holding him by the arm.

"I have been in town all day," replied the Colonel simply.

"Well, I couldn't find you. Come up on the platform with me. I want you to introduce the governor to these people. He's been asking about you ever since he came to town."

THE RED MIST.

By RANDALL PARRISH.

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CHAPTER XII.—(Concluded).

The Recognition.

"Then our only means of escape is by the ladder, and we dare not venture that until assured those fellows have really left. Do you hear any sound below?"

We both listened in breathless silence, but no noise reached us with any distinctness. I thought I caught the echo of a voice, but it sounded from outside the house—possibly someone yelling a report from the stable.

"Shall I risk exploring?" I asked doubtfully. "There is surely no one on this floor except Nichols, and I judge he has been knocked out for some time. We can hardly wait here for him to recover, and give us free passage. What action do you think we ought to take?"

"I certainly have no desire to remain here longer than is necessary," she answered calmly, "but I do not believe those men have all left the house. Some may be outside in the storm searching for trace of us, but there are others surely on guard below. Did you hear that, a knife fell on the floor; someone is eating in the dining-room."

"I am going to lift the scuttle; possibly some light may filter up the stairs."

I was obliged to loosen it by the insertion of my knife blade, yet the clamp yielded with but little noise, and I peered eagerly down the opening. There was a lamp burning in the lower hall, the reflection sufficiently bright to reveal the general situation. No men were visible, nor did I hear any voices in conversation. One thing was certain—the upper hall was completely deserted, for I could see along its entire length. I lifted my head, and glanced back to where the girl remained silent, and motionless. My eyes, long accustomed to the darkness could distinguish her outlines, even the dim contour of her face. She sat upright on the rough flooring, apparently regarding me intently.

"Do you find the way left clear?"

"So far as the upper hall is concerned—yes. There is a light burning below, although I can perceive no movement. They may be in the dining-room, but I do not believe they will search up here again."

"You propose then lowering the ladder?"

The tone in which she asked these questions vexed me, her voice somehow sounded lifeless and cold.

"We shall certainly be more comfortably concealed in one of those rooms below," I answered, endeavoring to speak naturally, "and better able to accept any opportunity for escape which may offer."

"Yes?" The slight rising inflection stung me. What did her actions mean? Why should she so suddenly assume that tone with me? The sooner I knew the better.

"I beg your pardon, Miss Harwood," I said quietly, "but I fail to understand why you should speak to me in this manner. You have shown confidence, trust, in my former efforts to serve you, and I am just as eager now to be of service."

"You mean you wish me to have complete confidence in you?"

"Certainly. I can do nothing otherwise."

There was an instant of silence, in which her breathing was plainly audible. Beneath the shadow of an uplifted hand I felt that her eyes were upon my face.

"Very well, then," she said finally, her voice more expressive of interest. "It is surely no more than natural

that I should desire to know whom I have the honor of talking with."

"But do you not know?"

"No," firmly and decisively. "I accepted you on behalf of the uniform you wore, although I could not clearly comprehend why you felt it necessary to assume the name of a brother officer, and endeavor to deceive me as to your real identity. I thought there might be a worthy reason, and so I pretended a confidence in you which I could not altogether feel. I knew you were not Charlie Raymond; there is no resemblance between you, and your explanation was lame—for there was no other cadet of that name at West Point. You heard what those men said—yet you go on pretending to me; thinking, perhaps, that I failed to understand the meaning of their words. You are the officer they referred to, are you not?"

"Yes; I escaped when Fox's command was attacked."

"You were an officer in Captain Fox's troop?"

"No; I joined him by accident at Hot Springs."

"Under what name?"

The utter uselessness of attempting to lie was apparent. Her questions were too direct, too straightforward, for any further evasion. The slightest quibbling now would cost me her friendship forever. If I hesitated, it was scarcely noticeable.

"Under the name," I replied, "of Charles H. Raymond, Lieutenant Third U. S. Cavalry, on recruiting service."

"Oh!" the exclamation burst forth in surprise at my frank avowal. "Then you did not make that up merely to deceive me? You had been passing under that name with others. You had taken it for a distinct purpose—a military purpose?"

"I took it," I said slowly, and deliberately, my eyes looking steadily at her, "because I knew such a Federal officer had been detailed to service in this neighborhood."

She drew in her breath quickly, making a little gesture with one hand. "Then—then you are a Confederate?"

"Yes."

"A spy! You are falsely wearing that uniform! Are you—are you a soldier?"

"A sergeant of artillery, Miss Harwood," I replied, calm and determined now that I had once made the plunge. "I have done nothing I need be ashamed to confess. If I have taken my life in my hands to serve the cause of the South, it was in obedience to the orders of my superiors."

"Whose orders?"

"General Jackson directly; although Robert E. Lee was present, and gave final instructions."

"To come here secretly, in disguise, for what object?"

"To learn what I could of General Ramsay's forces in this district, and the disposition of the mountain men, and their leaders. There is, in war, nothing dishonorable in such a service. I am doing my duty as a soldier."

Her hands concealed her face, and I could judge nothing as to its expression; whether, or not, my words had any weight with her. She sat motionless, bent slightly forward. At last she said slowly:

"I—I know enough of—of army life to be aware that men are not ordered to such hazardous work—they are asked to volunteer. Only a brave man would assume such a risk; only a man who believed in himself, and his cause. I—I like you better because you have told me. I believe you are honest with me now. I did not know what to do, or what to say before. I knew you were not Raymond, and that you were

acting a lie—but could not guess your purpose. What made it harder to understand, her voice hesitating slightly, "arose because there was something about you so oddly familiar; I felt that I ought to recognize your face; that somewhere we had met before—have we?"

"Yes, Miss Noreen; I am Tom Wyatt."

"Why! Why, of course!" the swift expression was one of intense relief. "How stupid of me! Oh, I am so glad that I know." To my surprise she held out both hands impulsively. "Your being a spy doesn't make any difference now that I know who you really are. It is no wonder I did not recognize you—why you were only a boy—"

"Not when you rode by my mother and me on the pike."

"A year ago? I remember; yet I hardly caught a glimpse of you through the dust. You were just a boy when you were here last. Why you had long curls."

"And thought Noreen Harwood the most beautiful little girl I had ever seen."

"Oh, indeed; well, you were never nice enough to say so. All I distinctly recall is that you broke my doll, and I declared I would never speak to you again."

"I hope at this time to make amends," I hastened to say, glad that even such dim memory served to break the ice between us. "Do not let my former rudeness count against me now, Miss Noreen. I appeal for forgiveness humbly, and would even bring you a new doll."

"My wants are greater now."

"And my desire to please stronger."

She drew in her breath sharply, as though suddenly awakening to the foolishness of such idle exchange of words.

"Why, how ridiculous for us to sit here talking of our boy and girl days. For the moment I had utterly forgotten the peril of our surroundings. Why, you—you are in even greater danger than I."

"Oh, no; from all I have seen and heard the Cowans must be in sympathy with the South, or they never would have made the attack on Fox's party, or held Lieutenant Raymond prisoner. I had considered going direct to Anse, revealing my identity, and demanding protection."

Her hands grasped my sleeve.

"No, not that! You do not understand, Tom Wyatt. These men care nothing for the issues of the war. They merely use them to cover up their own lawless deeds, and to assist in working out schemes of revenge. They are neither Federal, nor Confederate; they are robbers; murderers, and thieves. Is Anse Cowan here to-night for any purpose but his own? You realize what that purpose is?"

"I have heard enough to make me certain," I answered. "He would force you into marriage to thus gain control of this property. The killing of Major Harwood was part of the plan."

"You know then of my father's death? You know that report to be true? Why, you said you were with Captain Fox at Hot Springs! Is it so?"

"Yes, Miss Noreen, it is true. I saw your father's body, and that of his servant Tom. I came across the mountains with the man who killed them both. I supposed him to be a scout. He called himself Jem Taylor, and when they first met your father addressed him by that name. They met by appointment at a house a mile south of Hot Springs. Your father said nothing to you of such a man?"

"No; I saw him but for a moment as he passed through Lewisburg on his way east. He was to meet a scout beyond the mountains, but no name was mentioned. What did the man Taylor look like?"

"I described him to Captain Fox, and one of his men, a sergeant, instantly pronounced the fellow to be old Ned Cowan."

"Ned Cowan! Why, that could not be! My father would never make an appointment alone with him. They have been deadly enemies for years."

"That may be true, Miss Noreen. I can only tell you what little I know. Your father might have been deceived; drawn into a trap. He was there apparently by appointment to confer with a man known to him as Taylor. Who Taylor really was I can not say—but he was an enemy, not a friend, of Major Harwood. I do not insist that the fellow was Ned Cowan, but I am sure he belonged to the gang. We trailed him nearly to New River, and had gone into camp amid the mountains when the Cowans attacked us. In my judgment the killing of your father, and the raid on this house to-night, form part of the same plan."

I do not think she was crying, although her face was buried in her hands. I turned my eyes away, down through the scuttle hole, but nothing

moved along the hall below. The house seemed absolutely deserted, but the lamp continued to burn, and yet, even as I felt the strangeness of such intense silence, a door slammed somewhere in the distance, and a gruff voice spoke.

CHAPTER XIII.

Waiting the Next Move.

ANSE—Kelly, are either of you there?"

There was the sound of chairs being pushed hastily back from a table, and rapid steps on the floor.

"Yes; what's wrong? Have you found something?"

"Sure; Bill an' I saw them; they were a tryin' ter git the hoss; but afore either of us could fire, they sorter slipped 'long back o' ther fence, an' got away. It's darker'n hell out thar, an' Bill sed fer me ter cum in yere an' tell yer that if you 'en Kelly wud cut across the road, an' sorter head the cusses off we'd bag the two easy."

"Whar's the rest of ther boys?"

"Ridin' the Lewisburg pike accordin' ter orders, I reckon. Leastwise we ain't seen 'em since yer tol' us ter watch ther stable. Bill an' I can't round them up alone."

"All right, Dave. Where are they now?"

"In ther orchard, a creepin' 'long the fence. Bill's followin' 'em up, an' all you got ter do is run 'long the road an' git ter the corner ahead o' 'em. They can't go no other way."

I caught a glimpse of the two as they crossed the lower hall hurriedly. The lamp flickered in the draft of the opened door, and one fellow swore roughly, as he stumbled over some obstacle. Then the door closed, and the flame steadied. In the silence we could hear again the beating of rain on the roof overhead.

"Who do you suppose they could have seen?" she asked.

"Shadows likely enough. Let them hunt. We know now the house is deserted, and can find more comfortable quarters—perhaps even slip away before anyone returns. You will go with me?"

"Of course; I am not afraid of Tom Wyatt."

"You were once, young lady—down by the old mill."

She laughed, as if the suddenly revived memory had driven the seriousness of the present situation from mind.

"When I thought you an Indian? Oh, I have entirely recovered from that fear. I am even going to confess I liked you then."

"Good! and now?"

"That is my secret, sir. Is it not enough to compel me to companion with a rebel spy, without asking impertinent questions? Let me help you with the ladder."

We passed it down slowly, and carefully, until the lower end rested securely on the floor below. If Nichols had recovered from the effect of the severe blow, he had made no sound, and I had almost forgotten his presence. I drew back, and permitted the lady to descend first, holding the upper supports firmly until her feet touched the floor. It was a struggle for me to force my larger bulk through the narrow opening, but I succeeded finally, and stood beside her. In the brighter light I could perceive more clearly the expression of the girl's face, and realized the friendliness of her eyes. My frank confession had won me her confidence; no matter where her sympathy might be in this war struggle my allegiance to the cause of the South was no serious barrier between us; even the fact that I was masquerading there in a stolen uniform, and under an assumed name, had not greatly changed her trust in an old playmate. My heart beat faster to this knowledge, yet, in some way, although I rejoiced, the recognition brought with it a strange embarrassment. To her I seemed to be only the boy Tom Wyatt, grown up. She met me in the same open-hearted, careless manner of our childhood—as though it was only yesterday when we played together. But to me she was no longer the girl who ran and laughed—she had changed into a woman; and my heart throbbed to the glance of her eye, my blood stirred to the touch of her hand. The very ease with which she appeared to resume the old careless relationship brought to me a pang of regret. I was not a boy, nor content that she should regard me from that standpoint.

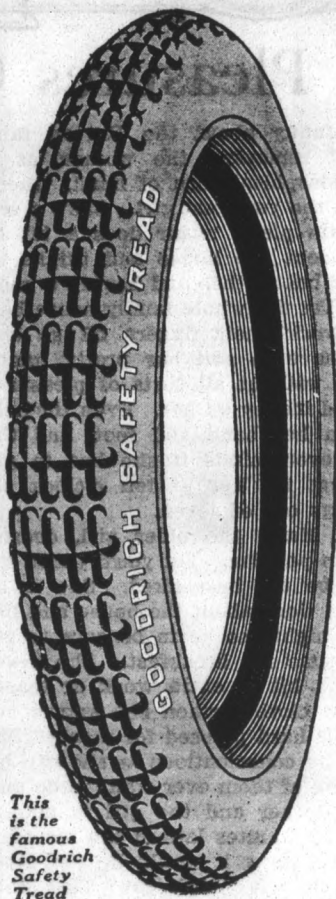
"It sounds as though the storm was harder than ever," she said. "Where shall we go?"

"My choice would be to hide in one of these rooms, for the present, at least. We could scarcely hope to get the horse out of the stable unseen, and, even if we did, we would be likely to ride into some of the gang."

"But they will return to the house."

(To be continued.)

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Woman and Her Needs

At Home and Elsewhere

Pleasures Come High

It's funny about the Horton family," remarked the woman of a philosophical turn of mind, "there is Elsa, the youngest girl. She's a selfish little piece, never does a bit of work about the house and thinks of nothing but clothes and having a good time. Yet the whole family adore her. They work their fingers off so she won't have to soil her pretty hands and do without all sorts of pleasures to spend money on her. Even the help wait on her hand and foot, and the cook never minds if she has to get breakfast for her at ten o'clock six mornings out of seven.

"But Mary, the older girl, doesn't seem so popular. Yet you'd think she would be the best liked. She is always at work about the house and lies awake nights so as to be sure to get up in time for breakfast. She never makes a bit of extra work or teases for new clothes when she knows her father is hard pressed for money. She is just as conscientious as she can be, but none of them ever want to do anything for her and the girl is mad if she is 15 minutes late in the morning.

"You'd think it would be the other way around, wouldn't you? That Mary would be favored and Elsa disliked. I suppose it is because Elsa is always good-natured and jolly and has a gay word for everyone. She keeps you feeling happy, so you don't mind humoring her. But Mary is quiet and rather inclined to be fretty. She is always worrying over something and sort of keeps things stirred up trying to get them all to do their duty. Sometimes you wonder if it doesn't pay to be selfish, you certainly get more out of life."

We all have Elsas and Marys in our midst; yes, verily, in our own families. There is always one who slips easily out of all unpleasantness with the hearty support and co-operation of the whole family, or most of it. Occasionally the Marys rebel and insist that the Elsas shall do their share of the drudgery, but it always ends by Elsa's being given a new dress or a hat or a box of candy to make up to her for Mary's crossness, and Mary goes on and does the work.

Sometimes the Marys wonder if, after all, it pays to have a conscience. They think bitterly, that "them as has gits," and decide that they, too, like the Elsas, will be selfish and shirk and demand things as though they were theirs by divine right. But they never succeed in putting it over. Nature has not given them the confident, smiling way of gaining their point which Elsa knows to perfection. The Marys have been so long in the habit of beseeching that they do not know how to take, and if they demand it is with a sullen air which invites refusal. So they relapse into their old ways again either in sullen silence or with an attempt at making the best of it, according to the extent of their injuries.

There is but one thing for the Marys to do, and that is to reflect that "life is more than meat and the body than raiment," or, in more modern phraseology, that character is of more real importance than pleasure. Elsa is having her good time now, but she is growing up into a spoiled, selfish woman who will never be anything but a parasite, a woman who, when she marries for, of course, she will marry, will keep her husband's nose to the grindstone and turn her children over

to Aunt Mary to take care of, and of course she will.

Elsa is almost morally certain to be as cordially detested when she is thirty as she is adored when she is eighteen, for the thing which is forgivable in a bright young girl is absolutely without excuse in a woman who is of mature years. Almost certain to be detested, and yet, she may not be. For there are some women who have the knack of keeping it up all their lives, and still being petted and admired; wives who never pretend to do even a tenth of their share in the matrimonial bargain, and yet are adored and petted by their husbands. While the wives who carry nine-tenths of the load look on and gnash their teeth and wander why they, who do so much, get so little thanks.

Perhaps the secret of it is Elsa's good nature. She always is smiling, and Mary must admit that she, herself, inclines a bit to the raspy side. Hard work is not conducive to good temper and Mary certainly works hard. Perhaps she might, with profit, take a leaf from Elsa's book and shirk just a little, just enough so she would have time to be light-hearted. For wrong as it may be, man, and woman, too, is always ready to pay high for the thing which gives pleasure, while ignoring the bread and butter side of life. Ballet dancers draw \$2,000 a week, you know, while clergymen are content to preach to empty seats for \$500 a year. Mary might reflect on this when she wonders why Elsa is so well treated.

DEBORAH.

TRIED STRAWBERRY RECIPES.

As a change from strawberries and cream, serve the berries unhulled around a mound of powdered sugar. Select only the most perfect berries, wash carefully and arrange in individual dishes.

If you have ice, several delicious dishes may be made with strawberries. The easiest of these is strawberry mousse. For this whip one pint of cream, add one-fourth cup of powdered sugar and two cups of mashed strawberries. Pour into a mold, pack in crushed ice and salt and let stand until solid. About four hours is required.

Strawberry ice is made by boiling one quart of water with one pound of sugar 20 minutes, and adding two cups of mashed strawberries. When almost frozen add the stiffly beaten whites of two eggs and finish freezing.

Frappes are half frozen ices. Strawberry frappe may be made by boiling one pint of sugar and one quart of water only five minutes, adding two cups of mashed strawberries and freezing just to a mush.

To make strawberry ice cream add two cups, or one pint, of crushed strawberries to one quart of plain ice cream and freeze. The best ice cream is made simply of sweet cream flavored and sweetened to taste and then frozen.

A delicious sauce for plain ice cream is made by adding a cup of crushed strawberries to one cup of simple syrup. Chill the sauce before serving.

Strawberry shrub is a delicious summer drink. To make it place 12 pounds of strawberries in a large crock and pour over them two quarts

of cold water. Let stand 24 hours, covered with a plate, then strain through a flannel bag, add one and a half pints of sugar to every pint of juice, stir until dissolved and bottle.

Strawberries are best canned in the jars. Allow half as much sugar as berries by weight, arrange in layers in the cans, stand on a layer of straw in the bottom of the boiler, pour in cold water to the top of the jars, and bring the water to a vigorous boil. Then remove the jars, fill up to the top with hot syrup or with the fruit from one or two cans, and seal.

In making preserves allow equal weights of sugar and berries. Sprinkle the sugar through the fruit and let stand two hours. Then bring slowly to the boil, simmer until the syrup begins to thicken and can.

For jam add five pounds of sugar to eight pounds of mashed berries. Cook slowly for a half hour, stirring almost constantly and store in jelly glasses. Or the fruit may be first cooked, put through a sieve, the sugar added and then cooked down.

HOME QUERIES.

Household Editor:—Could anyone tell me where I can get sale for geese feathers?—Mrs. J. J. B.

Send self-addressed stamped envelope for reply. We can not furnish names of business firms in this column.

Household Editor:—Will you please publish a recipe for canning strawberries without heating same?—Mrs. A. A., Plainwell.

I have no such recipe.

Household Editor:—Will you kindly tell me if one can salt and smoke pike, pickerel and brook trout? And if so give me the exact proportions of salt to use and how to pack them after salting. Kindly answer this through the Michigan Farmer as there are a number of readers who are much interested in this besides me. I do enjoy the Woman's Department and have received so many helpful ideas. Thanking you, and assuring you I shall greatly appreciate any information you can give me, I remain, sincerely yours, Mrs. J. B.

I looked through 40 books on cookery and could find no recipe. Finally secured the below directions from a man who has been in the fish business 30 years. Clean the fish thoroughly and lay down in a weak brine three or four days. Then pour off this brine, wash the fish in clear water, and rinse out the jar or keg. Then lay down again in a brine strong enough to float a potato, and keep in a cool place. Fish salted this way will keep indefinitely. Fish may be smoked but will only keep a few days. They are soaked over night in a weak brine, then smoked as you do hams. Thank you for your kind words.

Household Editor:—What is the best way to roast peanuts?—W. D.

I have been unable to find any printed recipe for roasting peanuts. Many housekeepers roast them in the oven in any baking-dish, trying them occasionally to see if they are done. In big establishments they are roasted by bushels in specially built roasting machines.

Jelly Roll.—One and one-half cups of sugar, three eggs, half a cup of sweet milk, one teaspoon of lemon extract, two rounding teaspoons baking powder, two level cups flour. Beat thoroughly and spread very thin in the pan to bake. While baking, beat the jelly and have everything in readiness, as it must be rolled while hot to prevent cracking. Too much baking powder makes a cake coarse-grained.—Mrs. G.

Grange.

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

GRATIOT POMONA MEETING.

Gratiot Pomona met with Pleasant Valley Grange May 29 at 10:30. At the business session it was decided to hold the August meeting with Sumner Grange. After the business session, the meeting adjourned for dinner. The afternoon session was an open one, with an attendance of over 200. The Bohemian orchestra furnished splendid music and responded to encore time and again. Bro. F. G. Palmer gave a short talk on the first Pomona and told who were some of the officers. Very few attend now who were the most ardent workers. Most have answered the final call to rest. J. C. Ketcham as usual delivered a practical talk in his pleasing energetic way. Some do not realize the importance of agriculture. If the cities were wiped out we would still eat. Did not think the farmer was in at the hearing of public questions. Only eighteen farmer members of congress. Danger in having too many tenant farmers. In the rural districts is where every moral question gets the most support. One-half of the saloons in the state are found in Wayne county. Community work instead of individual work. Only 30 per cent of the farmers live on their farm and are out of debt. Farmers only make .01 or .04 per cent and have to pay .06 to .07½ at the banks. Will not hire much money to do business with under those conditions. Work to democratize civilization, bring to the average what has been the privilege of the few.

After a piece of music Mr. Grawn gave a short talk, inviting us to come to our school at Mt. Pleasant next winter, when there would be three days' school for the young farmers and three days of lectures on agricultural and scientific subjects. He said in Norway congress voted to give 20 years' credit at .02 per cent with the privilege of paying one-fourth in every five years. Thought that if our country would do likewise instead of paying \$75,000 for a public building where \$25,000 would do just as well, it would save the congested affairs in the cities and be for the best interests of all.

Following this Mrs. Jennie Muscott gave a fine paper in memory of our deceased members.

At this time Mr. Ketcham took the opportunity to thank the Pomona for the beautiful flowers sent to him, and told how they were distributed so others might share his pleasure.

A song by little Ruth Edmonds was highly appreciated.

"Diseases and Prevention of Some in Grain," by Ovid Seaman was very instructive, and a song by W. A. Wood was much enjoyed.

On suggestion of Bro. Carter a rising vote of thanks was given Pleasant Valley Grange for their efforts in making this one of the best Pomonas ever.

A recitation, "The Whistling Brigade," by Velma Hanley, was one of the best numbers on the program. At the close of the afternoon program the Grange was called again in fifth degree work and 14 members were instructed in the work.

It was decided to erect a tent on the fair grounds during the county fair. Bros. Carter, Wood and M. C. Lake were appointed a committee to look after the same.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

Associational Motto:

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

A REQUEST FROM THE SECRETARY.

In a general discussion at the 1914 annual meeting of the State Association of Farmers' Clubs the plan of changing the place of meeting of the State Association was advanced. It was voted to leave this question of changing the annual meeting place to be discussed in local clubs and voted on at the 1915 annual meeting. Each local club should discuss this question at some meeting before the delegates for the State Association are elected, and instruct such delegates as to the wishes of the club in this matter.

Not all the local clubs in the state are included in the membership of the State Association. It is hoped that every club in the state not now affiliated with the organization will also discuss this question to the end that a better realization of the more efficient work which could be done through the medium of the state organization with the co-operation of every club in the state may be brought about.

MRS. J. S. BROWN.
Associational Secretary.

CLUB DISCUSSIONS.

Mothers' Day.—The June meeting of the Washington Center Farmers' Club was held at "Shadelands," with Mr. and Mrs. O. J. Campbell. This was a mothers' meeting, and was opened with singing by the Club, "An Echo of the Past." Roll call was responded to with "Early Recollections of Mother." Mrs. French gave a select reading entitled, "Mother," and a select reading on the same subject was given by Mrs. Crowel. The question, "Mother's Problems," was taken up and discussed by the mothers present. "My Experience with Agents," led by Mrs. W. C. Long, and discussed by all brought out many funny incidents. This closed the program. The social hour is always enjoyed, also the ice cream and several kinds of cake which were served. A number of the Club ladies signified their intention to register and vote on the question of bonding the township, as they might never have this privilege again. The July meeting will be held at Elmwood with Mr. and Mrs. S. N. French on the second Thursday in the month.—Cor. Sec.

Children's Day exercises of the Ray Farmers' Club were held Thursday, June 10, at the home of Mr. and Mrs. H. E. Mills, with a special program by the children. After the business session was disposed of the program was taken up by the president, J. A. Priest. Recitations by the children were the feature of the program. The Club was then favored by several musical selections. After the program had been completed the children played games on the spacious lawn until driven in by the rain. A sumptuous supper was served to 75 members and friends. Ray feels very proud of the coming generation, as they are a very enthusiastic lot of children. The Club adjourned until the picnic in August, at the grove of Mr. and Mrs. Seward Ingalsbe.—Mrs. E. M. Frost, Cor. Sec.

A Big Meeting.—Over 100 members of the Ceresco Farmers' Club met at the pleasant home of Mr. and Mrs. J. A. Shultz, May 26, for the regular monthly meeting. The afternoon program was opened by the president with prayer. Thomas and Clara Huggett gave two fine violin and piano selections. Mr. Woodruff favored the company with fine readings. Clara Huggett and Martha Haddock played two excellent duets and Mrs. Thomas Taylor gave two fine readings, the first being "Over the Hills from the Poor House." Mr. Waterson who, with her family, has been spending the past two years in the west, gave a very interesting talk on "Our Trip Home," which included a trip down the coast and a visit to the exposition. Mr. Bartram, our milk inspector, gave a fine paper on "Our Milk Supply" and a discussion on this subject which was very beneficial to all was opened by Dr. Powers, of Battle Creek.

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AGENTS WANTED

Markets.

WEATHER FORECAST.

Weekly weather forecast of the U. S. Weather Bureau for region of the Great Lakes for week beginning Wednesday, June 23, indicates fair weather will continue until about Friday, when a brief shower period may be expected. Showers are probable again on Tuesday the 29th. An average temperature will prevail.

GRAINS AND SEEDS.

June 22, 1915.

Wheat.—Although prices have fluctuated considerably the average shows a steady market most of the past week. Cool weather has been ideal for maturing the large crop now growing in this country, which with the sudden cutting off of foreign demand and the selling by speculators who found themselves over supplied, has given the trade into the hands of the bears. The harvesting season will be earlier than usual in the winter wheat region having already begun in sections of Missouri, Illinois and Indiana. Some new wheat from the southwest has already reached St. Louis. Where threshing is on yields are exceeding the estimates. The visible supply decreased over 2,000,000 bushels last week. One year ago No. 2 red wheat was quoted at 90½¢ per bushel. Quotations for the past week are as follows:

	No. 2	No. 1	
	Red.	White.	July.
Wednesday	1.17	1.14	1.04
Thursday	1.16	1.13	1.03½
Friday	1.17	1.14	1.05½
Saturday	1.17	1.14	1.05
Monday	1.15	1.12	1.03½
Tuesday	1.18½	1.15½	1.07
Chicago.—July wheat	\$1.01½		Sept.
9.7c; Dec.	\$1.02¼		

Corn.—Corn has advanced in face of the easier trend of wheat prices. This is due largely to the poor outlook of the present crop. From the important corn growing states reports are coming forward of the sickly appearance of the new plants. Re-planting has been general and this second crop is not doing well. The stand is the poorest it has been in many years. The visible supply decreased 834,000 bushels. One year ago No. 3 corn was quoted here at 72½¢ per bushel. Prices for the past week are:

	No. 3	No. 3	
	Mixed.	Yellow.	
Wednesday	76½	77½	
Thursday	77	78	
Friday	77	78	
Saturday	77½	78½	
Monday	77	78	
Tuesday	76½	77½	
Chicago.—July corn	72.7c		Sept. 72c

Oats.—There has been a comparatively small amount of business done in this market and values are holding about even with those of a week ago. The visible supply decreased 1,326,000 bushels. The primary receipts are in moderate volume. The new crop is in fair condition. The local price one year ago for standard oats was 42½¢ per bushel. Quotations for the past week are:

	Standard.	No. 3	
		White.	
Wednesday	51	50½	
Thursday	51½	51	
Friday	51½	51	
Saturday	52	51½	
Monday	51½	51	
Tuesday	50½	50	
Chicago.—July oats	43.6c		Sept. 38.1c per bushel.

Rye.—This cereal shows a decline of two cents during the week. No. 2 rye now selling at \$1.12 per bushel. The market is inactive.

Beans.—The demand for beans is light and prices are down 5c since last week. Detroit quotations: Cash \$3; July \$3.05. Chicago trade is quiet and steady. Pea beans, hand-picked choice, quoted at \$3.18@3.25; common \$3@3.15; red kidneys \$3.25@3.65.

Cloverseed.—There is little interest with prime spot quoted at \$7.90; October at \$8.40 and prime alsike at \$7.90 per bushel.

Timothy.—Prime seed is inactive at \$3 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 \$6.30; seconds \$6; straight \$5.90; spring patent \$6.60; rye flour \$6.40.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$33; corn and oat chop \$30 per ton.

Hay.—Market is steady. Carlots on track at Detroit are: No. 1 tim-

othy \$18.50@19; standard \$17.50@18; No. 2, \$16.50@17; light mixed \$17.50@18; No. 1 mixed \$16@16.50; No. 1 clover \$14@14.50.

New York.—Steady. No. 1, \$24; No. 2, \$23.

Straw.—Rye straw \$8@8.50; wheat and oat straw \$7@7.50 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is steady with only slight change in prices. Extra creamery 27c; firsts 25½c; dairy 21c; packing stock 19½c.

Eggs.—Trade is slow with plenty of goods available. Quotation for the week is 26½c per pound.

Chicago.—Market is ruling steady at prices the same as last week. Demand is good and liberal quantities are going to storage. Extra creamery 27c; extra firsts 26@26½c; firsts 24½@25½c; seconds 23@24c; packing stock 20c.

Poultry.—Market is firm and quiet with no change in prices except broilers which are 1c lower. Live.—Broilers 24@25c; hens 14c; ducks 17@17½c; geese 10@11c.

Chicago.—Light receipts has caused an increase in prices for springers and has kept the market firm. Fowls, good weights 13½c; spring chickens 2 lbs. and up, 24@25c per lb; 1 lb. to 1½ lbs., 21@22c; small 20c; ducks 13c; young ducks 1½@2 lbs. 15@16c; geese 8@9c; guinea hens \$2.75@3 per dozen.

Eggs.—No change in prices. Market is firm. Fresh stock sells at 18c per dozen.

Chicago.—The market is ruling firm at unchanged prices. Offerings liberal and demand fair. Miscellaneous lots, cases included, 16@17½c; ordinary firsts 16@16½c; firsts 17½@17¾c.

Veal.—Quoted steady at 11½@12c for fancy, and 10@11c for common.

Honey.—Choice to fancy white comb 14@15c; amber 8@9c; extracted 5@6c per pound.

Cheese.—Wholesale lots: Michigan flats 13½c; New York flats 14½@15c; brick 14½c; domestic Swiss 19@21c; long horns 15c; daisies 15c.

FRUITS AND VEGETABLES.

Apples.—Firm and supply limited; season is about over. Baldwins are quoted at \$5.75@6 per bbl; Ben Davis \$3.50@3.75.

Chicago.—Apples are scarce and are firmly held. Northern Spy are quoted at \$7@10 per bbl; Ben Davis \$3.50.

Strawberries.—Active and steady. Receipts and demand good. Michigan 16-qt. cases sell for \$1.50.

Chicago.—Market is easy and receipts plentiful. Prices are lower. Michigan 16-qt. cases, dark color \$1.25@1.40; light color \$1@1.25.

Potatoes.—Market easy with prices lower. Quoted at 25c per bushel in sacks. At Chicago the market is oversupplied and weak. Prices are lower. Michigan white in bulk are quoted at 20@30c per bushel.

WOOL.

Boston.—The wool situation is growing stronger every day. Whenever the mills need wool they go into the market and buy seemingly regardless of the price. Both the manufacturers and dealers believe in higher prices later on. Growers who are holding their stock of wool are taking an even more optimistic view of the situation than they held earlier in the season. In the fleece states farmers are generally getting around 30c for their offerings. Boston quotations for Michigan wools are: Unwashed delaines 26@27c; do. combed 29@34c; do. clothing 24@30c.

GRAND RAPIDS.

Strawberries are in good supply this week, the bulk of the stock going at \$1.25@1.50 per case Monday. Cherries are also coming in, with sales opening at \$2 per case. Offerings of both strawberries and cherries promise to be large during the next two weeks. Old potatoes are off to 10c in some outside markets and are worth around 25c here. Dealers are paying 16½@17c for fresh eggs and 20@21c for dairy butter. In live poultry broilers are bringing 22@24c; fowls 11@12c. Wheat is quoted at \$1.06; corn 76c; oats 58c; beans \$2.75.

DETROIT EASTERN MARKET.

Buyers were plentiful on the eastern market Tuesday morning and the prices were fairly well maintained, notwithstanding a liberal increase in the amount of offerings. Potatoes sold at 40@45c; new cabbage 75c; peas \$1.50@2; lettuce 15c per bushel; eggs 25c per dozen; beets four to five bunches 25c; carrots four bunches for 25c; strawberries offered freely at \$2.50@3 per 24-qt. case. Hay was offered sparingly with prices ranging above \$20 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

June 21, 1915.

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

Receipts here today as follows: Cattle 140 cars; hogs 110 d. d.; sheep and lambs 10 d. d.; calves 1850 head.

With 140 cars of cattle on our market here today and 17,000 cattle reported in Chicago, our market on dry-fed cattle was the most erratic we have seen here in several weeks; the same class of cattle sold from 10c lower to 10@15c higher than last Monday's prices, the market was very uneven. Some of the salesmen got anxious to sell early in the morning and sold cattle 10c per cwt. lower than last week's prices, and others stood by their cattle and sold them from 10@15c higher. We had either the misfortune or good fortune to stand by our cattle and we think we sold them from strong to 10@15c per cwt. higher than last Monday. As to the grass cattle, they sold from 15@25c per cwt. lower and our advice is to be careful on the grassy cows, heifers and bulls. We look for a good strong market on all dry-fed cattle of good quality, whether light or heavy, but the grassy kind are bound to sell lower.

We had quite an active hog market here today with a fairly liberal supply although prices averaged a shade lower than Saturday's best time. Pig weights were about a dime higher and the handy weight hogs 5@10c lower, while the heavy grades and mixed lots were steady to a nickel lower than Saturday's sales. It was generally a one price market for all handy weights, \$8.15 taking the bulk. Extreme heavy weights quotable at \$7.85@8; pigs generally \$8; roughs \$6.50@6.75; stags \$5@5.50. About everything was sold but the late market closed a little bit weak.

The market was active today on lambs and sheep, with prices steady with the close of last week; most of the choice lambs selling at \$10. Look for steady prices last of week with moderate receipts.

We quote: Spring lambs \$9.75@10; cull to fair \$6@9.50; yearlings \$7.50@8; bucks \$3@4.50; handy ewes \$5.50@5.75; heavy ewes \$4.50@4.75; wethers \$6.50@7; cull sheep \$3@4; veals, choice to extra \$9.75@10; fair to good \$7@9.50; heavy calves \$5@7.

Chicago.

June 21, 1915.

Cattle. Hogs. Sheep.
Receipts today...16,000 39,000 10,000
Same day 1914...12,328 39,380 14,863
Last week.....39,505 108,012 49,235
Same wk 1914...39,977 144,474 74,573

Shipments from here last week aggregated 7,609 cattle, 9,445 hogs and 268 sheep, comparing with 17,559 cattle, 10,892 hogs and 2,051 sheep for the same week of 1914.

The cattle market was firm today, with small receipts. Hogs opened steady, with sales at \$7.10@7.90, but later there was a break of about 5c. A firm lamb market was experienced, with a light run and receipts largely consigned direct to packers from Louisville. About 2,000 lambs and yearlings arrived on the market from Idaho, and some clipped yearlings, about 600 head, brought \$8.15. Choice spring lambs brought \$9.85.

Cattle sold off sharply on Monday last week on receipts of only 17,936 head, the greater part of the decline being on the poorer class of stock, with a particularly unsatisfactory market for grassers and Illinois dairy cows. Grassy cattle sold largely 25@40c lower than a week earlier, and bulls were 25c lower than on the preceding Monday. On Wednesday with receipts of only 13,666 head, desirable cattle sold up 10@15c in many instances, but the bulk of the cows not of the better class sold mostly 50c lower than on Monday of the preceding week. Later in the week average cattle prices showed little change, and the bulk of the week's sales of steers took place at a range of \$8.25@9.15, with the choicer class of heavy steers purchased at \$9@9.35 and the common to fair class of grassy steers of light weight at \$6.50@7.75. Fair to middling steers brought \$7.80@8.45, with a medium grade taken at \$8.50@8.70 and good steers at \$8.75@8.95. The better class of yearling steers sold at \$9@9.45, with sales of a good kind at \$8.75 and over, while sales ranged all the way down to \$7@8 for the commoner yearlings. A good business was transacted in butchering cows and heifers at \$5.10@9.25, sales embracing 60 prime 766-lb. heifers at \$9 and 63 fancy Hereford 683-lb. Nebraska-fed heifers at \$9.25. Prime cows brought \$7.25@7.75, while cutters sold at \$4.30@5, canners at \$3.25@4.25 and bulls at \$5@7.75 with prime yearling bulls selling up to \$8. Calves sold at an extreme range of \$5@10.35, best selling late at \$9.50@9.75. On the two days of fairly large cattle receipts—Monday and Wednesday—there was a good demand for fat bul-

locks to ship to New York, and there was some demand on export account. Quality got action regardless of mere weight, but the preference was for fat handy weights. The heifers that sold at \$9.25 marked the highest price paid for a straight lot of prime little baby heifers during the present season. A prime beef cow sold for \$8, but such sales are rare these times.

Hogs were in only moderate supply most of the past week, and declines in prices were followed by recoveries, the eastern shipping demand being of fair proportions. Recent receipts have averaged in weight 231 lbs., comparing with 233 lbs. one year ago and 248 lbs. two years ago, and on some days the proportion of 160 to 200-lb. swine was much smaller than usual, with a much larger percentage of 350 to 400-lb. hogs. The cool weather was highly favorable for shipping hogs to market, and few dead hogs were found in the cars. Very heavy hogs of the better class sold as much as 30@35c below prime light shipping hogs, the latter continuing market toppers. The week closed with hogs selling at \$7.05@7.90 and pigs at \$5.50@7.50. A week earlier top hogs brought \$7.75.

The lamb market has pursued a sensational downward course for the past week, despite the continued meager receipts, the packers and smaller butchers complaining that the condition of the dressed mutton market was wholly unsatisfactory, as high prices were seriously curtailing its consumption nearly everywhere. Native spring lambs and native fed lambs made up most of the offerings, aside from moderate supplies of native clipped ewes. Ewes were much the most unsatisfactory sellers, bringing much lowered prices, while lambs sold far above the prices of former years. Heavy ewes were especially bad sellers. The week's decline was about 75c@1 for ewes, which closed at \$2.50@5.10, while shorn bucks brought \$4@4.75. Most spring lambs declined \$1.75, with sales at \$6@9.90, while fed clipped lambs broke \$1.50 or more, closing at \$5@9.60.

Horses were in good supply and demand last week, with demand centering in army horses, these selling at \$135@150 for riders and \$145@200 for gunners. High-class chunks too heavy for the artillery brought \$195@225, while drafters sold at \$225@260 to a limited extent. The poorer animals brought \$60@100, with farm geldings salable at \$100@140 and farm mares at \$145@165.

LIVE STOCK NEWS.

Texas grass and cake-fed cattle have been marketed rather extensively in southwestern markets quite recently, the larger share going to such receiving points as Fort Worth and Oklahoma, with fair shipments received in St. Louis. Texas recently raised its embargo on Mexican cattle, after having been enforced since the first outbreak of the foot-and-mouth disease, and this is expected to bring fair numbers of stock cattle across the border, although guerilla warfare is a serious obstacle. Stock steers are in active demand in the Missouri river markets, as well as in St. Paul and Denver, and the demand has started up in the Chicago market recently, with fair purchases in the stock yards "free" division.

The approach of fly time is a reminder that many stockmen make it a practice to market their cattle in advance in order to avoid the check in growth when flies get in their worst work. But the luxuriance of grass in the pastures almost everywhere is calculated to delay early marketings, while the great decline that has taken place in corn prices is a powerful argument for holding on to cattle and hogs until well fattened. Of course, this does not apply at all to fat, heavy steers, and owners of such should lose no time in getting them disposed of, as summer is the time when the demand runs on fat light and medium weight steers and heifers, instead of on the quality choice, but heavier cattle. Grassy cattle are such bad sellers that no good business managers will sell them at the present time, for it is sure to pay to make them good and fat. Some misguided stockmen made the mistake recently of marketing their half-fat yearling cattle in Chicago at a range of \$7.25@7.65 per 100 pounds, while the choice to prime class of yearlings were selling at \$8.75 to \$9.50. A leading live stock commission firm advises its country shippers on this score as follows: "Cattle of this kind should be turned on grass and fed about a peck of corn per head daily. If handled in this way, they would make excellent sellers for the September or October market, and it would not cost over about one-half to hold them until then compared to what it would cost to feed them in a dry lot. If cattle are handled and fed in this way, the beef will be of much better quality."

THIS IS THE FIRST 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 MARKETS.

Thursday's Market.
June 17, 1915.

Cattle.

Receipts 652. The way the embargo question on milch cows and feeding stock was handled was the main question at the yards this week. On Monday H. H. Halliday, head of the Live Stock Sanitary Commission at Lansing, was on the Detroit market and on Wednesday the embargo was lifted by him and dealers in the city and state were duly notified through the press and by commission merchants. At noon on Wednesday the government officials refused to issue certificates and nothing could be shipped out other than for immediate slaughter as before the embargo was lifted. How long this condition will last cannot be told, but shippers are advised to go slow on milch cows and feeding stock until the matter is adjusted.

The supply of cattle was far below that of a week ago, and the market was much more active, and 15¢ to 25¢ higher on all grades, due wholly to the light supply.

Best dry-fed steers \$8.25@8.50; best handy weight butcher steers \$7.75@8; mixed steers and heifers \$7.50@7.75; handy light butchers, grassers \$7@7.50; light butchers, grassers \$6.50@7.25; best cows \$5.50@6.25; butcher cows \$5@5.75; common cows \$4@5; canners \$3@4; best heavy bulls \$5.75@6.25; bologna bulls \$5.25@5.50.

Veal Calves.

Receipts 629. The veal calf trade was active at last week's prices; a few choice brought \$10, but the bulk of the good brought \$9.50@9.75, and medium and common \$7@8.50. Shippers are warned against young thin calves as they are being closely watched by the inspector and if shipped will be condemned.

Reason & S. sold Thompson Bros. 8 av 155 at \$9.50; to Buck & S. 7 av 185 at \$10; to Newton B. Co. 3 av 170 at \$10.

Robb sold Newton B. Co. 6 av 165 at \$9.

Sheep and Lambs.

Receipts 938. The supply of sheep and lambs was again very small and outside of spring lambs the quality was generally very common and the market dull as follows: Best lambs \$8.50@9; fair lambs \$6.50@7; light to common lambs \$5.50@6; spring lambs \$10@11.50; fair to good sheep \$4@4.50; culls and common \$2.50@3.50.

Bishop, B. & H. sold Fitzpatrick Bros. 3 sheep av 110 at \$4.75, 11 lambs av 85 at \$9, 12 spg lambs av 68 at \$11.75; to Parker, W. & Co. 11 do av 50 at \$9.75, 12 do av 65 at \$11.25, 15 do av 60 at \$11.25, 20 lambs av 70 at \$8.75, 32 do av 70 at \$9; to Young 8 do av 65 at \$7.

Sandel, S. B. & G. sold Parker, W. & Co. 1 yearling wgh 90 at \$7.50, 5 spg lambs av 73 at \$11; to Sullivan P. Co. 2 sheep av 175 at \$3.50, 3 do av 120 at \$4.50, 4 do av 145 at \$4.50, 10 lambs av 87 at \$7.50; to Kull 5 spg lambs av 55 at \$10; to Mich. B. Co. 8 lambs av 100 at \$7.

Roe Com. Co. sold Newton B. Co. 4 sheep av 110 at \$3, 5 lambs av 55 at \$7; to Young 11 spg lambs av 65 at \$11, 17 lambs av 90 at \$8.50.

Hogs.

Receipts 6206. The hog trade opened active and prospects at noon are 15¢ to 20¢ higher than on Wednesday, or \$7.70@7.75.

Hammond, S. & Co. sold Bishop, B. & H. 1800 av 200 at \$7.75, 600 av 180 at \$7.70.

Friday's Market.

June 18, 1915.

Cattle.

Receipts this week 873; last week 2310; market strong. No stockers, feeders or milch cows can be shipped back for feeding purposes at present. Best dry-fed steers \$8.25@8.50; best handy weight butcher steers \$7.75@8; mixed steers and heifers \$7.50@7.75; handy light butchers, grassers \$7@7.50; light butchers, grassers \$6.50@7.25; best cows \$6@6.25; butcher cows \$5@5.75; common cows \$4@5; canners \$3@4; best heavy bulls \$5.75@6.25; bologna bulls \$5.25@5.50.

Veal Calves.

Receipts this week 851; last week 1138. Market steady. Best \$9.50@9.75; others \$7@8.

Sheep and Lambs.

Receipts this week 1330; last week 1103; spring lambs \$1 lower; sheep dull. Best lambs \$8.50; fair lambs \$6.50@7.25; light to common lambs \$5.50@6; spring lambs \$9@10; fair to good sheep \$4@4.50; culls and common \$2.50@3.50.

Hogs.

Receipts this week 9553; last week 10,415. Pigs \$7.60; packers' grades \$7.75@7.80, or 5¢ higher than on Thursday.

Veterinary.

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

Sprained Back.—I have a five-year-old mare that sprained her back while running in pasture some three weeks ago. She fell down and in regaining her feet again, fell a second time, but got up without assistance. When working she has rather poor use of hind legs and is almost well. I applied liniment to back which slightly blistered and have worked her a little every two or three days. I need her to do light work, such as plowing and harrowing on old land. Do you think she will recover? F. L. W., Luther, Mich.—If light work such as you mention does not distress her, it will do her no harm. Apply alcohol to back two or three times a day; also give her 1 dr. of ground nux vomica, ½ oz. ground gentian and ½ oz. ground ginger at a dose in feed three times a day.

Splint—Eczema.—I have a three-year-old colt that has splint on left fore leg situated below knee which I have been trying to take off, and while treating this leg another splint is showing up on opposite shin. I have a ten-year-old mare that has an itchy condition of skin which affects her leg and I would like to know what will prevent it. She often rubs her legs until they bleed. E. G., Ruth, Mich.—If the splint is causing no lameness, leave it alone, or apply one part red iodine mercury and four parts lard every ten days. Give your horse a desert spoonful of Donovan's solution at a dose in feed or water three times a day. Dissolve 6 ozs. of hyposulphite of soda in a gallon of water and wet itchy parts of body twice a day; or apply one part bichloride of mercury and 500 parts water once or twice a day.

Loss of Appetite.—Since my two cows freshened they have not thrived and the medicine that our local Vet. prescribed does not seem to help them much. They do not give much milk and both of them are losing flesh. W. T. C., Lake City, Mich.—If your cows are living entirely on grass, better give them some grain twice a day. Also give each one ½ oz. of Fowler's solution, ½ oz. fluid extract gentian at a dose either in food or in a quart of water as a drench twice a day. They should be supplied with a good quality of water.

Heart Disease.—I am having a great deal of trouble with my Belgian hares. About the time the little ones get big enough to run about the floor nicely, they die suddenly. For about 20 minutes before they die, they sit humped up in the nest or sometimes out of it, but up to this moment appear to be perfectly well. I feed their mother corn, green alfalfa and dry hay; besides, she has plenty of water to drink. W. H. C., Jenison, Mich.—I am inclined to believe that your hares die of heart trouble and not any other disease. It is perhaps needless for me to say that the place where you keep them should be clean and thoroughly disinfected. Besides, the mother should have outdoor air and exercise.

Diarrhea in Turkeys.—Every year since I have farmed I have lost a number of turkeys from yellow diarrhea and I have not found a farmer but who has the same trouble. I have read some on turkey diseases, but have never found any remedy that will cure. Our local Vet. has also failed to effect a cure. I have used linseed oil, powdered chalk, laudanum, peroxide and other simple home remedies without results. I have seen whole flocks die off with this one disease. Farm and poultry journals publish articles about turkeys, but they don't seem to get a cure for this disease. Can you help us out of our trouble? If so, I believe thousands of breeders would be very thankful. Of late when we see a bird droop its wings, why, we just get the shovel. F. H., Melvin, Mich.—I am somewhat inclined to believe that your turkeys suffer from blackhead; however, this discolored condition of the head is not always present when they have this disease; however, diarrhea is a reliable symptom of the disease and when old turkeys are infected their droppings are stained with yellow; furthermore, the liver usually contains parasites and unless you are equipped with a strong magnifying glass you could not discover these parasites in their droppings, but, after death you might be able to find them in the liver. You will find the liver sores resembling a ringworm on a person and if so you can safely say that your turkeys have blackhead. As there is no remedy for this disease, I would advise you to discontinue breeding turkeys for four or five years; at the same time thoroughly clean and disinfect their house and roosting place.

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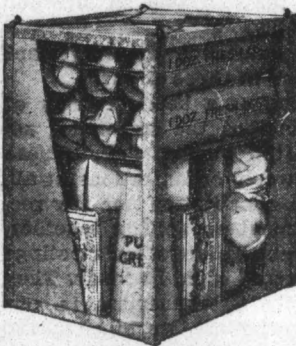
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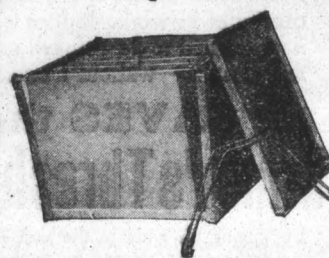


Parcel Post or Express Box



Weight 4 1/2 lbs.

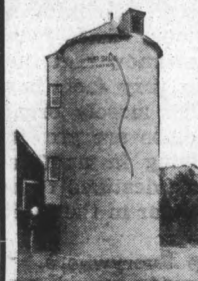
Safe, Light, Strong, Durable. Can be used repeatedly. Box to left equipped to carry safely 10 doz. eggs, or partitions for 2 doz. Eggs, Butter, Chicken, Fruit or Vegetables. Postage empty second zone 9c, filled with eggs 24c. Either style 50c. To the right a fine looking safe box equipped with common fillers to carry 12 doz. eggs, direct or by Express to market and groceries on return. Price 45c. Either box fine for picnic purposes, all kinds of Butter and Egg shipping supplies. Prices F. O. B. Saginaw, Mich., add postage for shipment. Address Dept. E.



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SAVE \$7.75 on Every SALT
For your stock get "MEDICO"—mix it yourself with common salt. Cheapest and most effective way to kill worms. Write for "Worm Destruction" free on request.
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WANTED position as farm manager or herdman. Thoroughly experienced, good references. Have completed special course at M. A. U. Box M-626, Caro Mich. Farmer, Detroit.

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Real money-making farm and exceptionally attractive home in one of the best farming communities in New York State; 50 acres machine worked fields, big crops hay and alfalfa; pasture for 20 cows; 6 acres wood; 50 bearing apple trees, other fruit; 2-story 12-room house stands on elevation, overlooks lake which farm borders, 40-ft. cow barn, big horse barn, silo, ice house, etc.; near neighbors and schools, only four miles to two R. R. stations, photograph of buildings and lake together with full traveling directions to see it and a 77-acre farm for only \$1650, page 20, "Strout's farm Catalogue 33," write today for your free copy.

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Barry County Farms—most profitable general farming section in State. Real bargains. Write for list A. Benham & Trim, Hastings, Mich.

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On Account of age I will sell my 160 A. farm cheap 100 A. improved—best buildings in county. Write D. F. MORRISON, Germantown, Michigan.

We handle on commission only
POULTRY, CALVES, EGGS, POTATOES
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HAY OUR NEW LOCATION—
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FARMERS—We are paying from one to three cents above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., Detroit, Mich.

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is compounded to produce results—it is made of choice cottonseed meal, dried beet pulp, gluten feed, corn distillers' grains, wheat bran, wheat middlings and a little salt—that's all. Properly blended, thoroughly mixed to produce lots of milk—good milk and keep your cows healthy. Sold on a plan of money back if you are not satisfied. LARROE agents almost everywhere. Write us if none near you. (43)

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Farm Commerce.

"Buying Clubs" Help Farmers

How Little Clubs In Our Cities are Working Out an Important Problem

THE first question that a member of a "buying club" asked after returning from a few days outing was whether any butter had been saved out for him from the last consignment received from the country during his absence. It was learned that he had purchased a pound of butter from the grocery store to tide him over and that the quality was so inferior to that received directly from the country that he was anxious for his usual supply.

Personal Acquaintance the Important Factor in these Clubs.

The securing of a better quality of produce is one of the important advantages of the buying club. These clubs are scarcely organizations at all, not having a constitution nor any record of the members getting together, nor in fact, any get-together meetings of which a record could be made. They consist simply of consumers in our large cities who are working in the same office or factor, or for the same company, and who verbally agree among themselves that each will take a certain portion of every shipment of goods received by some one of their number from producers. So informal are these organizations that many members do not even know that they belong to one. The very fact, however, that under such loosely organized bonds, buying clubs are growing in size and multiplying in numbers, signifies that they are destined to become an important factor in the direct selling business.

They Sprang up Everywhere.

Almost simultaneously these clubs began springing up all over the country. In Detroit there are known to be a large number of them. New York city has two hundred or more, Chicago and Philadelphia one hundred each, while there are scores in such places as Boston, Washington, St. Louis, Kansas City, Lincoln, Toledo, Cleveland, Pittsburg, Louisville, Ft. Wayne, and dozens of smaller places.

Notwithstanding the fact that the express companies have been instrumental in promoting these organizations to create a line of business to take the place of that which was lost through the establishment of the parcel post, many of these clubs are patronizing the parcel post service, either for a whole or a portion of their consignments. The system employed depends largely upon the amount of produce being shipped and the partic-

ular service that can be secured in each given case.

Market Bulletins are Being Published.

In many instances the express companies are rendering an unusual service for the encouragement of these clubs. They not only send around agents to get the consumers together, but they also solicit produce from farmers along their respective lines. In order to keep both the producers and consumers informed on market conditions, they issue a weekly quotation sheet which is liberally distributed among consumers and producers for their special benefit.

This same service is being offered by the post office department through bulletins issued by the local postmasters in several of our large cities. In Detroit, for instance, such a bulletin listing the names, addresses and products for sale by each person, is published frequently and distributed generally among the residents of the city. The buying clubs take advantage of these opportunities to inform themselves of the prices being asked and to direct them in their ordering. **These Clubs Buy Considerable Produce.**

Although these little clubs do not propose to do any large business, it is quite surprising what the aggregate accounts for a season amount to. For example, one Detroit club of only six members sends out about \$500 a year to the farmers it patronizes. One large club in Chicago ordered from the country during one winter month, 1,000 pounds of butter, 2,000 dozen of eggs and 1,505 pounds of honey, besides sausage, maple syrup, poultry, etc. In a small town of 7,000 people a community club recently placed a monthly order for 1,500 pounds of meat, 1,400 pounds of butter, 900 dozen eggs, 600 pounds of poultry and 50 dozen crates of celery. From these figures it can at once be realized what a large quantity of products will be required to supply the demands from hundreds of such organizations.

The Question of Profits.

The question would naturally arise to all readers of a farm paper as to just how much the farmer could expect to realize in undertaking to supply produce to one of these buying clubs. The usual margin between the prices received by the farmers in the regular marketing system and that paid to retailers by the consumers is sufficient to give the producer a sub-

stantial increase in price and at the same time get the produce to the club at a much reduced cost as compared with what members are obliged to pay their local merchant. Three years' experience has shown that eggs, for instance, bring the farmer from three to five cents more per dozen through this method of selling. A similar experience in the sale of butter shows an advantage of about four cents per pound in favor of the direct selling plan. Last year growers netted \$1.90 per bushel for their best peaches when they would have received only \$1.35 from the dealer; other grades sold at \$1.50 instead of \$1.00, and \$1.10 instead of 90 cents. Cantaloupe growers made 50 per cent larger returns by selling direct.

Returns Largely Dependent Upon the Producer.

Just what can be realized from a business of this kind will, as everywhere else, depend upon the producer himself; if he exercises every care in the production of crops of high quality and then grades and packs those products so that the consumers are satisfied with the goods they are getting to a point of becoming enthusiastic, the producer is bound to succeed. On the other hand, a market of this kind will be most disappointing to the careless man, since faults in the goods can be directly traced to him.

As intimated above, we believe that these buying clubs are going to be of considerable aid in the marketing of farm crops in the future. As soon as the consumer and producer get together, they begin to discover new lines of products that can be sent directly instead of through the many middlemen that such products are obliged to pass in the old system. With the growth of business done will come a reduction in the cost of handling, not only by reducing the transportation charges, but also in delivering to the transportation company and in distributing at the receiving end. While we do not pose as prophets, we are inclined to believe that these very organizations will ultimately grow until they own their storage houses and other conveniences for handling these goods on an economical basis. That has happened in England, and there is every reason for its repetition in this country.

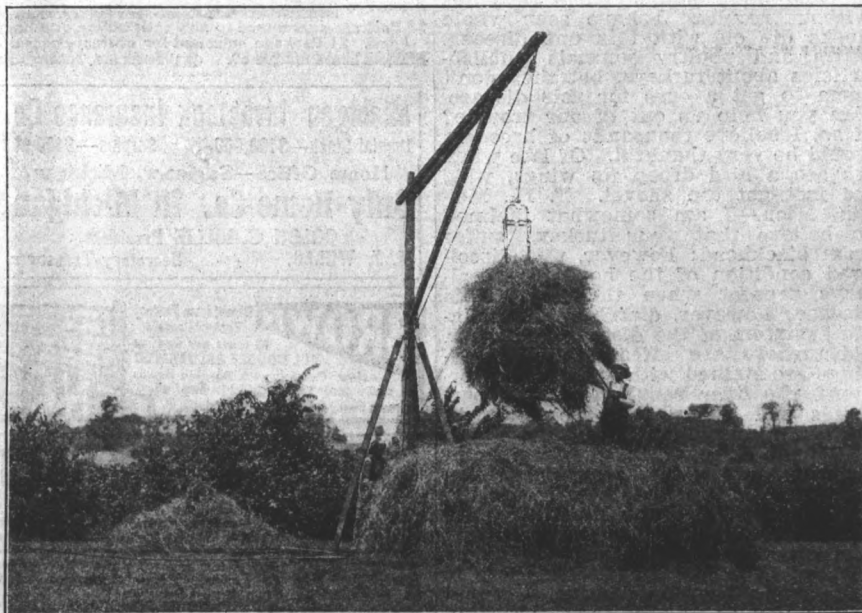
Should be Encouraged.

We believe that farmers should encourage these organizations wherever possible. In the preliminary offers made to producers, it frequently happens that quotations may not look attractive enough to induce the farmer to go to, what might seem to him, as much trouble in selling the produce asked for. If he is a live farmer, however, he will make a close investigation before turning down the proposition, for the advantages of a connection with an association that is sure to keep on buying as long as its members make a small saving in the purchase of the goods they must have, and receive those goods in better condition, are such as to appeal to the business farmer.

SHIPPING BUTTER IN WARM WEATHER.

Can you secure customers for me in the city? We are making butter from five cows. We have been selling milk but need the skim-milk for calves and pigs. What would be the best way to ship butter, in crocks or paper firkins? Oakland Co. E. A. LEE.

Any reader of this journal desiring to secure customers to whom he can sell farm products direct, is requested to send his name, address and a list of the products for sale, to this department of the Michigan Farmer. His name will be arranged with others on a printed list and distributed among well-to-do families of Detroit, who will be asked to correspond with those on the list, looking toward an arrangement for buying farm products direct from these growers. Many of (Continued on page 706).



Net Profits are Increased by Low Cost of Production as well as by High Market Prices.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900.
TROYAN-EMIGAS and BLACKBIRDS only. A few young bulls and cows for sale. Also breeders of Percheron, Hackney and Saddle Horses.
WOODCOTE STOCK FARM, Ionia, Mich.

Aberdeen-Angus Bulls.

We are offering 12 extra good bulls, among them prize-winners at the Michigan State Fair 1914. Some of them by Black Monarch 3rd, Grand Champion Bull of the State 1914. Others by the Great Sir Blackbird, sire of prize-winners, ages from 9 to 20 months old. Prices from \$100 to \$250 each. Come and look them over; they will please you. U. L. Clark, Hunters Creek, Mich. Sidney Smith, Manager.

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

THE VILLAGE FARM,
Grass Lake, Michigan,
GUERNSEY CATTLE.

MILK D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM
GUERNSEYS

Combine the blood of the following great producing sires and dams:

Major Sequel	57 A. R. Daughters
Galaxy's Sequel	37 A. R. "
Glenwood Boy of Haddon	25 A. R. "
May Rose King	21 A. R. "
Dairymaid of Pinehurst	110 lbs. fat
Dolly Bloom	336 "
Imp. Richman Daisy	714 "
Selma of Pinehurst	762 "
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Bulls for sale only.

A Dairy Show Every Day.
CAMPBELL & ANGEVINE, Coldwater, Mich.

Purebred Guernseys, 2-year-old bull from A. R. stock, good individual, not registered, 1200 lbs. Best price. Also registered females and bred heifers. G. A. Wigent, Watervliet, Mich.

For Sale—Registered GUERNSEY COWS, HEIFERS AND BULLS of choice breeding. H. W. WIGMAN, Lansing, Mich.

REGISTERED GUERNSEY BULL CALVES for sale cheap at Windermere Farm, Watervliet, Mich. May Rose breeding. Address, J. K. BLANCHARD, Auditorium Tower, Chicago, Ill.

For Sale—Reg. Guernsey Cattle and BERKSHIRE SWINE either sex. JOHN EBELS, R. 10, Holland, Michigan.

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

GUERNSEYS—Write for prices and particulars. 2 bulls 1 year old. Several bull calves, all from A. R. cows and cows on test. Geo. N. Crawford, Holton, Mich.

GUERNSEY BULLS FOR SALE, ready for service from A. R. Dams. If you want the right kind write for price and heading. BYERS & BARNES BROS., Coldwater, Michigan.

REG. GUERNSEY BULL \$100 2 years old. GEO. STRONG, So. Rockwood, Mich.

HEREFORD; Three bull calves and one two year old. ALLEN BROS., Paw Paw, Michigan.

Do You Want A Bull?
Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 65% fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

ESPANORE FARM,
LANSING, MICHIGAN.

Home of the great Holstein Bull "PLEDGE SPOFFORD CALAMITY PAUL" with 33 A. R. O. daughters, including a 5-year-old with a 35-pound record. Others from 20 to 32 pounds.

FOR SALE—A Bull Calf sired by this Great Bull.
CHASE S. OSBORN, } OWNERS.
ADAM E. FERGUSON, }

HOLSTEINS FOR SALE

- 5 Good Bulls, ready for service.
- 10 Very Choice Bull Calves.
- 2 Two-year-old Heifers, bred.
- 1 Six-year-old grand-daughter of King Segis, due in December.

L. E. CONNELL, Fayette, Ohio.

HATCH HERD
YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke; Brother of K. P. Pontiac Lass 44.15; average record of 50 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.93. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

Bigelow's Holstein Farms
Breedsville, Michigan.
Highest Class Registered Stock For Sale.

FOR SALE—2 Registered Holstein heifers and one bull 6 months old for \$300, delivered. Bull sired by Hartog Clothilde 1st, 104372, whose four nearest dams' records average over 32 lbs. Pine Hill Farm, R. 6, Lakewood, Mich.

Registered Holsteins. The calf sold to a satisfied customer. Nothing more to offer at present. W. R. READER, Howell, Mich.

300 DUROC JERSEY SPRING PIGS

Bred from Prize Winning Stock of Best Blood Lines.

Save Money and Express by Buying 2 to 4 Months Old Pigs NOW!

SPECIAL PRICES ON PAIRS and TRIOS

This is an opportunity to buy from a herd where time, money and intelligent effort has not been spared to make the

BROOKWATER BRAND OF DUROCS LEAD

Durocs of all ages for sale. Come or write for particulars.

Swine Department

Brookwater Farm, R. 7, Ann Arbor, Michigan.

\$100 Get 5 mo. 1/4 white grandson of Friend Hengerveld De Kol & Maplecrest Pontiac Flora Hartog, 30 lbs. butter 7 days, 1232 lbs. in 1 yr. M. L. McLAULIN, Redford, Mich.

Reg. Holstein Bull calves and Herd Bull. Can supply all wants in Reg. Chester White swine. Ray B. Farham, Bronson, Mich.

FOR SALE—REGISTERED HOLSTEIN BULL born Feb. 26, 1915. Mostly white. Dam has A. R. O. record, also Chester White Pigs. CHARLES L. COOK, Box 438, Fowlerville, Michigan.

REG. HOLSTEIN BULL CALVES good A. R. O. breeding, and plenty of 30-lb. blood in their pedigrees. Dewey C. Pierson, Hadley, Mich.

REGISTERED Holstein bull 6 months old. Mostly white. A. R. O. dam and sire. Here is some of the best blood of the breed and a very nice individual. \$75 delivered with all papers, safe arrival guaranteed. Write for pedigree. HUBART W. FAY, Mason, Mich.

High Class HOLSTEINS My herd is headed by Smithdale Alcantara Pontiac, whose dam is the famous Alcantara Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred, Farm 1/2 mile from court house. SETH B. ROBERT, Howell, Mich.

MAPLECREST De Kol Hengerveld, an own brother to a World's Champion heads our herd. Choice Bull Calves for sale, or will exchange for registered heifers or cows. HILLCREST FARM, Kalamazoo, Mich.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISCHBECK, Howell, Michigan.

HOLSTEIN BULL CALVES—Don't buy until you write us. No better breeding in Michigan. Long Beach Farm, Augusta, Kalamazoo Co., Mich.

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

REG. HOLSTEIN BULL, yearling. Dam an A. R. O. cow. Sire a dam made 30 lbs. butter in 7 days. Send card for price, etc. E. R. CORNELL, Howell, Michigan.

\$350 buys two yearling Holstein Heifers 1/2 white and one bull, not akin, all registered. Choice breeding. B. B. REAVEY, Akron, Michigan.

MICHIGAN HOME AND TRAINING SCHOOL
LA PEER, MICHIGAN
Breeder of High grade Holstein Cattle. Lists and prices upon application.

HOLSTEIN CATTLE and O. I. C. SWINE
ELMER E. SMITH, Redford, Michigan.

Holsteins—One herd bull two nearest dams averaging 35.05 pounds. Five registered yearling Holstein bulls, two cows, bull calves from sire, whose two nearest dams average 34.45 pounds butter in seven days. Oldest Holstein herd in Indiana. W. C. JACKSON, 719 Rex St., South Bend, Indiana.

JERSEYS
FOR SALE

One Bull—Two Cows—One Heifer. All registered. One cow soon to calf. A bargain at \$450 for the bunch.

NIXON FARMS, Brooklyn, Mich.

Maple Lane Register of Merit Jersey Herd. Tuberculin tested by U. S. Government. For sale bull calves and heifer calves from B. of M. dams and grand dams, and Hood Farm Sire.

IRVIN FOX, Allegan, Michigan.

THE WILDWOOD JERSEY HERD
Registered Jersey Cattle of Quality. Tuberculin tested. Majesty's Wonder, No. 10711, heads the herd. Bull calves for sale, also a two-year-old bull that is right. For prices and description write or come. ALVIN BALDEN, Capac, St. Clair Co., Michigan.

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

Jerseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emano, No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

JERSEYS—THE REGISTER OF MERIT KIND.
BROOKWATER FARM, R. No. 7, Ann Arbor, Mich.

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

The Jersey Sire is King of the Dairy World.

FISHERTON FARM JERSEYS—Some fine grandsons of Hood Farm Pegasus 9th, from Register of Merit dams. FISHERTON FARM, Pontiac, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk"
Registered Bulls, Cows and Heifers Scotch-topped roans, reds and whites for sale. Farm at L. S. & M. S. Depot, also D. T. & I. R'y.
BIDWELL STOCK FARM
Box B. Tecumseh, Mich.

Shorthorns for Sale, farm 1/2 mile east of Davis crossing on A. A. R. R. W. R. McQUILLAN, Chilson, Liv. Co., Michigan.

MILKING SHORTHORNS—Young bulls sired by a Grand Pay Ovis bull for sale. DAVIDSON & HALL, Tecumseh, Michigan.

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

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

Dairy Bred Shorthorns of best Bates strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

HOGS.

BERKSHIRES Choice spring boars and gilts, priced to move quick. Farmers stock. ELMHURST STOCK FARM, Almont, Mich.

Durocs & Victorias—Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

FOR SALE—Berkshire hogs, both sexes and different ages. Bred gilts for fall farrowing. Full Angus Bull Calf, not registered. Price right. Chase's Stock Farm, R. 1, Macleto, Mich.

Royalton Bred Berkshires—Boar pigs ready to ship last of July at 12 weeks weeks age with registry papers. Write for pedigree and prices. D. F. VALENTINE, Supt., Temperance, Mich.

HAMPSHIRE SWINE—Breeding stock of all ages from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 2, Deatur, Ind.

Hampshire Swine, the kind that wears the belt. Spring pigs and two serviceable boars. Prices right. Papers furnished. S. C. MORT, Elsie, Mich.

WEST WINDS HAMPSHIRE SWINE. Booking orders for spring pigs immediate shipment. No males to offer. E. P. Hammond, owner. N. A. Wisner, manager, Pontiac, Mich.

Chester Whites—Gilts bred for Aug. and Sept. farrow. March pigs, either sex. F. W. ALEXANDER, Vassar, Michigan.

Big Type, O. I. C's and Chester White Swine.

400 fall pigs either sex, special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig, all our stock is good O. I. C. or Chester White. We won, more prizes than all other breeders put together, at Ill., and Wis. State Fairs. Write for Show record.

ROLLING VIEW STOCK FARM
Cass City, - Michigan.

O. I. C.—Spring boars all sold. We have some fine fall pigs ready to ship. JOHN BERNER & SON, Grand Ledge, Michigan.

O. I. C. Registered Pigs Write for photo and prices. J. CARL JEWETT, Mason, Michigan.

O. I. C's—Bows bred to farrow last of June and July. Prices reasonable. G. P. ANDREWS, Dansville, Michigan.

O. I. C.—Gilts bred for Aug. and Sept. farrow. Will take orders for March and April pigs. H. W. MANN, Dansville, Michigan.

O. I. C's—Spring pigs, pairs and tris, not akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Mich.

O. I. C.—25 sows bred for Spring farrow. 75 Fall pigs, large and growing. Write your wants. GLENWOOD STOCK FARM, Zeeland, Michigan.

O. I. C's—STRICTLY BIG TYPE

Gilts bred for Sept. farrow and March pigs now ready to ship. Extra good ones at prices that will move them. Pairs not akin. I will be pleased to ship them O. O. D. and record them free in purchaser's name. NEWMAN'S STOCK FARM R. No. 1, Marlette, Mich.

O. I. C. SWINE—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept? If you are, write me. I have them. A. J. GORDEN, R. No. 2, Dorr, Michigan.

O. I. C's—Two good boars 12 months old, good fall fall pigs, either sex, and this spring boars. 1/2 mile west of depot. OTTO B. SCHULZE, Nashville, Michigan.

O. I. C's—Service boars, gilts, sows, spring pigs—none better. Satisfaction guaranteed. A. K. GRAHAM, Flint, Michigan.

O. I. C. Pigs, 8 to 10 Weeks Old \$10. Pairs not akin. C. J. Thompson, Rockford, Mich.

O. I. C. PIGS farrowed in May and June. A choice brood sow 1 yr. old. Also S. G. White Leghorn eggs. Chickens and Cockerels. Satisfaction guaranteed. Bruce W. Brown, Mayville, Mich.

O. I. C. CHOICE FALL BOARS, ready for service, at bargain prices. Registry furnished. WEBER BROS., Royal Oak, Michigan.

O. I. C. Choice Sept. pigs, either sex. Will take orders for March, April and May pigs, not akin. ALVIN V. HATT, Grass Lake, Mich.

Way Brothers Stock Farm. The home of the big bone O. I. C. Hogs. Stock for sale. Registered free. J. R. Way, Pompeii, Mich.

DUROC JERSEYS—A few fall boars and 12 bred gilts for sale. CAREY U. EDMONDS, Hastings, Michigan.

FOR SALE—Fancy bred gilts, fall males, spring pigs, of the large, smooth kind. Price to sell. JOHN MCNICOLL, Station A, R. 4, Bay City, Mich.

Capitol Herd Duroc Jersey Swine. Established 1888. Young boars and bred sows for sale. I pay the express. J. H. BANGHART, Lansing, Michigan.

HEAVY BONED DUROC JERSEYS FOR SALE. Some extra nice spring pigs ready to ship. M. A. BRAY, Okemos, Ingham Co., Michigan.

Duroc Jerseys. Bred to service boars: gilts for June farrow. Bred to service of Volante, G. D. Cham, at 1912 International. F. J. Dredt, R. No. 1, Monroe, Mich.

DUROC Jersey bred gilts, bred for Aug. and Sept. farrow from leading blood lines; also a few good boars. Write for circular and prices. W. C. Taylor, Milan, Mich.

Duroc Jerseys: A few choice boars ready for service. Bred from prize winning stock. Cliff Middleton, Idlewild Farm, R. F. D. No. 3, Clayton, Mich.

Duroc Jersey of Volante Champion of 24 State Fairs and Chicago Show in 1912. E. H. Morris, Monroe, Mich.



I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10, Portland, Mich.

MY OH MY!
What an Opportunity.

Starting May 1st, we are going to give to the farmers and breeders an opportunity to get started right in the breeding industry. We are going to give you a chance to get hold of foundation stock that will give you a nucleus for one of the finest and best herds in your community. We are going to show you as we have others, that you will have greater success with our big type

POLAND CHINAS than with any other breed. We want to place at least one pig, or a pair in every community, to advertise our herd. If interested, write for our plan and prices. HILLCREST FARM, Kalamazoo, Mich.

DUROC JERSEYS—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

SOLD POLANDS as far south as Miss. north and S. west as far as Washington. Every customer satisfied. I can satisfy you. Breeding stock for sale at all times. FRANK KRUGER, Ravenna, Michigan.

POLAND CHINA Spring Pigs from heavy boned prolific stock. Sows bred for summer and fall pigs at close prices. ROBERT NEVE, Pierson, Michigan.

BIG TYPE P. C.—Head boar. Hoosier Giant, also pig sired by him, a few bred sows, 1 young bear by Big Smooth Jumbo. Mrs. J. E. Braithwaite, Brant, Mich.

Poland Chi as, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

LARGE TYPE P. C.—Either sex, pairs and tris, not akin. Am booking orders for bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Big Boned Poland Chinas. Fall gilts bred weighing from 250 to 300 lbs. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C. Boars ready for service and sows with fall farrow of the best breeding, to be had at bargain prices for the next 30 days, must have the room for others. H. O. SWARTZ, Schoolcraft, Michigan.

Poland China—Am booking orders for male pigs to be shipped at weaning time. G. W. HOLTON, R. No. 11, Kalamazoo, Michigan.

BIG TYPE POLAND CHINAS. Extra large with show quality. Six big, husky, pasture grown fall boars by Big Smooth Jumbo and Giants Hadley Boy. Bear Creek Farm, Addison, Mich.

FALL PIGS AT HALF PRICE
Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and tris not akin \$5 each. J. C. BUTLER, Portland, Mich. Bell Phone.

BIG Type boars by Big Smooth Jumbo. Greatest boar in State, 748 lbs at 17 mo. These boars are long, tall, big bone, sold at farmers prices, shipped C. O. D. Call or write. Wm. Waffle, Coldwater, Mich.

LARGE TYPE P. C.

Largest in Michigan. Bred gilts all sold. A few extra good fall pigs priced to move them quick.

W. E. LIVINGSTON, Parma, Mich.

50 YORKSHIRES—All ages. Red Polled Cattle. Oxford Down Sheep. W. P. Rocks, I. R. Ducks, E. S. CARR, Homer, Mich.

YORKSHIRE SWINE. Boars ready for service. A gilt bred for June farrow. Weanling pigs 6-10 weeks old. GEO. S. McMULLEN, Grand Ledge, Mich.

For Sale—Yorkshire Gilts from large litter, bred for fall farrowing. Waterman & Waterman, Ann Arbor, Mich. Meadowland Farm.

Mulefoot Hogs—Weanling pigs, pairs not akin. Bred service boars. C. F. BACON, Ridgeway, Mich.

Lillie Farmstead Yorkshires. Boars ready for service. 1 Gilts bred for Sept. farrow. Spring pigs, pairs and tris, not akin. Colon C. Lillie, Coopersville, Mich.

REGISTERED YORKSHIRES

Imported Strain. Both sexes. Prices Reasonable. Hatch Herd, Ypsilanti, Michigan.

REGISTERED YORKSHIRES—MARCH PIGS fine boars. JOS. H. BREWER, Belmont, Mich.

YORKSHIRES

Bred gilts, service boars, September and October pigs. Prices reasonable. W. C. COOK, R. 42, Ada, Mich.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Shepherds of the East." I sell and ship everywhere and pay express charges. Write for club offer and price list. Oxfords, Shropshires and Polled Dorsets. PARSONS, Grand Ledge, Mich. R. 1.

Registered Oxford Down Sheep—Write your wants. M. F. GANSSLEY, Lennon, Michigan.

HORSES

FOR SALE—Registered Percheron Stallion Mare and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

Shetland Ponies—Closing out at low prices on account of selling my farm. Registered stock. J. M. REDDOW, Birmingham, Mich.

Registered Percherons Brood mares, Fillies and Young Stallions. Priced to sell. Inspection invited. L. C. HUNT & CO., Eaton Rapids, Michigan.

SHIPPING BUTTER IN WARM WEATHER.

(Continued from page 704).
our readers have already availed themselves of this opportunity, and are succeeding beyond expectations.

We have had experience in shipping butter in crocks, firkins, and one-pound butter cartons; all have given good satisfaction, but we are a little inclined to favor the use of the one-pound carton. The crocks are heavy and occasionally break during transit, causing a loss of butter and trouble to the receiver. The firkins or fibre boxes, are light and inexpensive, but somewhat inconvenient to pack where several are sent in one consignment. The pound cartons being rectangular in shape, are easily packed and wrapped for shipment by express or parcel post, and the cost is about the same as for fibre boxes. Then the consumer is usually better satisfied with the pound cartons because butter so packed is more convenient to handle and use.

Where the cartons are used, one should have a butter mold of proper shape and size to hold a pound of butter. To pack, the butter should be shaped in this mold, deposited upon a sheet of parafined parchment paper in which it is wrapped, and then inserted in the carton and the ends carefully tucked in. When the full consignment is packed in the little cartons they may be piled together and wrapped in corrugated cardboard, or placed in a shipping box for forwarding to the customer. This makes a neat and compact package that can be handled with safety.

For a time we had butter shipped in

a crate that held six five-pound crocks, and found it carried safely if packed so the crocks would not come in contact with each other, but notwithstanding this experience, some of the express companies refused to accept the crocks crated in this way. During the warm months we have received butter shipped by the different methods mentioned and have found that where carefully packed, it invariably comes through in good condition. Of course, the shipper should use judgment, and where possible have the consignment enroute to its destination during the night; this will aid considerably in insuring its safe arrival.

Crop and Market Notes.

Michigan.

Livingston Co., June 15.—Weather is wet and cold and corn is not making much growth. Meadows good but short for the time of year. Wheat and rye are looking good. There will be a large acreage of beans planted but they will be late, as farmers are waiting for warm weather. Prospects for the fruit crop are quite promising.

Calhoun Co., June 14.—Wheat and rye are fine, both heading out well. There is the usual amount of corn, and more than average acreage of beans and potatoes. Meadows are short. Fruit prospects are not very good owing to late frosts. A good deal of spraying done throughout the season. Most potatoes planted were treated for scab. Butter 25c; eggs 15c; seed potatoes 45¢@95c.

Ohio.

Wayne Co., June 14.—Weather dry and cool with frost in May damaging potatoes, fruit and corn. Wheat is nearly all headed and looks promising. Oats good on low lands but short on hills. Meadows short, and hay will be poor, especially on high land. About

the usual amount of corn planted, just up and ready for first cultivation. Potato acreage normal, late potatoes just being planted. Fruit fair but injured by cold weather. Usual amount of spraying done. Wheat \$1.13; oats 50c; corn 40c per basket of ears; butter 25c; eggs 19c.

Highland Co., June 14.—Corn all planted and coming up nicely. Pastures look fairly well. Meadows below average. Wheat in average condition. Rye good. Oats extra good. Cherries promise a good crop, other fruit only fair. Very little spraying done. Sheep and lambs scarce. Wool 28¢@30c; wheat \$1.10; oats 60c; corn 85c; hay \$15; hogs \$6@6.50; butter-fat 25c.

Paulding Co., June 14.—Wheat is looking well; corn very backward and growing slowly. A good acreage of corn, oats and sugar beets planted. Not many potatoes planted. Good prospect for fruit where trees have been sprayed. Wool crop light, price 30¼c. Sheep \$5; lambs \$9; veal \$7.50; hogs \$7.50; butter-fat 29c; corn 97c per cwt; oats 42c; wheat \$1.18.

Coshocton Co., June 15.—With favorable condition, wheat promises an excellent crop, and there is a large acreage. There is a good stand of young clover, but not much clover for cutting, and the hay crop will also be light. Alfalfa was cut last week. There is a large amount of corn, but the growth is small for the time of year. Potatoes good. Cherries are ripening and there is a good crop, also a large amount of peaches and plums and an average apple crop. No prices are being offered for wool yet. Wheat \$1; corn 85c; hay \$15; eggs 18c; butter 18c; cream 28c; lambs 9c.

Greene Co., June 14.—Small grains are beginning to ripen, though storms caused some wheat to break off where infested with Hessian fly. Corn is a good stand and is receiving its second cultivation. Potatoes growing fine, but the acreage is small. No beans grown commercially. Apple and peach prospects are good, not much spraying was done after blossoming. Wool prices somewhat lower than earlier in the season. Milk 13c per gallon. Butter-fat 27c; corn 70c; wheat \$1.25.

Indiana.

Jay Co., June 14.—Weather is favorable for grain crops, but rather wet for good corn cultivation. The acreage of corn is above average, and most of it is up. Alfalfa hay making is under way. Fruit prospects are fine, with most orchardists using some spray. Cherries will be particularly good. No peaches. The pig crop is below normal. Not many sheep in this locality. Wool brings 30c and is scarce. Farm help is easily obtainable. Tractors are beginning to play an important part in our farming. Wheat \$1.10; corn 95c; oats 43c; rye 85c; potatoes 50c; hay \$12@13.50 baled; butter 20¢@25c; cream wagons pay 26c for cream; eggs 15c; poultry 11c; cattle \$4@8; hogs \$7.35.

Daviess Co., June 14.—Too much rain and all corn is in need of cultivation. Corn acreage larger than usual. Wheat badly damaged by the fly, and much of it will not be cut. Meadows and oats doing exceptionally well. Cowpeas, beans, etc., not planted yet on account of wet weather. Prospects good for apples, no other fruit to speak of. Spraying has generally been done, especially second summer spraying. Hogs \$6.50@7; cattle \$7@8.50; butter-fat 28c; eggs 16c; wool 27c; corn 85c; wheat 90c; hay \$18.

Missouri.

St. Louis Co., June 13.—Wheat and oats fine in some places, on low land very poor. Meadows fine. Corn will be a large crop on low lands if it drains off in time. Prospects for potatoes good. Vegetables of all kinds plentiful and the cheapest in years. A great deal of rye in shock and will thresh high. Heavy rain and wind storm today, leveling grain and trees.

North Dakota.

Foster Co., June 14.—We just had a fine rain which was needed, as pastures were growing very slowly. The frosts in May affected corn, barley and garden crops. Not much wool produced, selling for 18¢@20c per pound. Cattle doing fine and bring \$6.25@6.75; hogs \$6.10@6.50; butter-fat 32c; butter 20c; eggs 15c.

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